

ENVIRONMENTAL PROTECTION COMMISSION[567]

Former Water, Air and Waste Management[900], renamed by 1986 Iowa Acts, chapter 1245, Environmental Protection Commission under the “umbrella” of the Department of Natural Resources.

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TITLE I
GENERALCHAPTER 1
OPERATION OF ENVIRONMENTAL PROTECTION COMMISSION

[Prior to 12/3/86, see Water, Air and Waste Management[900] Ch 2]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—1.1(17A,455A) Scope. This chapter governs the conduct of business by the environmental protection commission. Rulemaking proceedings and contested case proceedings are governed by other departmental rules.

[ARC 7942C, IAB 5/15/24, effective 6/19/24]

567—1.2(17A,455A) Meeting location and notification.

1.2(1) Time of meetings. The commission generally meets monthly, but is required to meet at least quarterly. The director, chairperson, or a majority of commissioners may establish meetings.

1.2(2) Notification of meetings. The director will provide public notice of all meeting dates, locations, and agendas.

a. Notice of meetings is given by posting the agenda. The agenda lists the time, date, location, and topics to be discussed at the meeting. The agenda may include a specific time for the public to address the commission on any issue related to the duties and responsibilities of the commission, except as otherwise provided in these rules.

b. The agenda for each meeting will be posted at the department's main headquarters and on the department's website. The agenda will be provided to anyone who files a request with the department. The final agenda will be posted at least 24 hours prior to the meeting, unless for good cause such notice is impossible or impractical, in which case as much notice as is reasonably possible will be given. Any additions to the agenda after posting and distribution will be posted at least 24 hours prior to the meeting, unless for good cause such notice is impossible or impractical, in which case as much notice as is reasonably possible will be given. The commission may adopt additions to the agenda at the meeting only if good cause exists requiring expeditious discussion or action. The reasons and circumstances necessitating agenda additions, or those given less than 24 hours' notice by posting, shall be stated in the minutes of the meeting.

c. Written materials provided to the commission with the agenda may be examined by the public. Copies of the materials may be distributed at the discretion of the director. The director may require a fee to cover the reasonable cost to the department to provide the copies, in accordance with rules of the department.

[ARC 7942C, IAB 5/15/24, effective 6/19/24]

567—1.3(17A,455A) Attendance and participation by the public.

1.3(1) Attendance. All meetings are open to the public. The commission may exclude the public from portions of the meeting in accordance with Iowa Code section 21.5.

1.3(2) Participation.

a. Items on agenda. Presentations to the commission may be made at the discretion of the chairperson.

b. Items not on agenda. The commission will not act on a matter not on the agenda, except in accordance with paragraph 1.2(2)“*b.*” Persons who wish to address the commission on a matter not on the agenda should file a request with the director to place that matter on the agenda of the subsequent meeting.

c. Meeting decorum. The chairperson may limit participation as necessary for the orderly conduct of agency business. Cameras and recording devices may be used during meetings provided they do not interfere with the orderly conduct of the meeting. The chairperson may order the use of these devices discontinued if they cause interference and may exclude those persons who fail to comply with that order.

[ARC 7942C, IAB 5/15/24, effective 6/19/24]

567—1.4(17A,455A) Quorum and voting requirements.

1.4(1) Quorum. Five or more commissioners present at a meeting constitute a quorum.

1.4(2) Voting.

a. Voting requirements if eight or nine commissioners are currently appointed. If eight or nine commissioners are currently appointed to the environmental protection commission by the governor, then the affirmative votes of five or more commissioners shall be required to act on any matter within the jurisdiction of the commission.

b. Voting requirements if seven or fewer commissioners are currently appointed. If seven or fewer commissioners are currently appointed to the environmental protection commission by the governor, then the affirmative votes of four or more commissioners shall be required to act on any matter within the jurisdiction of the commission.

c. Voting requirements to go into closed session. Notwithstanding paragraph 1.4(2)“a” or 1.4(2)“b,” a vote to go into closed session shall require the concurrence of six or more members of the commission or the concurrence of all members present if fewer than six members are present.

[ARC 7942C, IAB 5/15/24, effective 6/19/24]

567—1.5(17A,455A) Conduct of meeting.

1.5(1) General. Meetings will be conducted in accordance with Robert’s Rules of Order unless otherwise provided in these rules. Voting will be by voice or by roll call. Voting will be by voice unless a voice vote is inconclusive, a member of the commission requests a roll call, or the vote is on a motion to close a portion of a meeting. The chairperson will announce the result of the vote.

1.5(2) Voice votes. All commission members present should respond when a voice vote is taken.

a. All members present will be recorded as voting aye on any motion when there are no nay votes or abstentions heard.

b. Any member who abstains will state at the time of the vote the reason for abstaining. The abstention and the reason for it will be recorded in the minutes.

1.5(3) Provision of information. The chairperson may recognize any agency staff member for the provision of information relative to an agenda item.

[ARC 7942C, IAB 5/15/24, effective 6/19/24]

567—1.6(17A,455A) Minutes, transcripts, and recordings of meetings.

1.6(1) Audio recordings. The director may record each meeting and shall record each closed session.

1.6(2) Minutes. The director will keep minutes of each meeting. Minutes will be reviewed and approved by the commission.

[ARC 7942C, IAB 5/15/24, effective 6/19/24]

567—1.7(17A,455A) Officers and duties.

1.7(1) Officers. The officers of the commission are the chairperson, the vice chairperson, and the secretary.

1.7(2) Duties. The chairperson will preside at meetings and will exercise the powers conferred upon the chairperson. The vice chairperson will perform the duties of the chairperson when the chairperson is absent or when directed by the chairperson. The secretary will make recommendations to the commission on approval or revision of the minutes and act as parliamentarian.

1.7(3) Elections. Officers will be elected annually during May.

1.7(4) Succession.

a. If the chairperson does not serve out the elected term, the vice chairperson will succeed the chairperson for the remainder of the term. A special election will be held to elect a new vice chairperson to serve the remainder of the term.

b. If the vice chairperson does not serve out the elected term, a special election will be held to elect a new vice chairperson to serve the remainder of the term.

c. If the secretary does not serve out the elected term, a special election will be held to elect a new secretary to serve the remainder of the term.

[ARC 7942C, IAB 5/15/24, effective 6/19/24]

567—1.8(17A,455A) Sales and leases of goods, real estate, and services.

1.8(1) *Sales and leases.* The general provisions for the sales and leases of goods, real estate, and services by commission members are governed by rule 351—6.11(68B).

1.8(2) *Consent by rule.* The commission concludes that sales or leases of goods, real estate, or services described in this paragraph do not, as a class, constitute the sale or lease of a good, real estate, or service that affects an official's functions. Application and department approval are not required for these sales or leases unless there are unique facts surrounding a particular sale or lease which would cause that sale or lease to affect the official's duties or functions, would give the buyer an advantage in its dealings with the department, or would otherwise present a conflict of interest.

Sales or leases for which consent is granted by rule are:

- a.* Nonrecurring sale or lease of goods and services if the official is not engaged for profit in the business of selling or leasing those goods or services.
- b.* Sale or lease of farm products at market prices to a buyer ordinarily engaged in the business of purchasing farm products or to the general public at a farmer's market, retail store, or roadside stand.
- c.* Sale or lease of goods to general public at an established retail or consignment shop.
- d.* Sale or lease of legal, mechanical, or other services at market or customary prices. However, if an official's client or customer has a matter for decision before the commission, the official shall not participate in the discussion and voting on that matter unless consent has been obtained.
- e.* Sale or lease of goods at wholesale prices to a buyer ordinarily engaged in the business of purchasing wholesale goods for retail sale.
- f.* Sale or lease of creative works of art, including but not limited to sculpture and literary products, at market, auction, or negotiated prices. However, if an official's customer has a matter for decision before the commission directly or indirectly involving that good, the official shall not participate in the discussion and voting on that matter unless consent has been obtained.
- g.* Sale or lease of goods to general public at market or franchiser-established prices. However, if an official's customer has a matter for decision before the commission, the official shall not participate in the discussion and voting on that matter unless consent has been obtained.
- h.* Sale or lease of real estate at a live auction or through an open or closed bidding process. However, if the buyer, seller, lessee, or lessor has a matter for decision before the commission within the next 12 months, the official shall not participate in the discussion and voting on that matter unless consent has been obtained.
- i.* The leasing of real estate; however, if the lessee or lessor has a matter for decision before the commission, the official shall not participate in the discussion and voting on that matter unless consent has been obtained.

[ARC 7942C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code sections 17A.3(1) "a" and 455A.6.

[Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]

[Filed emergency 11/27/85—published 12/18/85, effective 11/27/85]

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[Filed 7/30/93, Notice 5/12/93—published 8/18/93, effective 9/22/93]

[Filed emergency 6/13/08—published 7/2/08, effective 6/13/08]

[Editorial change: IAC Supplement 8/27/08]

[Filed 8/20/08, Notice 7/2/08—published 9/10/08, effective 10/15/08]

[Filed ARC 7942C (Notice ARC 7205C, IAB 12/27/23), IAB 5/15/24, effective 6/19/24]

CHAPTER 2
PUBLIC RECORDS AND FAIR INFORMATION PRACTICES

[Prior to 2/11/87, see Water, Air and Waste Management, 900—4.1 to 4.4]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—2.1(17A,22) Adoption by reference. The commission adopts by reference 561—Chapter 2, Iowa Administrative Code, with the addition of the following new subrule.

2.4(7) Definitions. For purposes of this chapter:

a. “Emission data” means the following, with reference to any source of emission of any substance into the air:

(1) Information necessary to determine the identity, amount, frequency, concentration, or other characteristics (to the extent related to air quality) of any emission which has been emitted by the source (or of any pollutant resulting from any emission by the source) or any combination of the foregoing;

(2) Information necessary to determine the identity, amount, frequency, concentration, or other characteristics (to the extent related to air quality) of the emissions which, under an applicable standard or limitation, the source was authorized to emit (including, to the extent necessary for such purposes, a description of the manner or rate of operation of the source); and

(3) A general description of the location and nature of the source to the extent necessary to identify the source and to distinguish it from other sources (including, to the extent necessary for such purposes, a description of the device, installation, or operation constituting the source).

b. “Effluent data” means the following, with reference to any source of discharge of any pollutant:

(1) Information necessary to determine the identity, amount, frequency, concentration, temperature, or other characteristics (to the extent related to water quality) of any pollutant which has been emitted by the source (or of any pollutant resulting from any discharge from the source) or any combination of the foregoing;

(2) Information necessary to determine the identity, amount, frequency, concentration, temperature, or other characteristics (to the extent related to water quality) of the pollutants which, under an applicable standard or limitation, the source was authorized to discharge (including, to the extent necessary for such purposes, a description of the manner or rate of operation of the source); and

(3) A general description of the location and nature of the source to the extent necessary to identify the source and to distinguish it from other sources (including, to the extent necessary for such purposes, a description of the device, installation, or operation constituting the source).

These rules are intended to implement Iowa Code sections 22.11, 455B.137 and 455B.179.

[Filed 1/23/87, Notice 11/19/86—published 2/11/87, effective 3/18/87]

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[Filed 1/30/03, Notice 11/13/02—published 2/19/03, effective 3/26/03]

CHAPTER 3
SUBMISSION OF INFORMATION AND COMPLAINTS—INVESTIGATIONS
[Prior to 2/11/87, see Water, Air and Waste Management, 900—4.5]
Rescinded **ARC 7943C**, IAB 5/15/24, effective 6/19/24

CHAPTER 4
AGENCY PROCEDURE FOR RULE MAKING

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—4.1(17A) Adoption by reference. The commission adopts by reference 561—Chapter 4, Iowa Administrative Code.

This rule is intended to implement Iowa Code chapter 17A as amended by 1998 Iowa Acts, chapter 1202.

[Filed 11/21/75, Notices 7/14/75, 8/25/75—published 12/15/75, effective 1/19/76]

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[Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]

[Filed 12/2/83, Notice 6/22/83—published 12/21/83, effective 1/25/84]

[Filed 5/26/88, Notice 3/9/88—published 6/15/88, effective 7/20/88]

[Filed 7/23/99, Notice 5/19/99—published 8/11/99, effective 9/15/99]

CHAPTER 5
PETITIONS FOR RULE MAKING

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—5.1(17A) Adoption by reference. The commission adopts by reference 561—Chapter 5, Iowa Administrative Code.

This rule is intended to implement Iowa Code chapter 17A as amended by 1998 Iowa Acts, chapter 1202.

[Filed 11/21/75, Notices 7/14/75, 8/25/75—published 12/15/75, effective 1/19/76]

[Filed 4/23/81, Notice 2/18/81—published 5/13/81, effective 6/17/81]

[Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]

[Filed 5/26/88, Notice 3/9/88—published 6/15/88, effective 7/20/88]

[Filed 7/23/99, Notice 5/19/99—published 8/11/99, effective 9/15/99]

CHAPTER 6
DECLARATORY ORDERS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—6.1(17A) Adoption by reference. The commission adopts by reference 561—Chapter 6, Iowa Administrative Code.

This rule is intended to implement Iowa Code chapter 17A as amended by 1998 Iowa Acts, chapter 1202.

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[Filed 5/29/87, Notice 2/11/87—published 6/17/87, effective 7/22/87]

[Filed 7/23/99, Notice 5/19/99—published 8/11/99, effective 9/15/99]

CHAPTER 7
RULES OF PRACTICE IN CONTESTED CASES

[Prior to 9/7/88, see Water, Air and Waste Management[900] Ch 7]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—7.1(17A) Adoption by reference. The commission adopts by reference 561—Chapter 7, Iowa Administrative Code.

This rule is intended to implement Iowa Code sections 17A.3 and 17A.12 to 17A.18.

[Filed 12/19/75, Notices 7/14/75, 8/25/75, 9/8/75, 10/6/75—published 1/12/76, effective 2/16/76]

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[Filed 4/23/81, Notice 2/18/81—published 5/13/81, effective 6/17/81]

[Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]

[Filed 12/2/83, Notice 6/22/83—published 12/21/83, effective 1/25/84]

[Filed 8/19/88, Notice 4/20/88—published 9/7/88, effective 10/12/88]

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[Filed 10/4/07, Notice 5/23/07—published 10/24/07, effective 11/28/07]

CHAPTER 8
CONTRACTS FOR PUBLIC IMPROVEMENTS AND PROFESSIONAL SERVICES

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—8.1(17A) Adoption by reference. The commission adopts by reference 561—Chapter 8, Iowa Administrative Code, as amended through June 19, 1991.

These rules are intended to implement Iowa Code sections 455A.6, 455B.105 and 573.12(3).

[Filed 9/26/88, Notice 8/10/88—published 10/19/88, effective 11/23/88]

[Filed 4/26/91, Notice 2/20/91—published 5/15/91, effective 6/19/91]

CHAPTER 9
DELEGATION OF CONSTRUCTION PERMITTING AUTHORITY

[Prior subject matter DEQ Ch 24]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded **ARC 7944C**, IAB 5/15/24, effective 6/19/24

CHAPTER 10
COMPLAINTS, AUDITS, ENFORCEMENT OPTIONS
AND ADMINISTRATIVE PENALTIES
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

DIVISION I
COMPLAINTS AND INVESTIGATIONS

567—10.1(455B) Complaints and investigations. The process to submit a complaint and to investigate a complaint is as follows:

10.1(1) *Submission requirements and investigations.* Complaints concerning alleged violations of departmental statutes or rules should be submitted to the appropriate department office, and the nature of the complaint must be summarized in a concise manner. Complaints will be investigated by the department if it appears that an investigation is needed to ensure compliance with applicable departmental statutes or rules.

10.1(2) *Known source of complaints.* In the case of a known complainant, the appropriate department office shall notify the complainant of the investigation results or of its decision not to investigate the complaint.

10.1(3) *Anonymous complaints.* Complaints may be submitted by anonymous sources and will be handled as discretionary investigations. In these cases, the department will not be able to notify the complainants of the results of the investigations.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

This rule is intended to implement Iowa Code sections 455B.105(3) and 17A.3(1).

567—10.2 to 10.9 Reserved.

DIVISION II
ENVIRONMENTAL AUDITS

567—10.10(455K) Environmental audits. This part sets forth rules governing voluntary disclosure of environmental noncompliance discovered as a result of an environmental self-audit conducted by or on behalf of a facility owner or operator under the provisions of Iowa Code chapter 455K.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

567—10.11(455K) Notice of audit.

10.11(1) If a notice of audit is provided to the department, it must be submitted in writing and include the following information:

- a.* The name and location (address and city) of the facility to be audited;
- b.* The description of the facility or portion of the facility, activity, operation or management system to be audited, including applicable department permits or registration numbers;
- c.* The anticipated audit initiation date (day, month, and year);
- d.* The general scope of audit, with sufficient detail to determine if discovered violations would be included. If the scope of the audit changes before it is completed, an amended notice shall be submitted promptly;
- e.* The names of the persons conducting the audit; and
- f.* The anticipated audit completion date, not to exceed six calendar months.

10.11(2) The department will provide written acknowledgment of receipt for notices of audit, which will include an assigned identification number.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

567—10.12(455K) Request for extension. If notice of audit is given to the department, the audit must be completed within a reasonable time, not to exceed six calendar months from the date the notice of audit is received by the department unless a written request for extension has been filed with and granted by the department.

10.12(1) A request for extension must be filed in writing with the department at least 30 calendar days prior to expiration of the initial six-month period and provide sufficient information for the department to determine whether reasonable grounds exist to grant an extension.

10.12(2) The department will provide written determination either granting or denying a request for extension within 15 calendar days of receipt.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

567—10.13(455K) Disclosure of violation. An owner or operator wishing to take advantage of the immunity provisions of Iowa Code chapter 455K must make a prompt voluntary disclosure to the department regarding an environmental violation which is discovered through an environmental audit.

10.13(1) A disclosure of violation must be sent to the department in writing and include the following information:

- a. Reference to the date of the relevant notice of audit and assigned identification number;
- b. Time of initiation and completion of the audit, if applicable;
- c. The names of the person or persons conducting the audit;
- d. Affirmative assertion that a violation has been discovered;
- e. Description of the violation and reason for believing a violation exists;
- f. Date of discovery of the violation and interim measures, if applicable, to abate the violation;
- g. Duration of the violation if it can be determined; and
- h. The status and schedule of proposed final corrective measures, if applicable.

10.13(2) The department will provide written acknowledgement of receipt of a disclosure of violation, which will include either concurrence or rejection of the proposed final corrective measures and schedule.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

567—10.14(455K) Public information. A notice of audit, request for extension, and disclosure of violation documents are considered public information. Copies of the environmental audit report should not be submitted to the department.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code chapter 455K.

567—10.15 to 10.19 Reserved.

DIVISION III ENFORCEMENT OPTIONS

567—10.20(455B) Enforcement options. In addition to administrative and civil actions for monetary penalty, the following enforcement options are available to the department to obtain information and seek compliance.

10.20(1) *Informal meeting.* Department staff may attempt to resolve a potential violation or obtain additional information with an informal meeting. The discussion will usually focus on corrective actions to be taken, and in most instances, only department staff and the facility representative will be present.

10.20(2) *Letter of inquiry (LOI).* The purpose of an LOI is to allow the regulated entity the opportunity to provide information that would be helpful for a determination of whether a violation has occurred.

10.20(3) *Letter of noncompliance (LNC).* An LNC may be used when no environmental harm or threat to human health or safety has occurred or is imminent, the regulated entity is not a repeat offender, the corrective action is not deemed an emergency, or the violation is considered insignificant. The letter is intended to provide the regulated entity with an opportunity to correct the identified deficiencies prior to

further enforcement activity. In an LNC, the department may suggest remedial measures, set a date for returning to compliance, or request a response from the regulated entity within a specific time period as to how the identified problems will be resolved.

10.20(4) Notice of violation (NOV). When the other compliance and enforcement activities described in this division are not appropriate for a violation, or when the regulated entity has not returned to compliance, the department may issue an NOV. An NOV may be used when environmental harm or a threat to human health or safety has occurred or is imminent, a regulated entity is a repeat offender, a corrective action is deemed an emergency, or a violation is considered significant. An NOV identifies the nature of the violation and any required corrective action.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

567—10.21(455B) Options to respond. Upon receiving an LOI, LNC, or NOV, a regulated entity has the option to respond to the department, even if a response is not specifically requested. In responding to an LNC or NOV, the regulated entity should clearly outline any disagreements with the LNC or NOV, provide any pertinent additional information, describe any current or planned corrective action, and provide a schedule for returning to compliance. The department will review written information submitted in response to the compliance and enforcement procedures described in this part and will include this information in the file of record. Nothing in this chapter adds to or takes away from the appeal rights provided in Iowa Code chapter 17A.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

567—10.22(455B) Department discretion. At the department's sole discretion, the department may follow the compliance and enforcement procedures described in this part, commence with an LNC or NOV, or forego these options and commence with an administrative action, or the department may request referral to the attorney general.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code sections 455B.105(3) and 17A.3(1).

567—10.23 to 10.29 Reserved.

DIVISION IV ADMINISTRATIVE PENALTIES

567—10.30(455B) Criteria for screening and assessing administrative penalties. All formal enforcement actions are processed through the environmental protection division administrator of the department. The administrator shall screen each case to determine the most equitable and efficient means of redressing and abating a violation. In screening a violation to determine which cases may be appropriate for administrative assessment of penalties or for purposes of assessing administrative penalties, the department will consider among other relevant factors the following:

10.30(1) Economic benefit. Costs saved or likely to be saved by a violator's noncompliance. Where a violator realizes an economic benefit through the violation or by not taking timely compliance or corrective measures, the department shall take enforcement action which includes penalties to offset the economic benefit. Reasonable estimates of economic benefit should be made where clear data are not available.

10.30(2) Gravity of the violation. Factors include but are not limited to:

- a. The actual or threatened harm to the environment or public health and safety.
- b. Involvement of toxic or hazardous substances or potential long-term effects of the violation.
- c. The degree to which ambient or source-specific standards are exceeded, where pertinent.
- d. Federal program priorities, size of facility, or other pertinent factors.
- e. Whether the violation is repeated or whether it violates an administrative or court order.
- f. Whether the type of violation threatens the integrity of a regulatory program.
- g. Expenses or efforts by the government in detecting, documenting, or responding to a violation.

10.30(3) Culpability. Factors include but are not limited to:

a. The degree of intent or negligence. The standard of care required by the laws of the state of Iowa will be considered.

b. Whether the case involves false reporting of required information, or tampering with monitoring devices.

c. Whether the violator has taken remedial measures or mitigated the harm caused by the violation.

10.30(4) *Deterrent.* Whether the assessment of administrative penalties appears to be the only or most appropriate way to deter future violations, either by the person involved or by others similarly situated.

10.30(5) *Other relevant factors.* The department will consider other relevant factors which arise from the circumstances of each case.

10.30(6) *Department discretion.* This screening procedure shall not limit the discretion of the department to refer any case to the attorney general for legal action, nor does this procedure require the commission or the director to pursue an administrative remedy before seeking a remedy in the courts of this state.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

567—10.31(455B) Assessment of administrative penalties. Except for operator discipline, administrative penalties shall be assessed through issuance of an administrative order or an administrative consent order of the director which recites the facts and the legal requirements which have been violated, and a general rationale for the prescribed penalty.

10.31(1) *Administrative order or administrative consent order.* An administrative order or administrative consent order may include cumulative penalties up to \$10,000 for multiple violations and may be combined with any other order authorized by statute for mandatory or prohibitory injunctive conditions. The administrative order is subject to contested case and appellate review. Operator discipline is governed by 567—Chapter 81.

10.31(2) *Determination of amount.* The amount of penalty for each day of violation shall be determined from evaluation of the factors outlined in rule 567—10.30(455B). The actual or reasonably estimated economic benefit shall always be assessed.

[ARC 7943C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code section 455B.109.

[Filed 7/12/85, Notice 5/8/85—published 7/31/85, effective 9/4/85]

[Filed emergency 11/14/86—published 12/3/86, effective 12/3/86]

[Filed 8/28/92, Notice 7/8/92—published 9/16/92, effective 10/21/92]

[Filed ARC 7943C (Notice ARC 7206C, IAB 12/27/23), IAB 5/15/24, effective 6/19/24]

CHAPTER 11
TAX CERTIFICATION OF POLLUTION CONTROL OR RECYCLING PROPERTY

[Prior Rules on the subject, DEQ Chs 12 and 23]
[Prior to 12/3/86, Water, Air and Waste Management[900]]
[Prior to 10/19/88, Environmental Protection Commission 567—Ch 8]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—11.1(427) Form. All requests for the department to certify air or water pollution control recycling property pursuant to Iowa Code section 427.1(19) shall be submitted on a form prescribed by the department. Through these forms, the department may request any information necessary to make a determination under 567—11.5(427).

[ARC 7945C, IAB 5/15/24, effective 6/19/24]

567—11.2(427) Time of submission. A request may be submitted at any time. Taxpayers are reminded that failure to dispatch a request sufficiently in advance of the February 1 deadline for filing with the assessing authority may cause the applicant to fail to qualify for the first possible annual exemption.

[ARC 7945C, IAB 5/15/24, effective 6/19/24]

567—11.3(427) Notice. The department shall notify the taxpayer of the decision within ten days of receipt of a complete request. The notice shall include either the certificate if the decision is to certify the property as requested, or a concise statement of reasons for denial if the decision is to deny the request or to certify a lesser portion of the property than requested. The determination of the department to deny or grant only a portion of the request may be appealed to the commission pursuant to 567—Chapter 7.

[ARC 7945C, IAB 5/15/24, effective 6/19/24]

567—11.4(427) Issuance. Upon the decision of the department or the commission on appeal to certify all or any portion of the property for which a request has been made, two copies of the certificate will be signed by the director or the director's designee and mailed to the taxpayer. The certificate shall describe the property certified and state the date on which the department certified the property.

[ARC 7945C, IAB 5/15/24, effective 6/19/24]

567—11.5(427) Criteria for determining eligibility.

11.5(1) General. Property that has been installed and is used primarily to meet an effluent standard, a water quality standard, or an emission standard or to control hydrocarbons, fugitive dust, odors or other air contaminants in a reasonably adequate manner shall be considered to be used primarily to control or abate pollution of the water or air of the state. Property that has been installed to meet a standard more stringent than an emission or water quality standard shall be considered to be used primarily to enhance the quality of the water or air of the state. Personal property or improvements to real property as defined by Iowa Code section 427A.1 or any portion of the property used primarily in the manufacturing process and resulting directly in the conversion of waste plastic, wastepaper products, waste paperboard, waste glass, or waste wood into new raw materials or products composed primarily of recycled material shall be considered recycling property. Each request will be considered in the context of its particular circumstances.

In the event that such property also serves other purposes or uses of productive benefit to the owner of the property, only such portion of the assessed valuation thereof as may reasonably be calculated to be necessary for and devoted to the control or abatement of pollution, to the enhancement of the quality of the air or water of this state, or for recycling shall be exempt from taxation.

11.5(2) Denial. Property may be denied certification if it is not being operated in compliance with the rules of the department so as to effectively control or abate pollution or enhance the quality of the air or water of the state, or recycle property into new raw materials or products composed primarily of recycled material. Property that was constructed or installed without permits required from the department will be denied certification unless and until such time as the property has received after-the-fact approval from the department.

[ARC 7945C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code section 427.1(19).

[Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]
[Filed emergency 11/14/86—published 12/3/86, effective 12/3/86]
[Filed 9/26/88, Notice 8/10/88—published 10/19/88, effective 11/23/88]
[Filed without Notice 10/22/93—published 11/10/93, effective 12/16/93]
[Filed 5/20/04, Notice 3/17/04—published 6/9/04, effective 7/14/04]
[Filed 12/12/06, Notice 10/11/06—published 1/3/07, effective 2/7/07]
[Filed ARC 7945C (Notice ARC 7222C, IAB 12/27/23), IAB 5/15/24, effective 6/19/24]

CHAPTER 12
ENVIRONMENTAL SELF-AUDITS
Rescinded **ARC 7943C**, IAB 5/15/24, effective 6/19/24

CHAPTER 13
WAIVERS OR VARIANCES FROM ADMINISTRATIVE RULES

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—13.1(17A) Adoption by reference. The commission adopts by reference 561—Chapter 10, Iowa Administrative Code, provided that the word “commission” is substituted for “department” throughout.

567—13.2(17A) Report to commission. The director shall submit reports of decisions regarding requests for waivers or variances to the commission at its regular meetings.

These rules are intended to implement Iowa Code chapter 17A.9A and
Executive Order Number 11

[Filed 9/27/01, Notice 3/21/01—published 10/17/01, effective 11/21/01]

CHAPTER 14
ENVIRONMENTAL COVENANTS
Rescinded **ARC 7946C**, IAB 5/15/24, effective 6/19/24

CHAPTER 15
CROSS-MEDIA ELECTRONIC REPORTING

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—15.1(455B,554D) Purpose. This rule implements 40 CFR Part 3, the federal cross-media electronic reporting rule (CROMERR), as amended through November 17, 2009.

15.1(1) Applicability. The provisions of 40 CFR Sections 3.1 and 3.2 are adopted by reference.

15.1(2) Definitions.

a. For the purpose of this chapter, the following definitions in 40 CFR Section 3.3 are adopted by reference: “Authorized program,” “Copy of record,” “Electronic document,” “Electronic document receiving system,” “Electronic signature,” “Electronic signature agreement,” “Electronic signature device,” “Federal program,” “Handwritten signature,” and “Valid electronic signature.”

b. The following definition applies to this chapter:

“*Authorized signatory*” means an individual authorized to sign documents under one or more authorized programs, in accordance with the specific requirements of each authorized program, and who signs a document submitted to one of the department’s electronic document receiving systems pursuant to an electronic signature agreement.

15.1(3) Use of electronic document receiving systems.

a. Website announcement. When the director has announced on the department’s website that electronic documents are being accepted in lieu of paper to satisfy requirements under one or more authorized programs, individuals who submit such electronic documents must use the CROMERR-compliant electronic document receiving system or systems as specified by the department.

b. Submittals requiring signature. Any electronic document submitted to the department must bear a valid electronic signature of an authorized signatory, if that signatory would be required under an authorized program to sign the paper document for which the electronic document substitutes.

c. Submittals not requiring signature. If no signature is required under an authorized program, individuals may submit electronic documents in lieu of paper to satisfy requirements of such programs through one or more of the department’s CROMERR-compliant electronic document receiving systems without an electronic signature or an electronic signature agreement.

15.1(4) Electronic signature agreement (ESA).

a. Agreement to be executed. In order to sign and submit electronic documents in one of the departments’ CROMERR-compliant electronic document receiving systems, a signatory must execute an ESA specific to that electronic document receiving system.

b. Form and content of agreement. All ESAs shall include the information and follow the format defined by the department in the specific CROMERR-compliant electronic document receiving system.

c. Verification. The identity and signature authority of each individual submitting an ESA shall be verified by the state of Iowa or by a third-party signature verification service. After verification, the department shall notify an individual electronically that electronic documents may be signed and submitted in a specific CROMERR-compliant electronic document receiving system.

d. Certification. Each document submission authorized by an electronic signature shall contain the following statement: “I certify under penalty of law that I have had the opportunity to review, in human-readable format, the content of the electronic document to which I here certify and attest, and I further certify under penalty of law that, based on the information and belief formed after reasonable inquiry, the statements and information contained in this submission are true, accurate, and complete. I understand that making any false statement, representation, or certification of this submission may result in criminal penalties.”

15.1(5) Valid electronic signature.

a. Signatory. An authorized signatory may not allow another individual to use the electronic signature device unique to the authorized signatory’s electronic signature.

b. Unique signature device. When the electronic signature device is used to create an individual's electronic signature, the code or mechanism must be unique to that individual at the time the signature is created and the individual must be uniquely entitled to use it. The signatory shall:

- (1) Protect the electronic signature device from compromise; and
- (2) Report to the department, within one business day of discovery, any evidence that the security of the device or the signatory's electronic signature has been compromised.

15.1(6) *Effect of electronic signature and enforcement.* The provisions of 40 CFR Section 3.4 are adopted by reference.

[ARC 7947C, IAB 5/15/24, effective 6/19/24]

This chapter is intended to implement Iowa Code section 455B.105 and chapter 554D.

[Filed ARC 8678B (Notice ARC 8467B, IAB 1/13/10), IAB 4/7/10, effective 5/12/10]

[Filed ARC 7947C (Notice ARC 7225C, IAB 12/27/23), IAB 5/15/24, effective 6/19/24]

CHAPTER 16
REVOCATION, SUSPENSION, AND NONRENEWAL OF LICENSE
FOR FAILURE TO PAY STATE LIABILITIES
Rescinded **ARC 7948C**, IAB 5/15/24, effective 6/19/24

CHAPTER 17
COMPLIANCE AND ENFORCEMENT PROCEDURES
Rescinded **ARC 7943C**, IAB 5/15/24, effective 6/19/24

CHAPTERS 18 and 19
Reserved

TITLE II
AIR QUALITY

CHAPTER 20
SCOPE OF TITLE—DEFINITIONS
[Prior to 12/3/86, Water, Air and Waste Management[900]]
Rescinded **ARC 7949C**, IAB 5/15/24, effective 6/19/24

CHAPTER 21

COMPLIANCE, EXCESS EMISSIONS, AND MEASUREMENT OF EMISSIONS

[Prior to 7/1/83, DEQ Chs 2 and 6]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—21.1(455B) Definitions and compliance requirements. For the purpose of these rules and the rules in 567—Chapters 20 through 35, the following terms shall, unless otherwise noted, have the meaning indicated in this chapter. Additional definitions potentially applicable to this chapter are set forth in 567—Chapters 22 and 23. The definitions set out in Iowa Code sections 455B.101, 455B.131, and 455B.411 are incorporated verbatim into these rules.

“Air pollution alert” means the action condition declared when the concentrations of air contaminants reach the level at which the first-stage control actions are to begin.

“Air pollution emergency” means the action condition declared when the air quality is continuing to degrade to a level that should never be reached, and that the most stringent control actions are necessary.

“Air pollution episode” means a combination of forecast or actual meteorological conditions and emissions of air contaminants that may or do present an imminent and substantial endangerment to the health of persons, during which the chief meteorological factors are the absence of winds that disperse air contaminants horizontally and a stable atmospheric layer that tends to inhibit vertical mixing through relatively deep layers.

“Air pollution forecast” means an air stagnation advisory issued to the department, the commission, and appropriate air pollution control agencies by an authorized Air Stagnation Advisory Office of the National Weather Service predicting that meteorological conditions conducive to an air pollution episode may be imminent. This advisory may be followed by a prediction of the duration and termination of such meteorological conditions.

“Air pollution warning” means the action condition declared when the air quality is continuing to degrade from the levels classified as an air pollution alert, and where control actions in addition to those conducted under an air pollution alert are necessary.

“Equipment” means equipment capable of emitting air contaminants to produce air pollution.

“Excess emission” means any emission that exceeds any applicable emission standard prescribed in 567—Chapter 23 or 567—22.4(455B), 567—22.5(455B), 567—31.3(455B), or 567—33.3(455B) or any emission limit specified in a permit or order.

“Existing equipment” means equipment, machines, devices, or installations that were in operation prior to September 23, 1970.

“Malfunction” means any sudden and unavoidable failure of control equipment or of a process to operate in a normal manner. Any failure that is caused entirely or in part by poor maintenance, careless operation, lack of an adequate maintenance program, or any other preventable upset condition or preventable equipment breakdown shall not be considered a malfunction.

“New equipment” means, except for any equipment or modified equipment to which 567—subrule 23.1(2) applies, any equipment or control equipment not under construction or for which components have not been purchased on or before September 23, 1970, and any equipment that is altered or modified after such date, which may cause, eliminate, reduce, or control the emission of air contaminants.

“Opacity” means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

“Shutdown” means the cessation of operation of any control equipment or process equipment or process for any purpose.

“Startup” means the setting into operation of any control equipment or process equipment or process for any purpose.

21.1(1) New equipment. All new equipment and all new control equipment, as defined herein, installed in this state shall perform in conformance with applicable emission standards specified in 567—Chapter 23.

21.1(2) Existing equipment. All existing equipment, as defined herein, shall be operated in conformance with applicable emission standards specified in 567—Chapter 23 or as otherwise specified herein, except that the performance standards specified in 567—subrule 23.1(2) shall not apply to existing equipment.

21.1(3) Emissions inventory. The person responsible for equipment as defined herein shall provide information on fuel use, materials processed, air contaminants emitted (including greenhouse gases as “greenhouse gas” is defined in 567—22.1(455B)), estimated rate of emissions, periods of emissions, or other air pollution information to the director upon the director’s written request for use in compiling and maintaining an emissions inventory for evaluation of the air pollution situation in the state and its various parts. The information requested shall be submitted in the electronic format specified by the department, if electronic submittal is provided. All information in regard to both actual and allowable emissions shall be public records, and any publication of such data shall be limited to actual and allowable air contaminant emissions.

21.1(4) Reserved.

21.1(5) Public availability of data. Emission data obtained from owners or operators of stationary sources under the provisions of 21.1(3) and any correlations with applicable emission limitations or other control measures will be made available to the public on the department’s website and upon request.

21.1(6) Maintenance of record. Each owner or operator of any stationary source, as defined herein, shall, upon notification from the director, maintain records of the nature and amounts of air contaminant emissions from such source and any other information as may be deemed necessary by the commission to determine whether such source is in compliance with the applicable emission limitations or other control measures. The information recorded shall be summarized and reported monthly to the director on forms furnished by the department. The initial reporting period shall commence 60 days from the date the director issues notification of the recordkeeping requirements. Records shall be retained by the owner or operator for two years after the date on which the pertinent report is submitted.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.2(455B) Variances.

21.2(1) Application for variances. A person may make an application for a variance from applicable rules or standards specified in this title.

a. Contents. Each application for a variance shall be submitted to the director and state the following:

(1) The name, address, email address, and telephone number of the person submitting the application or, if such person is a legal entity, the name and address of the individual authorized to accept service of process on its behalf and the name of the person in charge of the premises where the pertinent activities are conducted.

(2) The type of business or activity involved.

(3) The nature of the operation or process involved, including information on the air contaminants emitted and the estimated amount and rate of discharge of such emissions.

(4) The exact location of the operation or process involved.

(5) The reason or reasons for considering that compliance with the provisions specified in these rules will produce serious hardship without equal or greater benefits to the public, and the reasons why no other reasonable method can be used for such operations without resulting in a hazard to health or property.

(6) Each application shall contain certification of truth and accuracy by a responsible official as defined in 567—24.100(455B). This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information provided are true and accurate.

b. Variance extension. A person may make an application for a variance extension prior to expiration of an approved variance.

21.2(2) Processing of applications. Each application for a variance and its supporting material shall be reviewed, and an investigation of the facilities shall be made, by the department for evaluation of the following:

a. Whether or not the emissions involved will produce the following effects:

(1) Endanger or tend to endanger the health of persons residing in or otherwise occupying the area affected by said emissions.

(2) Create or tend to create safety hazards, such as (but not limited to) interference with traffic due to reduced visibility.

(3) Damage or tend to damage any property on land that is affected by said emissions and under other ownership.

b. The reason or reasons for considering that compliance with the provisions specified in these rules will produce serious hardship without equal or greater benefits to the public, and the reasons why no other reasonable method can be used for such operations without resulting in a hazard to health or property.

21.2(3) Trial burns for alternative fuels. An alternative fuel shall be defined as a fuel for which the emissions from combusting the fuel are not known and shall exclude natural gas, coal, liquid propane, and all petroleum distillates.

a. *Variance from construction permit.* The director may grant a variance for the purpose of testing an alternative fuel and quantifying the emissions from the alternative fuel, except as prohibited under 21.2(4) “c.”

b. *Baseline testing.* In addition to submitting the information required in 21.2(1), the applicant may be required to submit baseline emission data for all applicable pollutants as a condition of approval.

c. *Source testing.* Emissions testing deemed necessary for any pollutant may be required as a condition of the variance and shall be conducted in accordance with 21.10(7) “a.”

21.2(4) Decision.

a. *Granting of variance.* The director shall grant a variance when the director concludes that the action is appropriate. The variance may be granted subject to conditions specified by the director. The director shall specify the time intervals as are considered appropriate for submission of reports on the progress attained.

b. *Denial of variance.* The director shall deny a variance when the director concludes that the action is appropriate. The applicant may request a review hearing before the commission if the application is denied.

c. *Ineligibility for variance.* The director shall not grant a variance from any of the following requirements:

(1) Case-by-case maximum achievable control technology (MACT), 567—paragraph 22.1(1) “b”;

(2) Prevention of significant deterioration (PSD), 567—Chapter 33, to the extent that variances may not be granted from the preconstruction review and permitting program specified under 567—Chapter 33 (formerly 567—22.4(455B)), or from any PSD requirement contained in a PSD permit issued under 567—Chapter 33, or from any PSD requirement contained in a PSD permit issued under 40 CFR Section 51.166 or 52.21;

(3) New source performance standards, 567—subrule 23.1(2);

(4) Emission standards for hazardous air pollutants, 567—subrule 23.1(3);

(5) Emission standards for hazardous air pollutants for source categories, 567—subrule 23.1(4); or

(6) Emission guidelines, 567—subrule 23.1(5).

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.3 Reserved.

567—21.4(455B) Circumvention of rules. No person shall build, erect, install, or use any article, machine, equipment, or other contrivance that conceals an emission that would otherwise constitute violation of these rules.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.5(455B) Evidence used in establishing that a violation has occurred or is occurring. Notwithstanding any other provisions of these rules, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any provisions herein.

21.5(1) Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at a source. The following testing, monitoring, or information-gathering methods are presumptively credible testing, monitoring, or information-gathering methods:

- a. A monitoring method approved for the source and incorporated in an operating permit pursuant to 567—Chapter 24;
- b. Compliance test methods specified in 567—21.10(455B);
- c. Testing or monitoring methods approved for the source in a construction permit issued pursuant to 567—Chapter 22;
- d. Any monitoring or testing methods provided in these rules; or
- e. Other testing, monitoring, or information-gathering methods that produce information comparable to that produced by any method in this subrule.

21.5(2) Reserved.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.6(455B) Temporary electricity generation for disaster situations. An electric utility may operate generators at an electric utility substation with a total combined capacity not to exceed two megawatts in capacity for a period of not longer than ten calendar days and only for the purpose of providing electricity generation in the event of a sudden and unforeseen disaster that has disabled standard transmission of electricity to the public. Department approval shall be required if the electric utility intends to operate generators for a period longer than ten calendar days. The electric utility shall provide an oral report to the appropriate department field office and to the department's air quality bureau and shall specify the anticipated duration within eight hours of commencing use of a generator or at the start of the first working day following the placement of a generator at each site. A written report shall be submitted to the department within 30 calendar days following the cessation of use of the generators. The written report shall state the nature of the sudden and unforeseen disaster, the location of each site, the number of generators used, the capacity of the generators used, the fuel type of the generators, and the duration of use of each generator. For purposes of this rule, the definition of "disaster" shall be as defined in Iowa Code section 29C.2(4), and a disaster may occur before, with, or without a gubernatorial or federal disaster proclamation.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.7(455B) Excess emission reporting.

21.7(1) *Excess emission during periods of startup, shutdown, or cleaning of control equipment.* Excess emission during a period of startup, shutdown, or cleaning of control equipment is not a violation of the emission standard if the startup, shutdown, or cleaning is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions. Cleaning of control equipment that does not require the shutdown of the process equipment shall be limited to one six-minute period per one-hour period.

21.7(2) *Initial report of excess emission.*

a. An incident of excess emission (other than an incident of excess emission during a period of startup, shutdown, or cleaning) shall be reported to the appropriate regional office of the department within eight hours of the onset of the incident or at the start of the first working day following the onset of the incident. The reporting exemption for an incident of excess emission during startup, shutdown, or cleaning does not relieve the owner or operator of a source with continuous monitoring equipment of the obligation of submitting reports required in 21.10(6).

b. An initial report of excess emission is not required for a source with operational continuous monitoring equipment (as specified in 21.10(1)) if the incident of excess emission continues for less than 30 minutes and does not exceed the applicable emission standard by more than 10 percent or the applicable visible emission standard by more than 10 percent opacity.

c. The initial report shall be made by electronic mail (email), in person, or by telephone and shall include at a minimum the following:

- (1) The identity of the equipment or source operation from which the excess emission originated and the associated stack or emission point.
- (2) The estimated quantity of the excess emission.
- (3) The time and expected duration of the excess emission.
- (4) The cause of the excess emission.

- (5) The steps being taken to remedy the excess emission.
- (6) The steps being taken to limit the excess emission in the interim period.

21.7(3) *Written report of excess emission.* A written report of an incident of excess emission shall be submitted as a follow-up to all required initial reports to the department within seven days of the onset of the upset condition, and shall include as a minimum the following:

- a. The identity of the equipment or source operation point from which the excess emission originated and the associated stack or emission point.
- b. The estimated quantity of the excess emission.
- c. The time and duration of the excess emission.
- d. The cause of the excess emission.
- e. The steps that were taken to remedy and to prevent the recurrence of the incident of excess emission.
- f. The steps that were taken to limit the excess emission.
- g. If the owner claims that the excess emission was due to malfunction, documentation to support this claim.

21.7(4) *Excess emissions.* An incident of excess emission (other than an incident during startup, shutdown, or cleaning of control equipment) is a violation. If the owner or operator of a source maintains that the incident of excess emission was due to a malfunction, the owner or operator must show that the conditions that caused the incident of excess emission were not preventable by reasonable maintenance and control measures. Determination of any subsequent enforcement action will be made following review of this report. If excess emissions are occurring, either the control equipment causing the excess emission shall be repaired in an expeditious manner or the process generating the emissions shall be shut down within a reasonable period of time. An expeditious manner is the time necessary to determine the cause of the excess emissions and to correct it within a reasonable period of time. A reasonable period of time is eight hours plus the period of time required to shut down the process without damaging the process equipment or control equipment. In the case of an electric utility, a reasonable period of time is eight hours plus the period of time until comparable generating capacity is available to meet consumer demand with the affected unit out of service, unless the director shall, upon investigation, reasonably determine that continued operation constitutes an unjustifiable environmental hazard, issue an order that such operation is not in the public interest, and require a process shutdown to commence immediately.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.8(455B) Maintenance and repair requirements.

21.8(1) *Maintenance and repair.* The owner or operator of any equipment or control equipment shall:

- a. Maintain and operate the equipment or control equipment at all times in a manner consistent with good practice for minimizing emissions.
- b. Remedy any cause of excess emissions in an expeditious manner.
- c. Minimize the amount and duration of any excess emission to the maximum extent possible during periods of such emissions. These measures may include but not be limited to the use of clean fuels, production cutbacks, or the use of alternate process units or, in the case of utilities, purchase of electrical power until repairs are completed.
- d. Implement measures contained in any contingency plan prepared in accordance with 21.8(2)“c.”
- e. Schedule, at a minimum, routine maintenance of equipment or control equipment during periods of process shutdown to the maximum extent possible.

21.8(2) *Maintenance plans.* A maintenance plan will be required for equipment or control equipment where in the judgment of the director a continued pattern of excess emissions indicative of inadequate operation and maintenance is occurring. The maintenance plan shall include but not be limited to the following:

- a. A complete preventive maintenance schedule, including identification of the persons responsible for inspecting, maintaining, and repairing control equipment, a description of the items or conditions that will be inspected, the frequency of these inspections or repairs, and an identification of the replacement parts that will be maintained in inventory for quick replacement.

b. An identification of the equipment and air pollution control equipment operating variables that will be monitored in order to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring and surveillance procedures.

c. A contingency plan for minimizing the amount and duration of any excess emissions to the maximum extent possible during periods of such emissions.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.9(455B) Compliance with other requirements. The excess emissions provisions in 567—21.7(455B) and 567—21.8(455B) do not relieve the owner or operator of an emissions source subject to the new source performance standards (567—subrule 23.1(2)), the national emissions standards for hazardous air pollutants (567—subrule 23.1(3)), or the national emissions standards for hazardous air pollutants for source categories (567—subrule 23.1(4)) from complying with those requirements.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.10(455B) Testing and sampling of new and existing equipment.

21.10(1) Continuous monitoring of opacity from coal-fired steam generating units. The owner or operator of any coal-fired or coal-gas-fired steam generating unit with a rated capacity of greater than 250 million Btu per hour heat input shall install, calibrate, maintain, and operate continuous monitoring equipment to monitor opacity. If an exhaust services more than one steam generating unit as defined in the preceding sentence, the owner has the option of installing opacity monitoring equipment on each unit or on the common stack. Such monitoring equipment shall conform to performance specifications specified in 21.10(9). The director may require the owner or operator of any coal-fired or coal-gas-fired steam generating unit to install, calibrate, maintain, and operate continuous monitoring equipment to monitor opacity whenever the compliance status, history of operations, ambient air quality in the vicinity surrounding the generator, or the type of control equipment utilized would warrant such monitoring.

21.10(2) and 21.10(3) Reserved.

21.10(4) Continuous monitoring of sulfur dioxide from sulfuric acid plants. The owner or operator of any sulfuric acid plant of greater than 300 tons per day production capacity, the production being expressed as 100 percent acid, shall install, calibrate, maintain, and operate continuous monitoring equipment to monitor sulfur dioxide emissions. The monitoring equipment shall conform to the minimum performance specifications specified in 21.10(9).

21.10(5) Maintenance of records of continuous monitors. The owner or operator of any facility that is required to install, calibrate, maintain, and operate continuous monitoring equipment shall maintain, for a minimum of two years, a file of all information pertinent to each monitoring system present at the facility. Such information must include but is not limited to all emissions data (raw data, adjusted data, and any or all adjusted factors used to convert emissions from units of measurement to units of the applicable standard), performance evaluations, calibrations and zero checks, and records of all malfunctions of monitoring equipment or source and repair procedures performed.

21.10(6) Reporting of continuous monitoring information. The owner or operator of any facility required to install a continuous monitoring system or systems shall provide quarterly reports to the director, no later than 30 calendar days following the end of the calendar quarter, on forms provided by the director. This provision shall not excuse compliance with more stringent applicable reporting requirements. All periods of recorded emissions in excess of the applicable standards, the results of all calibrations and zero checks and performance evaluations occurring during the reporting period, the number of hours that the source was operated while the monitoring equipment was not in operation, and any periods of monitoring equipment malfunctions or source upsets and any apparent reasons for these malfunctions and upsets shall be included in the report.

21.10(7) Tests by owner. The owner of new or existing equipment or the owner's authorized agent shall conduct emission tests to determine compliance with applicable rules in accordance with these requirements.

a. *General.* The owner of new or existing equipment or the owner's authorized agent shall notify the department in writing not less than 30 days before a required test or before a performance evaluation of a continuous emission monitor to determine compliance with applicable requirements of 567—Chapter 23 or

a permit condition. Such notice shall include the time, the date, the place, the name of the person who will conduct the tests, and other information as required by the department. If the owner or operator does not provide timely notice to the department, the department may not consider the test results or performance evaluation results to be a valid demonstration of compliance with applicable rules or permit conditions. Upon written request, the department may allow a notification period of less than 30 days. At the department's request, a pretest meeting shall be held not later than 15 days before the owner or operator conducts the compliance demonstration. A testing protocol shall be submitted to the department for review no later than 15 days before the owner or operator conducts the compliance demonstration. A representative of the department shall be permitted to witness the tests. Results of the tests shall be submitted in writing to the director in the form of a comprehensive report within six weeks (42 days) of the completion of the testing.

b. New equipment. Unless otherwise specified by the department, all new equipment shall be tested by the owner or the owner's authorized agent to determine compliance with applicable emission limits. Tests conducted to demonstrate compliance with the requirements of the rules or a permit shall be conducted within 60 days of achieving maximum production but no later than 180 days of startup, unless a shorter time frame is specified in the permit.

c. Existing equipment. The director may require the owner or the owner's authorized agent to conduct an emission test on any equipment if the director has reason to believe that the equipment does not comply with applicable requirements. Grounds for requiring such a demonstration of compliance include a modification of control or process equipment, age of equipment, or observation of opacities or other parameters outside the range of those indicative of properly maintained and operated equipment. Testing may be required as necessary to determine actual emissions from a source where that source is believed to have a significant impact on the public health or ambient air quality of an area. The director shall provide the owner or agent not less than 30 days to perform the compliance demonstration and shall provide written notice of the requirement.

21.10(8) Tests by department. Representatives of the department may conduct separate and additional air contaminant emission tests and continuous monitor performance tests of an installation on behalf of the state and at the expense of the state. Sampling holes, safe scaffolding, and pertinent allied facilities, but not instruments or sensing devices, as needed, shall be requested in writing by the director and shall be provided by and at the expense of the owner of the installation at such points as specified in the request. The owner shall provide a suitable power source to the point or points of testing so that sampling instruments can be operated as required. Analytical results shall be furnished to the owner.

21.10(9) Methods and procedures. Stack sampling and associated analytical methods used to evaluate compliance with emission limitations of 567—Chapter 23 or a permit condition are as follows:

a. Performance test (stack test). A stack test shall be conducted according to the U.S. Environmental Protection Agency (EPA) reference methods as specified in 40 CFR 51, Appendix M (as amended or corrected through March 29, 2023); 40 CFR 60, Appendix A (as amended or corrected through March 29, 2023); 40 CFR 61, Appendix B (as amended or corrected through October 7, 2020); and 40 CFR 63, Appendix A (as amended or corrected through March 29, 2023). Each test shall consist of at least three separate one-hour test runs. Unless otherwise specified by the department, EPA method, or regulation, compliance shall be assessed on the basis of the arithmetic mean of the emissions measured in the three test runs. The owner of the equipment or the owner's authorized agent may use an alternative methodology if the methodology is approved by the department in writing before testing.

b. Continuous monitoring systems. Minimum performance specifications and quality assurance procedures for performance evaluations of continuous monitoring systems are as specified in 40 CFR 60, Appendix B (as amended or corrected through June 28, 2023); 40 CFR 60, Appendix F (as amended or corrected through March 29, 2023); 40 CFR 75, Appendix A (as amended or corrected through August 30, 2016); 40 CFR 75, Appendix B (as amended or corrected through August 30, 2016); and 40 CFR 75, Appendix F (as amended or corrected through August 30, 2016). The owner of the equipment or the owner's authorized agent may use an alternative methodology for continuous monitoring systems if the methodology is approved by the department in writing before the minimum performance specifications and quality assurance procedures are conducted.

c. Permit and compliance demonstration requirements. After October 24, 2012, all stack sampling and associated analytical methods used to evaluate compliance with emission limitations of 567—Chapter 23 or required in a permit issued by the department pursuant to 567—Chapter 22 or 33 shall be conducted using the methodology referenced in this rule. If stack sampling was required for a compliance demonstration pursuant to 567—Chapter 23 or for a performance test required in a permit issued by the department pursuant to 567—Chapter 22 or 33 before October 24, 2012, and the demonstration or test was not required to be completed before October 24, 2012, then the methodology referenced in this subrule applies retroactively.

21.10(10) Exemptions from continuous monitoring requirements.

a. The owner or operator of any source is exempt if it can be demonstrated that any of the conditions set forth in this subrule are met with the provision that periodic recertification of the existence of these conditions can be requested.

(1) An affected source is subject to a new source performance standard.

(2) Reserved.

(3) An affected steam generator that is retired from service.

b. The director may provide a temporary exemption from the monitoring and reporting requirements during any period of monitoring system malfunction, provided that the source owner or operator shows, to the satisfaction of the director, that the malfunction was unavoidable and is being repaired as expeditiously as practical.

21.10(11) Extensions. The owner or operator of any source may request an extension of time provided for installation of the required monitor by demonstrating to the director that good faith efforts have been made to obtain and install the monitor in the prescribed time.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.11(455B) Continuous emission monitoring under the acid rain program. The continuous emission monitoring requirements for affected units under the acid rain program as provided in 40 CFR Part 75, including Appendices A, B, F, and K, as amended through August 30, 2016, are adopted by reference.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.12(455B) Affected sources subject to Section 112(g). The owner or operator of an affected source subject to the requirements of the federal Clean Air Act, Section 112(g), shall comply with the requirements contained in permits issued by the department under 567—Chapters 22 and 33.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.13(455B) Methodology and qualified observer. The federal method for visual determination of opacity of emissions and requirements for qualified observers as defined in 40 CFR Part 60, Appendix A, Method 9, as amended through November 14, 1990, is adopted by reference.

To qualify as an observer, a candidate must, after meeting the requirements established in 40 CFR Part 60, Appendix A, Method 9, have on record with the department a minimum of 250 readings of black plumes and 250 readings of white plumes, taken at approved smoke reading courses.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.14(455B) Prevention of air pollution emergency episodes—general. The provisions for the purpose specified in 40 CFR Part 51, Appendix L, 1.0, are adopted by reference. For purposes of this chapter, adoption by reference of any portion of 40 CFR Part 51, Appendix L, is, unless otherwise noted, as amended through July 1, 1987.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.15(455B) Episode criteria.

21.15(1) Evaluation. Conditions justifying the proclamation of an air pollution alert, air pollution warning, or air pollution emergency shall be deemed to exist whenever the commission or the director determines that the meteorological conditions are such that the accumulation of air contaminants in any

place is reaching, or has reached, levels that could, if sustained or exceeded, lead to a substantial threat to the health of persons.

21.15(2) *Air pollution forecast.* Initial consideration of air pollution episode activities will be activated by receipt from the National Weather Service of an air pollution forecast. Receipt of such a forecast shall be the basis for activities such as, but not limited to, increased monitoring of the air contaminants in the area involved.

21.15(3) *Declaration.* In making determinations for the declaration of an air pollution episode condition, the commission or the director will be guided by the criteria stated in the following paragraphs:

a. Air pollution alert. The provisions for an air pollution alert as specified in 40 CFR Part 51, Appendix L, 1.1(b), are adopted by reference.

b. Air pollution warning. The provisions for an air pollution warning as specified in 40 CFR Part 51, Appendix L, 1.1(c), are adopted by reference.

c. Air pollution emergency. The provisions for air pollution emergency as specified in 40 CFR Part 51, Appendix L, 1.1(d), are adopted by reference.

d. Termination. Once declared, any status reached by application of these criteria will remain in effect until the criteria for that level are no longer met. As meteorological factors and air contaminants change, an appropriate change in episode level will be declared.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.16(455B) Preplanned abatement strategies. The provisions for planned strategies as specified in 40 CFR Part 51, Appendix L, 1.3(a), are adopted by reference.

21.16(1) *Plan preparation.*

a. Any person responsible for the operation of a source of air contaminants as set forth in Tables I through III shall prepare standby plans for reducing the emission of air contaminants, which will be implemented upon the declaration of an air pollution episode and continued for the duration of the declared episode.

b. The provisions for plan preparation as specified in 40 CFR Part 51, Appendix L, 1.3(b), are adopted by reference.

21.16(2) *Plan content.* The provisions for plan content as specified in 40 CFR Part 51, Appendix L, 1.3(c), are adopted by reference.

21.16(3) *Review of plans.* Standby plans as required by this subrule shall be submitted to the director on or before January 1, 1973. Each standby plan shall be subject to review. If, in the opinion of the director, a standby plan does not provide for adequate reduction of emissions, the director may disapprove the plan, state the reasons for disapproval, and order the preparation of an amended standby plan within a time period specified in the order. The action of the director in securing a modification of a standby plan may be appealed to the commission.

21.16(4) *Availability.* The provisions for availability as specified in 40 CFR Part 51, Appendix L, 1.3(d), are adopted by reference.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

567—21.17(455B) Actions taken during episodes.

21.17(1) *Emission reduction activities.* Any person responsible for the operation of a source of air contaminants as set forth in Tables I through III, herein, that is located within the area involved shall follow the actions specified below during periods of an air pollution alert, air pollution warning, or air pollution emergency as may be declared.

a. Air pollution alert. The provisions for an air pollution alert as specified in 40 CFR Part 51, Appendix L, 1.2(a), are adopted by reference.

b. Air pollution warning. The provisions for air pollution warning as specified in 40 CFR Part 51, Appendix L, 1.2(b), are adopted by reference.

c. Air pollution emergency. The provisions for air pollution emergency as specified in 40 CFR Part 51, Appendix L, 1.2(c), are adopted by reference.

d. Special conditions. The provisions for special conditions as specified in 40 CFR Part 51, Appendix L, 1.2(d), are adopted by reference.

21.17(2) Reserved.

[ARC 7950C, IAB 5/15/24, effective 6/19/24]

TABLE I
ABATEMENT STRATEGIES EMISSION REDUCTION ACTIONS ALERT LEVEL

GENERAL

The provisions for planned strategies as specified in 40 CFR Part 51, Appendix L, Table I, Part A, are adopted by reference.

SOURCE CURTAILMENT

The provisions for planned strategies as specified in 40 CFR Part 51, Appendix L, Table I, Part B, are adopted by reference.

TABLE II
ABATEMENT STRATEGIES EMISSION REDUCTION ACTIONS WARNING LEVEL

GENERAL

The provisions for planned strategies as specified in 40 CFR Part 51, Appendix L, Table II, Part A, are adopted by reference.

SOURCE CURTAILMENT

The provisions for planned strategies as specified in 40 CFR Part 51, Appendix L, Table II, Part B, are adopted by reference.

TABLE III
ABATEMENT STRATEGIES EMISSION REDUCTION ACTIONS EMERGENCY LEVEL

GENERAL

The provisions for planned strategies as specified in 40 CFR Part 51, Appendix L, Table III, Part A, are adopted by reference.

SOURCE CURTAILMENT

The provisions for planned strategies as specified in 40 CFR Part 51, Appendix L, Table III, Part B, are adopted by reference.

These rules are intended to implement Iowa Code section 455B.133.

[Filed 8/24/70; amended 5/2/72, 12/11/73, 12/17/74]

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[Filed 9/23/94, Notice 6/22/94—published 10/12/94, effective 11/16/94]

[Filed 5/28/99, Notice 3/10/99—published 6/16/99, effective 7/21/99]

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[Filed ARC 7950C (Notice ARC 7209C, IAB 12/27/23), IAB 5/15/24, effective 6/19/24]

CHAPTER 22 CONTROLLING AIR POLLUTION

[Prior to 7/1/83, DEQ Ch 3]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—22.1(455B) Definitions and permit requirements for new or existing stationary sources. For the purpose of these rules and the rules in 567—Chapters 20 through 35, the following terms shall, unless otherwise noted, have the meaning indicated in this chapter. Additional definitions potentially applicable to this chapter are set forth in 567—Chapters 21 and 23. The definitions set out in Iowa Code sections 455B.101, 455B.131, and 455B.411 are incorporated verbatim in these rules.

“12-month rolling period” means a period of 12 consecutive months determined on a rolling basis with a new 12-month period beginning on the first day of each calendar month.

“Act” means the Clean Air Act (42 U.S.C. Sections 7401, et seq.), as amended through November 15, 1990.

“Air quality standard” means an allowable level of air contaminant or atmospheric air concentration established by the commission.

“Ambient air” means that portion of the atmosphere, external to buildings, to which the general public has access.

“Anaerobic lagoon,” for purposes of air quality rules in 567—Chapters 20 through 35, means an impoundment, the primary function of which is to store and stabilize organic wastes. The impoundment is designed to receive wastes on a regular basis and the design waste loading rates are such that the predominant biological activity in the impoundment will be anaerobic. An anaerobic lagoon does not include:

1. A runoff control basin that collects and stores only precipitation-induced runoff from an open feedlot feeding operation; or
2. A waste slurry storage basin that receives waste discharges from confinement feeding operations and that is designed for complete removal of accumulated wastes from the basin at least semiannually; or
3. Any anaerobic treatment system that includes collection and treatment facilities for all off-gases.

“Biodiesel fuel” means a renewable, biodegradable, mono alkyl ester combustible liquid fuel derived from agricultural plant oils or animal fat, such as but not limited to soybean oil. For purposes of this definition, “biodiesel fuel” must also meet the specifications of American Society for Testing and Material Specifications (ASTM) D 6751-02, “Standard Specification for Biodiesel Fuel (B100) Blend Stock for Distillate Fuels,” and be registered with the U.S. Environmental Protection Agency as a fuel and a fuel additive under Section 211(b) of the Act.

“Chimney” or *“stack”* means any flue, conduit or duct permitting the discharge or passage of air contaminants into the open air or constructed or arranged for this purpose.

“Combustion for indirect heating” means the combustion of fuel to produce usable heat that is to be transferred through a heat-conducting materials barrier or by a heat storage medium to a material to be heated so that the material being heated is not contacted by, and adds no substance to, the products of combustion.

“Control equipment” means any equipment that has the function to prevent the formation of or the emission to the atmosphere of air contaminants from any fuel burning, incinerator or process equipment.

“Country grain elevator” means the same as defined in 22.10(1).

“Diesel fuel” means a low sulfur fuel oil that complies with the specifications for grade 1-D or 2-D, as defined by the ASTM D 975-02, “Standard Specification for Diesel Fuel Oils,” grade 1-GT or 2-GT, as defined by ASTM D 2880-00, “Standard Specification for Gas Turbine Fuel Oils,” or grade 1 or 2, as defined by ASTM D 396-02, “Standard Specification for Fuel Oils.”

1. For purposes of the air quality rules contained in Title II, and unless otherwise specified, diesel fuel may contain a blend of up to 2.0 percent biodiesel fuel, by volume, as “biodiesel fuel” is defined in this rule.

2. The department shall consider air pollutant emissions calculations for the biodiesel fuel blends specified in paragraph “1” to be equivalent to the air pollutant emissions calculations for unblended diesel fuel.

3. Construction permits or operating permits issued under 567—Chapter 22 that restrict equipment fuel use to diesel fuel shall be considered by the department to include the biodiesel fuel blends specified in paragraph “1,” unless otherwise specified or in a permit issued under this chapter.

“*Electric furnace*” means a furnace in which the melting and refining of metals are accomplished by means of electrical energy.

“*Electronic format*,” “*electronic submittal*,” or “*electronic submittal format*,” for purposes of 567—Chapters 20 through 35, means a software, Internet-based, or other electronic means specified by the department for submitting air quality information or fees to the department related to but not limited to applications, certifications, determination requests, emissions inventories, forms, notifications, payments, permit applications and registrations. References to these information submittal methods in 567—Chapters 20 through 35 may, as specified by the department, include electronic submittal as stated in the applicable rules.

“*Emergency generator*” means any generator of which the sole function is to provide emergency backup power during an interruption of electrical power from the electric utility. An emergency is an unforeseeable condition that is beyond the control of the owner or operator. An emergency generator does not include:

1. Peaking units at electric utilities.
2. Generators at industrial facilities that typically operate at low rates but are not confined to emergency purposes.
3. Any standby generators that are used during time periods when power is available from the electric utility.

“*Emission limitation*” or “*emission standard*” means a requirement established by a state, local government, or the administrator that limits the quantity, rate or concentration of emissions of air pollutants on a continuous basis, including any requirements that limit the level of opacity, prescribe equipment, set fuel specifications or prescribe operation or maintenance procedures for a source to ensure continuous emission reduction.

“*EPA conditional method*” means any method of sampling and analyzing for air pollutants that has been validated by the administrator but that has not been published as an EPA reference method.

“*EPA reference method*” means the following methods used for performance tests and continuous monitoring systems:

1. Performance test (stack test). A stack test shall be conducted according to EPA reference methods specified in 40 CFR 51, Appendix M (as amended or corrected through March 29, 2023); 40 CFR 60, Appendix A (as amended or corrected through March 29, 2023); 40 CFR 61, Appendix B (as amended or corrected through October 7, 2020); and 40 CFR 63, Appendix A (as amended or corrected through March 29, 2023).

2. Continuous monitoring systems. Minimum performance specifications and quality assurance procedures for performance evaluations of continuous monitoring systems are as specified in 40 CFR 60, Appendix B (as amended or corrected through June 28, 2023); 40 CFR 60, Appendix F (as amended or corrected through March 29, 2023); 40 CFR 75, Appendix A (as amended or corrected through August 30, 2016); 40 CFR 75, Appendix B (as amended or corrected through August 30, 2016); and 40 CFR 75, Appendix F (as amended or corrected through August 30, 2016).

“*Equipment*” means the same as defined in 567—21.1(455B).

“*Excess air*” means that amount of air supplied in addition to the theoretical quantity necessary for complete combustion of all fuel or combustible waste material present.

“*Existing equipment*” means the same as defined in 567—21.1(455B).

“*Foundry cupola*” means a stack-type furnace used for melting of metals consisting of but not limited to the furnace proper, tuyeres, fans or blowers, tapping spout, charging equipment, gas cleaning devices and other auxiliaries.

“Fugitive dust” means any airborne solid particulate matter emitted from any source other than a flue or stack.

“Grain processing” means the equipment, or the combination of different types of equipment, used in the processing of grain to produce a product primarily for wholesale or retail sale for human or animal consumption, including the processing of grain for production of biofuels, except for “feed mill equipment” as defined in 567—22.10(455B).

“Grain storage elevator” means any plant or installation at which grain is unloaded, handled, cleaned, dried, stored, or loaded and that is located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant that has a permanent grain storage capacity (grain storage capacity that is inside a building, bin, or silo) of more than 35,200 m³ (ca. 1 million U.S. bushels).

“Greenhouse gas” means carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

“Heating value” means the heat released by combustion of one pound of waste or fuel measured in Btu on an as-received basis. For solid fuels, the heating value shall be determined by use of ASTM Standard D 2015-66.

“Incinerator” means a combustion apparatus designed for high temperature operation in which solid, semisolid, liquid or gaseous combustible refuse is ignited and burned efficiently and from which the solid residues contain little or no combustible material.

“Initiation of construction, installation or alteration” means significant permanent modification of a site to install equipment, control equipment or permanent structures. Not included are activities incident to preliminary engineering, environmental studies, or acquisition of a site for a facility.

“New equipment” means the same as defined in 567—21.1(455B).

“Number 1 fuel oil” and *“number 2 fuel oil,”* also known as “distillate oil,” mean fuel oil that complies with the specifications for fuel oil number 1 or fuel oil number 2, as defined by the ASTM D 396-02, “Standard Specification for Fuel Oils.”

1. For purposes of the air quality rules contained in Title II, and unless otherwise specified, number 1 fuel oil or number 2 fuel oil may contain a blend of up to 2.0 percent biodiesel fuel, by volume, as “biodiesel fuel” is defined in this rule.

2. The department shall consider air pollutant emissions calculations for the biodiesel fuel blends specified in paragraph “1” to be equivalent to the air pollutant emissions calculations for unblended number 1 fuel oil or unblended number 2 fuel oil.

3. Construction permits or operating permits issued under this chapter that restrict equipment fuel use to number 1 fuel oil or number 2 fuel oil shall be considered by the department to include the biodiesel fuel blends specified in paragraph “1,” unless otherwise specified or in a permit issued under this chapter.

“One-hour period” means any 60-minute period commencing on the hour.

“Particulate matter” (except for the purposes of new source performance standards as defined in 40 CFR 60) means any material, except uncombined water, that exists in a finely divided form as a liquid or solid at standard conditions and includes gaseous emissions that condense to liquid or solid form as measured by EPA-approved reference methods.

“Plan documents” means the reports, proposals, preliminary plans, survey and basis of design data, general and detail construction plans, profiles, specifications and all other information pertaining to equipment.

“PM₁₀” means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by an EPA-approved reference method.

“PM_{2.5}” means particulate matter as defined in this rule with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers as measured by an EPA-approved reference method.

“Potential to emit” means the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation is enforceable by the administrator. This term does not alter or affect the use of this term for any

other purposes under the Act, or the term “capacity factor” as used in Title IV of the Act or the regulations relating to acid rain.

For the purpose of determining potential to emit for country grain elevators, the provisions set forth in 22.10(2) shall apply.

For purposes of calculating potential to emit for emergency generators, “maximum capacity” means one of the following:

1. 500 hours of operation annually, if the generator has actually been operated less than 500 hours per year for the past five years.
2. 8,760 hours of operation annually, if the generator has actually been operated more than 500 hours in one of the past five years.
3. The number of hours specified in a state or federally enforceable limit.

If the source is subject to new source construction permit review, then potential to emit is defined as stated above or as established in a federally enforceable permit.

“*Privileged communication*” means information other than air pollutant emissions data, the release of which would tend to affect adversely the competitive position of the owner or operator of the equipment.

“*Process*” means any action, operation or treatment, and all methods and forms of manufacturing or processing, that may emit smoke, particulate matter, gaseous matter or other air contaminant.

“*Process weight*” means the total weight of all materials introduced into any source operation. Solid fuels charged will be considered as part of the process weight, but liquid and gaseous fuels and combustion air will not.

“*Process weight rate*” means continuous or long-run steady-state source operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof; or for a cyclical or batch source operation, the total process weight for a period that covers a complete operation or an integral number of cycles, divided by the number of hours of actual process operation during such a period. Where the nature of any process or operation, or the design of any equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

“*Six-minute period*” means any one of the ten equal parts of a one-hour period.

“*Smoke*” means gas-borne particles resulting from incomplete combustion, consisting predominantly, but not exclusively, of carbon, and other combustible material, or ash, that form a visible plume in the air.

“*Source operation*” means the last operation preceding the emission of an air contaminant and that results in the separation of the air contaminant from the process materials or in the conversion of the process materials into air contaminants but is not an air pollution control operation.

“*Standard conditions*” means a temperature of 68°F and a pressure of 29.92 inches of mercury absolute.

“*Standard cubic foot*” or “*SCF*” means the volume of one cubic foot of gas at standard conditions.

“*Standard metropolitan statistical area*” or “*SMSA*” means an area that has at least one city with a population of at least 50,000 and such surrounding areas as geographically defined by the U.S. Office of Management and Budget (Department of Commerce).

“*Stationary source*” means any building, structure, facility or installation that emits or may emit any air pollutant.

“*Total suspended particulate*” means particulate matter as defined in this rule.

“*Untreated*” as it refers to wood or wood products includes only wood or wood products that have not been treated with compounds such as, but not limited to, paint, pigment-stain, adhesive, varnish, lacquer, or resin or that have not been pressure treated with compounds such as, but not limited to, chromate copper acetate, pentachlorophenol or creosote. “*Untreated*” as it refers to seeds, pellets or other vegetative matter includes only seeds, pellets or other vegetative matter that has not been treated with pesticides or fungicides.

“*Urban area*” means any Iowa city of 100,000 or more population in the current census and all Iowa cities contiguous to such city.

“*Variance*” means a temporary waiver from rules or standards governing the quality, nature, duration or extent of emissions granted by the commission for a specified period of time.

“Volatile organic compounds” or “VOC” means any compound included in the definition of “volatile organic compounds” found at 40 CFR Section 51.100(s) as amended through February 8, 2023.

22.1(1) Permit required. No person shall construct, install, reconstruct or alter any equipment, control equipment or anaerobic lagoon unless a permit is first obtained pursuant to this chapter, 567—31.3(455B), or 567—33.3(455B), or the equipment qualifies for an exemption under 22.1(2). An air quality construction permit shall be obtained prior to the initiation of construction, installation or alteration of any portion of the stationary source or anaerobic lagoon, unless the parameters in 22.1(1) “c” are met.

a. Existing equipment is not subject to this subrule, unless it has been modified, reconstructed, or altered on or after September 23, 1970.

b. No person shall construct or reconstruct a major source of hazardous air pollutants, as defined in 40 CFR Section 63.2 and 40 CFR Section 63.41 as adopted by reference in 567—subrule 23.1(4), unless a construction permit has been obtained from the department, which requires maximum achievable control technology for new sources to be applied. The permit shall be obtained prior to the initiation of construction or reconstruction of the major source.

c. Construction prior to issuance of an air quality construction permit issued by the department may begin if the eligibility requirements stated in 22.1(1) “c”(1) are met. The applicant must assume any liability for construction conducted on a source before the permit is issued. In no case will the applicant be allowed to hook up the equipment to the exhaust stack or operate the equipment in any way that may emit any pollutant prior to receiving a construction permit.

(1) Eligibility.

1. The applicant has submitted a construction permit application to the department, as specified in 22.1(3);

2. The applicant has notified the department of the applicant’s intentions in writing five working days prior to initiating construction; and

3. The equipment or process is not subject to:

- Prevention of significant deterioration (PSD), as set forth in 567—Chapter 33;
- New source performance standards (NSPS), as set forth in 567—subrule 23.1(2);
- National emission standards for hazardous air pollutants (NESHAP), as set forth in 567—subrules 23.1(3) and 23.1(4);
- Emission guidelines, as set forth in 567—subrule 23.1(5);
- Nonattainment new source review, as set forth in 567—Chapter 31; or
- The equipment or process is a major source of hazardous air pollutants, as defined in 40 CFR Sections 63.2 and 63.41, and as adopted by reference in 567—subrule 23.1(4).

The equipment and processes are subject to PSD until the owner or operator of a proposed project legally obtains permitted limits that limit the project below the PSD thresholds (i.e., PSD synthetic minor status).

(2) The applicant must cease construction if the department’s evaluation demonstrates that the construction, reconstruction or modification of the stationary source will interfere with the attainment or maintenance of the national ambient air quality standards or will result in a violation of a control strategy required by 40 CFR Part 51, Subpart G, as amended through February 19, 2015.

(3) The applicant will be required to make any modification to the stationary source that may be imposed in the issued construction permit.

(4) The applicant must notify the department in writing of the actual start date of construction or reconstruction. All notifications shall be submitted to the department in writing no later than 30 days after construction or reconstruction started. All notifications shall include all of the information listed in 22.3(3) “b.”

d. The owner or operator of a country grain elevator, country grain terminal elevator, grain terminal elevator or feed mill equipment, as “country grain elevator,” “country grain terminal elevator,” “grain terminal elevator,” and “feed mill equipment,” as these terms are defined in 22.10(1), may elect to comply with the requirements specified in 567—22.10(455B) as an alternative to the construction permitting requirements set forth in 22.1(1).

22.1(2) Exemptions. An owner or operator may opt to use one of the permitting exemptions in this subrule in lieu of obtaining an air quality construction permit if the equipment, control equipment, or process meets the conditions in the specific exemption and is not:

- Permitted under the provisions of the permit by rule for spray booths, as set forth in 567—22.8(455B);

- Subject to nonattainment new source review, as set forth in 567—Chapter 31; or

- Subject to PSD, as set forth in 567—Chapter 33;

A permitting exemption may be used only if a permit is not necessary to establish federally enforceable limits that restrict potential to emit.

An owner or operator shall keep records at the facility and will make the records available to the department upon request if any of the exemptions under the following paragraphs are claimed:

- 22.1(2) “a” (for equipment > 1 million Btu per hour input),

- 22.1(2) “b,”

- 22.1(2) “e,”

- 22.1(2) “r,” or

- 22.1(2) “s.”

Records kept on site shall contain the following information:

- The specific exemption claimed; and

- A description of the associated equipment.

The permitting exemptions in this subrule do not relieve the owner or operator of any source from any obligation to comply with any other applicable requirements.

a. Fuel-burning equipment for indirect heating and reheating furnaces or cooling units using natural gas or liquefied petroleum gas with a capacity of less than 10 million Btu per hour input per combustion unit.

b. Fuel-burning equipment for indirect heating or indirect cooling with a capacity of less than 1 million Btu per hour input per combustion unit when burning untreated wood, untreated seeds or pellets, other untreated vegetative materials, or fuel oil, provided that the equipment and the fuel meet the conditions specified in this paragraph. Used oils meeting the specification from 40 CFR Section 279.11 as amended through July 14, 2006, are acceptable fuels for this exemption. When combusting used oils, the equipment must have a maximum rated capacity of 50,000 Btu or less per hour of heat input or a maximum throughput of 3,600 gallons or less of used oils per year. When combusting untreated wood, untreated seeds or pellets, or other untreated vegetative materials, the equipment must have a maximum rated capacity of 265,600 Btu or less per hour or a maximum throughput of 378,000 pounds or less per year of each fuel or any combination of fuels. Records shall be maintained on site by the owner or operator for at least two calendar years to demonstrate that fuel usage is less than the exemption thresholds. Owners or operators initiating construction, installation, reconstruction, or alteration of equipment (as defined in 567—22.1(455B)) on or before October 23, 2013, burning coal, used oils, untreated wood, untreated seeds or pellets, or other untreated vegetative materials that qualified for this exemption may continue to claim this exemption after October 23, 2013, without being restricted to the maximum heat input or throughput specified in this paragraph.

c. Mobile internal combustion and jet engines, marine vessels and locomotives.

d. Equipment used for cultivating land, harvesting crops, or raising livestock other than anaerobic lagoons. This exemption is not applicable if the equipment is used to remove substances from grain that were applied to the grain by another person. This exemption is also not applicable to equipment used by a person to manufacture commercial feed, as defined in Iowa Code section 198.3, that is normally not fed to livestock, owned by the person or another person, in a feedlot, as defined in Iowa Code section 172D.1(6), or a confinement building owned or operated by that person and located in this state.

e. Incinerators and pyrolysis cleaning furnaces with a rated refuse burning capacity of less than 25 pounds per hour for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013. Pyrolysis cleaning furnace exemption is limited to those units that use only natural gas or propane. Salt bath units are not included in this exemption. Incinerators or pyrolysis cleaning furnaces for which initiation of construction, installation, reconstruction,

or alteration (as defined in 567—21.1(455B)) occurred after October 23, 2013, shall not qualify for this exemption. After October 23, 2013, only paint clean-off ovens with a maximum rated capacity of less than 25 pounds per hour that do not combust lead-containing materials shall qualify for this exemption.

f. Fugitive dust controls, unless a control efficiency can be assigned to the equipment or control equipment.

g. Equipment or control equipment that reduces or eliminates all emission to the atmosphere. An owner or operator electing to use this exemption shall provide to the department the following information:

- (1) Name and location of the facility;
- (2) Detailed description of each change being made;
- (3) Date of the beginning of actual construction and date that operation will begin after the changes are made;
- (4) Detailed emissions estimates showing:
 1. The actual and potential emissions, specifically noting increases or decreases, for the project for all regulated pollutants (as defined in 567—24.100(455B)); and
 2. The accumulated emissions increases associated with each change when totaled with other net emissions increases at the facility contemporaneous with the proposed change (occurring within five years before construction of the particular change commences).
- (5) Documentation of the basis for all emissions estimates;
- (6) Height of the emission point or stack and height of the highest building within 50 feet;
- (7) Statement that the provisions of 567—Chapters 31 and 33 do not apply; and
- (8) Written statement containing certification by a responsible official as defined in 567—24.100(455B) of truth, accuracy, and completeness that:
 1. Accumulated emissions with other contemporaneous net increases have not exceeded significant levels, as defined in 40 CFR 52.21(b)(23), and adopted in 567—33.3(455B);
 2. The changes will not prevent the attainment or maintenance of the ambient air quality standards specified in 567—22.11(455B);
 3. Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

The conditions listed below also apply to this exemption:

- If an owner or operator opts to use this exemption for equipment or a process not yet constructed or modified, the information shall be provided to the department at least 30 days in advance of the beginning of construction on the project.
 - If an owner or operator opts to use this exemption for equipment or a process that has already been constructed or modified and that does not have a construction permit for that construction or modification, the owner or operator shall not operate until the information listed above is provided to the department.
 - If a construction permit has been previously issued for the equipment or control equipment, all other conditions of the construction permit remain in effect.
 - If an owner or operator wishes to obtain credit for emission reductions, an air quality construction permit must be obtained for the reduction prior to the time the reduction is made.
- h.* Equipment (other than anaerobic lagoons) or control equipment that emits odors, unless such equipment or control equipment also emits particulate matter or any other regulated air contaminant (as defined in 567—24.100(455B)).
- i.* Reserved.
- j.* Residential heaters, cookstoves, or fireplaces that burn untreated wood, untreated seeds or pellets, or other untreated vegetative materials.
- k.* Asbestos demolition and renovation projects subject to 40 CFR Section 61.145 as adopted by reference in 567—subrule 23.1(3).
- l.* The equipment in laboratories used exclusively for nonproduction chemical and physical analyses. Nonproduction analyses means analyses incidental to the production of a good or service and includes analyses conducted for quality assurance or quality control activities or for the assessment of environmental impact.

m. Storage tanks with a capacity of less than 19,812 gallons and an annual throughput of less than 200,000 gallons.

n. Stack or vents to prevent escape of sewer gases through plumbing traps. Systems that include any industrial waste are not exempt.

o. A nonproduction surface coating process that uses only handheld aerosol spray cans.

p. Brazing, soldering or welding equipment or portable cutting torches used only for nonproduction activities.

q. Cooling and ventilating equipment: comfort air conditioning not designed or used to remove air contaminants generated by, or released from, specific units of equipment.

r. An internal combustion engine with a brake horsepower rating of less than 400 measured at the shaft, provided that the owner or operator meets all of the conditions in this paragraph. For the purposes of this exemption, the manufacturer's nameplate rated capacity at full load shall be defined as the brake horsepower output at the shaft. The owner or operator of an engine that was manufactured, ordered, modified or reconstructed after March 18, 2009, may use this exemption only if the owner or operator, prior to installing, modifying or reconstructing the engine, submits to the department a completed registration on forms provided by the department (unless the engine is exempted from registration, as specified in this paragraph or on the registration form) certifying that the engine is in compliance with the following federal regulations:

(1) NSPS for stationary compression ignition internal combustion engines (40 CFR Part 60, Subpart IIII); or

(2) NSPS for stationary spark ignition internal combustion engines (40 CFR Part 60, Subpart JJJJ); and

(3) NESHAP for reciprocating internal combustion engines (40 CFR Part 63, Subpart ZZZZ).

Use of this exemption does not relieve an owner or operator from any obligation to comply with NSPS or NESHAP requirements. An engine that meets the definition of a nonroad engine as specified in 40 CFR Section 1068.30, as amended through January 24, 2023, is exempt from the registration requirements of this paragraph.

s. Equipment that is not related to the production of goods or services and used exclusively for academic purposes, located at educational institutions (as defined in Iowa Code section 455B.161). The equipment covered under this exemption is limited to lab hoods, art class equipment, wood shop equipment in classrooms, wood fired pottery kilns, and fuel-burning units with a capacity of less than 1 million Btu per hour fuel capacity. This exemption does not apply to incinerators.

t. Any container, storage tank, or vessel that contains a fluid having a maximum true vapor pressure of less than 0.75 psia. "Maximum true vapor pressure" means the equilibrium partial pressure of the material considering:

(1) For material stored at ambient temperature, the maximum monthly average temperature as reported by the National Weather Service, or

(2) For material stored above or below the ambient temperature, the temperature equal to the highest calendar-month average of the material storage temperature.

u. Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sandblast cleaning, shot blasting, shot peening, or polishing ceramic artwork, leather, metals (other than beryllium), plastics, concrete, rubber, paper stock, and wood or wood products, where such equipment is either used for nonproduction activities or exhausted inside a building.

v. Manually operated equipment, as defined in 567—24.100(455B), used for buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, scarfing, surface grinding, or turning.

w. Small unit exemption.

(1) "Small unit" means any emission unit and associated control (if applicable) that emits less than the following:

1. 2 pounds per year of lead and lead compounds expressed as lead (40 pounds per year of lead or lead compounds for equipment for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013);

2. 5 tons per year of sulfur dioxide;

3. 5 tons per year of nitrogen oxides;
4. 5 tons per year of volatile organic compounds;
5. 5 tons per year of carbon monoxide;
6. 5 tons per year of particulate matter (particulate matter as defined in 40 CFR 51.100(pp), as amended through November 7, 1986);
7. 2.5 tons per year of PM₁₀;
8. 0.52 tons per year of PM_{2.5} (does not apply to equipment for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013); and
9. 5 tons per year of hazardous air pollutants (as defined in 567—24.100(455B)).

For the purposes of this exemption, “emission unit” means any part or activity of a stationary source that emits or has the potential to emit any pollutant subject to regulation under the Act. This exemption applies to existing and new or modified “small units.”

An emission unit that emits hazardous air pollutants (as defined in 567—24.100(455B)) is not eligible for this exemption if the emission unit is required to be reviewed for compliance with 567—subrule 23.1(3), emission standards for hazardous air pollutants (40 CFR Part 61, NESHAP), or 567—subrule 23.1(4), emission standards for hazardous air pollutants for source categories (40 CFR Part 63, NESHAP).

An emission unit that emits air pollutants that are not regulated air pollutants as defined in 567—24.100(455B) shall not be eligible to use this exemption.

(2) Permit requested. If a construction permit is requested in writing by the owner or operator of a small unit, the director may issue a construction permit for the emission point associated with that emission unit.

(3) An owner or operator that utilizes the small unit exemption must maintain on site an “exemption justification document.” The exemption justification document must document conformance and compliance with the emission rate limits contained in the definition of “small unit” for the particular emission unit or group of similar emission units obtaining the exemption. Controls that may be part of the exemption justification document include, but are not limited to, the following: emission control devices, such as cyclones, filters, or baghouses; restricted hours of operation or fuel; and raw material or solvent substitution. The exemption justification document for an emission unit or group of similar emission units must be made available for review during normal business hours and for state or EPA on-site inspections and shall be provided to the director or the director’s representative upon request. If an exemption justification document does not exist, the applicability of the small unit exemption is voided for that particular emission unit or group of similar emission units. The controls described in the exemption justification document establish a limit on the potential emissions. An exemption justification document shall include the following for each applicable emission unit or group of similar emission units:

1. A narrative description of how the emissions from the emission unit or group of similar emission units were determined and maintained at or below the annual small unit exemption levels.
2. If air pollution control equipment is used, a description of the air pollution control equipment used on the emission unit or group of similar emission units and a statement that the emission unit or group of similar emission units will not be operated without the pollution control equipment operating.
3. If air pollution control equipment is used, the applicant shall maintain a copy of any report of manufacturer’s testing results of any emissions test, if available. The department may require a test if it believes that a test is necessary for the exemption claim.
4. A description of all production limits required for the emission unit or group of similar emission units to comply with the exemption levels.
5. Detailed calculations of emissions reflecting the use of any air pollution control devices or production or throughput limitations, or both, for applicable emission unit or group of similar emission units.
6. Records of actual operation that demonstrate that the annual emissions from the emission unit or group of similar emission units were maintained below the exemption levels.

7. Facilities designated as major sources with respect to 567—22.4(455B) and 567—24.101(455B), or subject to any applicable federal requirements, shall retain all records demonstrating compliance with the exemption justification document for five years. The record retention requirements supersede any retention conditions of an individual exemption.

8. A certification from the responsible official that the emission unit or group of similar emission units have complied with the exemption levels specified in 22.1(2)“w”(1).

(4) Requirement to apply for a construction permit. An owner or operator of a small unit will be required to obtain a construction permit or take the unit out of service if the emission unit exceeds the small unit emission levels.

1. If, during an inspection or other investigation of a facility, the department believes that the emission unit exceeds the emission levels that define a “small unit,” then the department will submit calculations and detailed information in a letter to the owner or operator. The owner or operator shall have 60 days to respond with detailed calculations and information to substantiate a claim that the small unit does not exceed the emission levels that define a small unit.

2. If the owner or operator is unable to substantiate a claim to the satisfaction of the department, then the owner or operator that has been using the small unit exemption must cease operation of that small unit or apply for a construction permit for that unit within 90 days after receiving a letter of notice from the department. The emission unit and control equipment may continue operation during this period and the associated initial application review period.

3. If the notification of nonqualification as a small unit is made by the department following the process described above, the owner or operator will be deemed to have constructed an emission unit without the required permit and may be subject to applicable penalties.

(5) Required notice for construction or modification of a substantial small unit. The owner or operator shall notify the department in writing at least ten days prior to commencing construction of any new or modified “substantial small unit” as defined in 22.1(2)“w”(6). The owner or operator shall notify the department within 30 days after determining an existing small unit meets the criteria of the “substantial small unit” as defined in 22.1(2)“w”(6). Notification shall include the name of the business, the location where the unit will be installed, and information describing the unit and quantifying its emissions. The owner or operator shall notify the department within 90 days of the end of the calendar year for which the aggregate emissions from substantial small units at the facility have reached any of the cumulative notice thresholds listed below.

(6) For the purposes of this paragraph, “substantial small unit” means a small unit that emits more than the following amounts, as documented in the exemption justification document:

1. 2 pounds per year of lead and lead compounds expressed as lead (30 pounds per year of lead or lead compounds for equipment for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013);

2. 3.75 tons per year of sulfur dioxide;

3. 3.75 tons per year of nitrogen oxides;

4. 3.75 tons per year of volatile organic compounds;

5. 3.75 tons per year of carbon monoxide;

6. 3.75 tons per year of particulate matter (particulate matter as defined in 40 CFR 51.100(pp), as amended through November 7, 1986);

7. 1.875 tons per year of PM₁₀;

8. 0.4 tons per year of PM_{2.5} (does not apply to equipment for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013); or

9. 3.75 tons per year of any hazardous air pollutant or 3.75 tons per year of any combination of hazardous air pollutants.

An emission unit is a “substantial small unit” only for those substances for which annual emissions exceed the above-indicated amounts.

(7) Required notice that a cumulative notice threshold has been reached. Once a “cumulative notice threshold,” as defined in 22.1(2)“w”(8), has been reached for any of the listed pollutants, the owner or

operator at the facility must apply for air construction permits for all substantial small units for which the cumulative notice threshold for the pollutant(s) in question has been reached. The owner or operator shall have 90 days from the date it determines that the cumulative notice threshold has been reached in which to apply for construction permit(s). The owner or operator shall submit a letter to the department, within five working days of making this determination, establishing the date the owner or operator determined that the cumulative notice threshold had been reached.

(8) “Cumulative notice threshold” means the total combined emissions from all substantial small units using the small unit exemption that emit at the facility the following amounts, as documented in the exemption justification document:

1. 0.6 tons per year of lead and lead compounds expressed as lead;
 2. 40 tons per year of sulfur dioxide;
 3. 40 tons per year of nitrogen oxides;
 4. 40 tons per year of volatile organic compounds;
 5. 100 tons per year of carbon monoxide;
 6. 25 tons per year of particulate matter (particulate matter as defined in 40 CFR 51.100(pp), as amended through November 7, 1986);
 7. 15 tons per year of PM₁₀;
 8. 10 tons per year of PM_{2.5} (does not apply to equipment for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013); or
 9. 10 tons per year of any hazardous air pollutant or 25 tons per year of any combination of hazardous air pollutants.
- x. The following equipment, processes, and activities:
- (1) Cafeterias, kitchens, and other facilities used for preparing food or beverages primarily for consumption at the source.
 - (2) Consumer use of office equipment and products, not including printers or businesses primarily involved in photographic reproduction.
 - (3) Janitorial services and consumer use of janitorial products.
 - (4) Internal combustion engines used for lawn care, landscaping, and groundskeeping purposes.
 - (5) Laundry activities located at a stationary source that uses washers and dryers to clean, with water solutions of bleach or detergents, or to dry clothing, bedding, and other fabric items used on site. This exemption does not include laundry activities that use dry cleaning equipment or steam boilers.
 - (6) Bathroom vent emissions, including toilet vent emissions.
 - (7) Blacksmith forges.
 - (8) Plant maintenance and upkeep activities and repair or maintenance shop activities (e.g., groundskeeping, general repairs, cleaning, painting, welding, plumbing, retarring roofs, installing insulation, and paving parking lots), provided that these activities are not conducted as part of manufacturing process, are not related to the source’s primary business activity, and do not otherwise trigger a permit modification. Cleaning and painting activities qualify if they are not subject to control requirements for volatile organic compounds or hazardous air pollutants as defined in 567—24.100(455B).
 - (9) Air compressors and vacuum pumps, including hand tools.
 - (10) Batteries and battery charging stations, except at battery manufacturing plants.
 - (11) Equipment used to store, mix, pump, handle or package soaps, detergents, surfactants, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, and aqueous salt or caustic solutions, provided that appropriate lids and covers are utilized and that no organic solvent has been mixed with such materials.
 - (12) Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
 - (13) Vents from continuous emissions monitors and other analyzers.
 - (14) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.

(15) Equipment used by surface coating operations that apply the coating by brush, roller, or dipping, except equipment that emits volatile organic compounds or hazardous air pollutants as defined in 567—24.100(455B).

(16) Hydraulic and hydrostatic testing equipment.

(17) Environmental chambers not using gases that are hazardous air pollutants as defined in 567—24.100(455B).

(18) Shock chambers, humidity chambers, and solar simulators.

(19) Fugitive dust emissions related to movement of passenger vehicles on unpaved road surfaces, provided that the emissions are not counted for applicability purposes and that any fugitive dust control plan or its equivalent is submitted as required by the department.

(20) Process water filtration systems and demineralizers, demineralized water tanks, and demineralizer vents.

(21) Boiler water treatment operations, not including cooling towers or lime silos.

(22) Oxygen scavenging (deaeration) of water.

(23) Fire suppression systems.

(24) Emergency road flares.

(25) Steam vents, safety relief valves, and steam leaks.

(26) Steam sterilizers.

(27) Application of hot melt adhesives from closed-pot systems using polyolefin compounds, polyamides, acrylics, ethylene vinyl acetate and urethane material when stored and applied at the manufacturer's recommended temperatures. Equipment used to apply hot melt adhesives shall have a safety device that automatically shuts down the equipment if the hot melt temperature exceeds the manufacturer's recommended application temperature.

y. Direct-fired equipment burning natural gas, propane, or liquefied propane with a capacity of less than 10 million Btu per hour input, and direct-fired equipment burning fuel oil with a capacity of less than 1 million Btu per hour input, with emissions that are attributable only to the products of combustion. Emissions other than those attributable to the products of combustion shall be accounted for in an enforceable permit condition or shall otherwise be exempt under this subrule.

z. Closed refrigeration systems, including storage tanks used in refrigeration systems but excluding any combustion equipment associated with such systems.

aa. Pretreatment application processes that use aqueous-based chemistries designed to clean a substrate, provided that the chemical concentrate contains no more than 5 percent organic solvents by weight. This exemption includes pretreatment processes that use aqueous-based cleaners, cleaner-phosphatizers, and phosphate conversion coating chemistries.

bb. Indoor-vented powder coating operations with filters or powder recovery systems.

cc. Electric curing ovens or curing ovens that run on natural gas or propane with a maximum heat input of less than 10 million Btu per hour and that are used for powder coating operations, provided that the total cured powder usage is less than 75 tons of powder per year at the stationary source. Records shall be maintained on site by the owner or operator for a period of at least two calendar years to demonstrate that cured powder usage is less than the exemption threshold.

dd. Each production painting, adhesive or coating unit using an application method other than a spray system and associated cleaning operations that use 1,000 gallons or less of coating and solvents annually, unless the production painting, adhesive or coating unit and associated cleaning operations are subject to work practice, process limits, emissions limits, stack testing, recordkeeping or reporting requirements under 567—subrule 23.1(2), 23.1(3) or 23.1(4). Records shall be maintained on site by the owner or operator for a period of at least two calendar years to demonstrate that paint, adhesive, or solvent usage is at or below the exemption threshold.

ee. Any production surface coating activity that uses only nonrefillable handheld aerosol cans, where the total volatile organic compound emissions from all these activities at a stationary source do not exceed 5.0 tons per year.

ff. Production welding.

(1) Consumable electrode.

1. Welding operations for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013, using a consumable electrode, provided that the consumable electrode used falls within American Welding Society specification A5.18/A5.18M for Gas Metal Arc Welding (GMAW), A5.1 or A5.5 for Shielded Metal Arc Welding (SMAW), and A5.20 for Flux Core Arc Welding (FCAW), and provided that the quantity of all electrodes used at the stationary source of the acceptable specifications is below 200,000 pounds per year for GMAW and 28,000 pounds per year for SMAW or FCAW. Records that identify the type and annual amount of welding electrode used shall be maintained on site by the owner or operator for a period of at least two calendar years. For stationary sources where electrode usage exceeds these levels, the welding activity at the stationary source may be exempted if the amount of electrode used (Y) is less than:

Y = the greater of $1380x - 19,200$ or 200,000 for GMAW, or

Y = the greater of $187x - 2,600$ or 28,000 for SMAW or FCAW

Where “x” is the minimum distance to the property line in feet and “Y” is the annual electrode usage in pounds per year.

If the stationary source has welding processes that fit into both of the specified exemptions, the most stringent limits must be applied.

2. Welding operations for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred after October 23, 2013, using a consumable electrode, provided that the consumable electrode used falls within American Welding Society specification A5.18/A5.18M for Gas Metal Arc Welding (GMAW), A5.1 or A5.5 for Shielded Metal Arc Welding (SMAW), and A5.20 for Flux Core Arc Welding (FCAW), and provided that the quantity of all electrodes used at the stationary source of the acceptable specifications is below 12,500 pounds per year for GMAW and 1,600 pounds per year for SMAW or FCAW. Records that identify the type and annual amount of welding electrode used shall be maintained on site by the owner or operator for a period of at least two calendar years. For stationary sources where electrode usage exceeds these levels, the welding activity at the stationary source may be exempted if the amount of electrode used (Y) is less than:

Y = the greater of $84x - 1,200$ or 12,500 for GMAW, or

Y = the greater of $11x - 160$ or 1,600 for SMAW or FCAW

Where “x” is the minimum distance to the property line in feet and “Y” is the annual electrode usage in pounds per year.

If the stationary source has welding processes that fit into both of the specified exemptions, the most stringent limits must be applied.

(2) Resistance welding, submerged arc welding, or arc welding that does not use a consumable electrode, provided that the base metals do not include stainless steel, alloys of lead, alloys of arsenic, or alloys of beryllium and provided that the base metals are uncoated, excluding manufacturing process lubricants.

gg. Electric hand soldering, wave soldering, and electric solder paste reflow ovens for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013. Electric hand soldering, wave soldering, and electric solder paste reflow ovens for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred after October 23, 2013, shall be limited to 37,000 pounds or less per year of lead-containing solder. Records shall be maintained on site by the owner or operator for at least two calendar years to demonstrate that use of lead-containing solder is less than the exemption thresholds.

hh. Pressurized piping and storage systems for natural gas, propane, liquefied petroleum gas (LPG), and refrigerants, where emissions could only result from an upset condition.

ii. Emissions from the storage and mixing of paints and solvents associated with the painting operations, provided that the emissions from the storage and mixing are accounted for in an enforceable permit condition or are otherwise exempt.

jj. Product labeling using laser and ink-jet printers with target distances less than or equal to six inches and an annual material throughput of less than 1,000 gallons per year as calculated on a stationary sourcewide basis.

kk. Equipment related to research and development activities at a stationary source, provided that:

(1) Actual emissions from all research and development activities at the stationary source based on a 12-month rolling total are less than the following levels:

1. 2 pounds per year of lead and lead compounds expressed as lead (40 pounds per year for research and development activities that commenced on or before October 23, 2013);
2. 5 tons per year of sulfur dioxide;
3. 5 tons per year of nitrogen oxides;
4. 5 tons per year of volatile organic compounds;
5. 5 tons per year of carbon monoxide;
6. 5 tons per year of particulate matter (particulate matter as defined in 40 CFR 51.100(pp) as amended through November 7, 1986);
7. 2.5 tons per year of PM₁₀;
8. 0.52 tons per year of PM_{2.5} (does not apply to research and development activities that commenced on or before October 23, 2013); and
9. 5 tons per year of hazardous pollutants (as defined in 567—24.100(455B)); and

(2) The owner or operator maintains records of actual operations demonstrating that the annual emissions from all research and development activities conducted under this exemption are below the levels listed in 22.1(2) “*kk*”(1). These records shall:

1. Include a list of equipment that is included under the exemption;
2. Include records of actual operation and detailed calculations of actual annual emissions, reflecting the use of any control equipment and demonstrating that the emissions are below the levels specified in the exemption;
3. Include, if air pollution equipment is used in the calculation of emissions, a copy of any report of manufacturer’s testing, if available. The department may require a test if it believes that a test is necessary for the exemption claim; and
4. Be maintained on site for a minimum of two years, be made available for review during normal business hours and for state and EPA on-site inspections, and be provided to the director or the director’s designee upon request. Facilities designated as major sources pursuant to 567—22.4(455B) and 567—24.101(455B), or subject to any applicable federal requirements, shall retain all records demonstrating compliance with this exemption for five years.

(3) An owner or operator using this exemption obtains a construction permit or ceases operation of equipment if operation of the equipment would cause the emission levels listed in this exemption to be exceeded.

For the purposes of this exemption, “research and development activities” shall be defined as activities:

1. That are operated under the close supervision of technically trained personnel;
2. That are conducted for the primary purpose of theoretical research or research and development into new or improved processes and products;
3. That do not manufacture more than de minimus amounts of commercial products; and
4. That do not contribute to the manufacture of commercial products by collocated sources in more than a de minimus manner.

ll. A regional collection center (RCC), as defined in 567—Chapter 211, involved in the processing of permitted hazardous materials from households and conditionally exempt small quantity generators (CESQG), not to exceed 1,200,000 pounds of VOC-containing material in a 12-month rolling period. Latex paint drying may not exceed 120,000 pounds per year on a 12-month rolling total. Other nonprocessing emission units (e.g., standby generators and waste oil heaters) shall not be eligible to use this exemption.

mm. Cold solvent cleaning machines that are not in-line cleaning machines, where the maximum vapor pressure of the solvents used shall not exceed 0.7 kPa (5 mmHg or 0.1 psi) at 20°C (68°F). The machine must be equipped with a tightly fitted cover or lid that shall be closed at all times except during parts entry and removal. This exemption cannot be used for cold solvent cleaning machines that use solvent containing methylene chloride (CAS # 75-09-2), perchloroethylene (CAS # 127-18-4), trichloroethylene (CAS # 79-01-6), 1,1,1-trichloroethane (CAS # 71-55-6), carbon tetrachloride (CAS # 56-23-5) or chloroform (CAS # 67-66-3), or any combination of these halogenated HAP solvents in a total concentration greater than 5 percent by weight.

nn. Emissions from mobile over-the-road trucks, and mobile agricultural and construction internal combustion engines that are operated only for repair or maintenance purposes at equipment repair shops or equipment dealerships, and only when the repair shops or equipment dealerships are not major sources as defined in 567—24.100(455B).

oo. A nonroad diesel fueled engine, as “nonroad engine” is defined in 40 CFR Section 1068.30 as amended through January 24, 2023, with a brake horsepower rating of less than 1,100 at full load measured at the shaft, used to conduct periodic testing and maintenance on natural gas pipelines. For the purposes of this exemption, the manufacturer’s nameplate rating shall be defined as the brake horsepower output at the shaft at full load.

(1) To qualify for the exemption, the engine must:

1. Be used for periodic testing and maintenance on natural gas pipelines outside the compressor station, which shall not exceed 330 hours in any 12-month consecutive period at a single location; or

2. Be used for periodic testing and maintenance on natural gas pipelines within the compressor station, which shall not exceed 330 hours in any 12-month consecutive period.

(2) The owner or operator shall maintain a monthly record of the number of hours the engine operated and a record of the rolling 12-month total of the number of hours the engine operated for each location outside the compressor station and within the compressor station. These records shall be maintained for two years. Records shall be made available to the department upon request.

(3) This exemption shall not apply to the replacement or substitution of engines for backup power generation at a pipeline compressor station.

22.1(3) Construction permits. The owner or operator of a new or modified stationary source shall apply for a construction permit. Construction permit applications, including the information referenced above and in 567—22.1(455B) through 567—22.10(455B), shall be submitted in the electronic format specified by the department, if electronic submittal is provided.

The owner or operator of any new or modified industrial anaerobic lagoon shall apply for a construction permit as specified in this subrule and as provided in 567—Chapter 22. The owner or operator of a new or modified anaerobic lagoon for an animal feeding operation shall apply for a construction permit as provided in 567—Chapter 65.

a. Regulatory applicability determinations. If requested in writing, the director will review the design concepts of equipment and associated control equipment prior to application for a construction permit. The purpose of the review would be to determine the acceptability of the location of the equipment. If the review is requested, the requester shall supply the following information and submit a fee as required in 567—Chapter 30:

(1) Preliminary plans and specifications of equipment and related control equipment.

(2) The exact site location and a plot plan of the immediate area, including the distance to and height of nearby buildings and the estimated location and elevation of the emission points.

(3) The estimated emission rates of any air contaminants that are to be considered.

(4) The estimated exhaust gas temperature, velocity at the point of discharge, and stack diameter at the point of discharge.

(5) An estimate of when construction would begin and when construction would be completed.

b. Construction permit applications. Each application for a construction permit shall be submitted to the department. Final plans and specifications for the proposed equipment or related control equipment shall be submitted with the application for a permit and shall be prepared by or under the direct supervision of a professional engineer licensed in the state of Iowa in conformance with Iowa Code section 542B.1, or consistent with the provisions of Iowa Code section 542B.26 for any full-time employee of any corporation while the employee is doing work for that corporation. The application for a permit to construct shall include the following information:

(1) A description of the equipment or control equipment covered by the application;

(2) A scaled plot plan, including the distance and height of nearby buildings, and the location and elevation of existing and proposed emission points;

(3) The composition of the effluent stream, both before and after any control equipment with estimates of emission rates, concentration, volume and temperature;

- (4) The physical and chemical characteristics of the air contaminants;
- (5) The proposed dates and description of any tests to be made by the owner or operator of the completed installation to verify compliance with applicable emission limits or standards of performance;
- (6) Information pertaining to sampling port locations, scaffolding, power sources for operation of appropriate sampling instruments, and pertinent allied facilities for making tests to ascertain compliance;
- (7) Any additional information deemed necessary by the department to determine compliance with or applicability of 567—22.4(455B), 567—22.5(455B), 567—31.3(455B) and 567—33.3(455B);
- (8) Reserved.
- (9) A signed statement that ensures the applicant's legal entitlement to install and operate equipment covered by the permit application on the property identified in the permit application. A signed statement shall not be required for rock crushers, portable concrete or asphalt equipment used in conjunction with specific identified construction projects that are intended to be located at a site only for the duration of the specific, identified construction project; and
- (10) Application fee.
 1. The owner or operator shall submit a fee as required in 567—Chapter 30 to obtain a permit under 22.1(1), 567—22.4(455B), 567—22.5(455B), 567—22.8(455B), 567—22.10(455B), 567—Chapter 31 or 567—Chapter 33;
 2. For application submittals from a minor source as defined in 567—Chapter 30, the department shall not initiate review and processing of a permit application submittal until all required application fees have been paid to the department; and
- (11) Quantity of greenhouse gas emissions for all applications for projects that will or do have greenhouse gas emissions. For all applications for projects that will not or do not have greenhouse gas emissions, the applicant shall indicate in the application that no greenhouse gases will be emitted and the applicant will not be required to file an inventory of greenhouse gases with that application, unless requested by the department.
 - c. *Application requirements for anaerobic lagoons.* The application for a permit to construct an anaerobic lagoon shall include the following information:
 - (1) The source of the water being discharged to the lagoon;
 - (2) A plot plan, including distances to nearby residences or occupied buildings, local land use zoning maps of the vicinity, and a general description of the topography in the vicinity of the lagoon;
 - (3) In the case of an animal feeding operation, the information required in 567—Chapter 65;
 - (4) In the case of an industrial source, a chemical description of the waste being discharged to the lagoon;
 - (5) A report of sulfate analyses conducted on the water to be used for any purpose in a livestock operation proposing to use an anaerobic lagoon. The report shall be prepared by using standard methods as defined in 567—60.2(455B);
 - (6) A description of available water supplies to prove that adequate water is available for dilution;
 - (7) In the case of an animal feeding operation, a waste management plan describing the method of waste collection and disposal and the land to be used for disposal. Evidence that the waste disposal equipment is of sufficient size to dispose of the wastes within a 20-day period per year shall also be provided;
 - (8) Any additional information needed by the department to determine compliance with these rules.

[ARC 7951C, IAB 5/15/24, effective 6/19/24]

567—22.2(455B) Processing permit applications.

22.2(1) *Incomplete applications.* The department will notify the applicant whether the application is complete or incomplete. If the application is found by the department to be incomplete upon receipt, the applicant will be notified within 30 days of that fact and of the specific deficiencies. Sixty days following such notification, the application may be denied for lack of information. When this schedule would cause undue hardship to an applicant, or the applicant has a compelling need to proceed promptly with the proposed installation, modification or location, a request for priority consideration and the justification therefor shall be submitted to the department.

22.2(2) *Public notice and participation.* A notice of intent to issue a construction permit to a major stationary source shall be published by the department in a newspaper having general circulation in the area affected by the emissions of the proposed source. The notice and supporting documentation shall be made available for public inspection upon request from the department's central office. Publication of the notice shall be made at least 30 days prior to issuing a permit and shall include the department's evaluation of ambient air impacts. The public may submit written comments or request a public hearing. If the response indicates significant interest, a public hearing may be held after due notice.

22.2(3) *Final notice.* The department shall notify the applicant in writing of the issuance or denial of a construction permit as soon as practicable and at least within 120 days of receipt of the completed application. This shall not apply to applicants for electric generating facilities subject to Iowa Code chapter 476A.

[ARC 7951C, IAB 5/15/24, effective 6/19/24]

567—22.3(455B) Issuing permits.

22.3(1) *Stationary sources other than anaerobic lagoons.* In no case shall a construction permit that results in an increase in emissions be issued to any facility that is in violation of any condition found in a permit involving PSD, NSPS, NESHAP or a provision of the Iowa state implementation plan (SIP). If the facility is in compliance with a schedule for correcting the violation and that schedule is contained in an order or permit condition, the department may consider issuance of a construction permit. A construction permit shall be issued when the director concludes that the preceding requirement has been met and:

- a. That the required plans and specifications represent equipment that reasonably can be expected to comply with all applicable emission standards, and
- b. That the expected emissions from the proposed source or modification in conjunction with all other emissions will not prevent the attainment or maintenance of the ambient air quality standards specified in 567—22.11(455B), and
- c. That the applicant has not relied on emission limits based on stack height that exceeds good engineering practice or any other dispersion techniques as defined in 567—subrule 23.1(6), and
- d. That the applicant has met all other applicable requirements.

22.3(2) *Anaerobic lagoons.* A construction permit for an industrial anaerobic lagoon shall be issued when the director concludes that the application for permit represents an approach to odor control that can reasonably be expected to comply with the criteria in 567—subrule 23.5(2). A construction permit for an animal feeding operation using an anaerobic lagoon shall be issued when the director concludes that the application has met the requirements of 567—Chapter 65.

22.3(3) *Conditions of approval.* A permit may be issued subject to conditions that shall be specified in writing. Such conditions may include but are not limited to emission limits, operating conditions, fuel specifications, compliance testing, continuous monitoring, and excess emission reporting.

a. Each permit shall specify the date on which it becomes void if work on the installation for which it was issued has not been initiated.

b. Each permit shall list the requirements for notifying the department of the dates of intended startup, start of construction and actual equipment startup. All notifications shall be in writing and include the following information:

- (1) The date or dates required by 22.3(3)“b” for which the notice is being submitted.
- (2) Facility name.
- (3) Facility address.
- (4) DNR-assigned facility number.
- (5) DNR air construction permit number.
- (6) The name or the number of the emission unit or units in the notification.
- (7) The emission point number or numbers in the notification.
- (8) The name and signature of a company official.
- (9) The date the notification was signed.

c. Each permit shall specify that no review has been undertaken on the various engineering aspects of the equipment other than the potential of the equipment for reducing air contaminant emissions.

d. Reserved.

e. If changes in the final plans and specifications are proposed by the permittee after a construction permit has been issued, a supplemental permit shall be obtained.

f. A permit is not transferable from one location to another or from one piece of equipment to another unless the equipment is portable. When portable equipment for which a permit has been issued is to be transferred from one location to another, the department shall be notified in writing at least seven days prior to the transfer of the portable equipment to the new location. Written notification shall be submitted to the department through one of the following methods: electronic mail (email), mail delivery service (including U.S. Mail), hand delivery, facsimile (fax), or by electronic format specified by the department (at such time as an Internet-based submittal system or other, similar electronic submittal system becomes available). However, if the owner or operator is relocating the portable equipment to an area currently classified as nonattainment for ambient air quality standards or to an area under a maintenance plan for ambient air quality standards, the owner or operator shall notify the department at least 14 days prior to transferring the portable equipment to the new location. A list of nonattainment and maintenance areas may be obtained from the department, upon request, or on the department's Internet website. The owner or operator will be notified by the department at least ten days prior to the scheduled relocation if said relocation will prevent the attainment or maintenance of ambient air quality standards and thus require a more stringent emission standard and the installation of additional control equipment. In such a case, the owner or operator shall obtain a supplemental permit prior to the initiation of construction, installation, or alteration of such additional control equipment.

g. The issuance of a permit (approval to construct) shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions of the SIP and any other requirement under local, state or federal law.

22.3(4) *Denial of a permit.*

a. When an application for a construction permit is denied, the applicant shall be notified in writing of the reasons therefor. A denial shall be without prejudice to the right of the applicant to file a further application after revisions are made to meet the objections specified as reasons for the denial.

b. The department may deny an application based upon the applicant's failure to provide a signed statement of the applicant's legal entitlement to install and operate equipment covered by the permit application on the property identified in the permit application.

22.3(5) *Modification of a permit.* The director may, after public notice of such decision, modify a condition of approval of an existing permit for a major stationary source or an emission limit contained in an existing permit for a major stationary source if necessary to attain or maintain an ambient air quality standard, or to mitigate excessive deposition of mercury.

22.3(6) *Limits on hazardous air pollutants.* The department may limit a source's hazardous air pollutant potential to emit, as defined in 567—24.100(455B), in the source's construction permit for the purpose of establishing federally enforceable limits on the source's hazardous air pollutant potential to emit.

22.3(7) *Revocation of a permit.* The department may revoke a permit upon obtaining knowledge that a permit holder has lost legal entitlement to use the property identified in the permit to install and operate equipment covered by the permit, upon notice that the property owner does not wish to have continued the operation of the permitted equipment, or upon notice that the owner of the permitted equipment no longer wishes to retain the permit for future operation.

22.3(8) *Ownership change of permitted equipment.* The new owner shall notify the department in writing no later than 30 days after the change in ownership of equipment covered by a construction permit pursuant to 567—22.1(455B). The notification to the department shall be mailed to the Air Quality Bureau, Iowa Department of Natural Resources, 502 East 9th Street, Des Moines, Iowa 50319, and shall include the following information:

- a. The date of ownership change;
- b. The name, address and telephone number of the responsible official, the contact person and the owner of the equipment both before and after ownership change; and
- c. The construction permit number of the equipment changing ownership.

[ARC 7951C, IAB 5/15/24, effective 6/19/24]

567—22.4(455B) Major stationary sources located in areas designated attainment or unclassified (PSD). As applicable, the owner or operator of a stationary source shall comply with the rules for new source review (NSR) for the PSD program as set forth in 567—Chapter 33. An owner or operator required to apply for a construction permit under this rule shall submit all required fees as required in 567—Chapter 30.

[ARC 7951C, IAB 5/15/24, effective 6/19/24]

567—22.5(455B) Major stationary sources located in areas designated nonattainment. As applicable, the owner or operator of a stationary source shall comply with the requirements for the nonattainment major NSR program as set forth in 567—31.20(455B). An owner or operator required to apply for a construction permit under this rule shall submit all required fees as required in 567—Chapter 30.

[ARC 7951C, IAB 5/15/24, effective 6/19/24]

567—22.6 Reserved.

567—22.7(455B) Alternative emission control program (bubble concept).

22.7(1) Applicability. The owner or operator of any source located in an area with attainment or unclassified status (as published at 40 CFR Section 81.316) or located in an area with an approved SIP demonstrating attainment by the statutory deadline may apply for an alternative set of emission limits if:

- a. The applicant is presently in compliance with EPA-approved SIP requirements, or
- b. The applicant is subject to a consent order to meet an EPA-approved compliance schedule and the final compliance date will not be delayed by the use of alternative emission limits.

Emission limits for individual emission points included in 567—23.3(455B) (except 23.3(2) “d,” 23.3(2) “b”(3), and 23.3(3) “a”(3)) and 567—23.4(455B) (except 23.4(12) “b” and 23.4(6)) may be replaced by alternative emission limits. Under this rule, less stringent control limits where costs of emission control are high may be allowed in exchange for more stringent control limits where costs of control are less expensive.

22.7(2) Demonstration requirements. The applicant for the alternative emission control program shall have the burden of demonstrating that:

- a. The alternative emission control program will not interfere with the attainment and maintenance of ambient air quality standards, including the reasonable further progress or prevention of significant deterioration requirements of the Act;
- b. The alternative emission limits are equivalent to existing emission limits in pollution reduction, enforceability, and environmental impact (in the case of a particulate nonattainment area, the difference between the allowable emission rate and the actual emission rate, as of January 1, 1978, cannot be credited in the emissions tradeoff);
- c. The pollutants being exchanged are comparable and within the same pollutant category;
- d. Hazardous air pollutants designated in 40 CFR Part 61, as adopted by reference in 23.1(3), will not be exchanged for nonhazardous air pollutants;
- e. The alternative program will not result in any delay in compliance by any source. Specific situations may require additional demonstration as specified in 44 FR 71780-71788, December 11, 1979, or as requested by the director;
- f. The owner or operator of any facility applying for an alternative emission control program that involves the trade-off of sulfur dioxide emissions shall install, calibrate, maintain and operate continuous sulfur dioxide monitoring equipment consistent with EPA reference methods (40 CFR Part 60, Appendix B). The equipment shall be operational within three months of EPA approval of an alternative emission control program.

22.7(3) Approval process.

a. The director shall review all alternative emission control program proposals and shall make recommendations on all completed demonstrations to the commission.

b. After receiving recommendations from the director and public comments made available through the hearing process, the commission may approve or disapprove the alternative emission control program proposal.

c. If approved by the commission, the program will be forwarded to the EPA regional administrator as a revision to the SIP. The alternative emission control program must receive the approval of the EPA regional administrator prior to becoming effective.

[ARC 7951C, IAB 5/15/24, effective 6/19/24]

567—22.8(455B) Permit by rule.

22.8(1) Permit by rule for spray booths. Spray booths that comply with the requirements contained in this rule will be deemed to be in compliance with the requirements to obtain an air construction permit and an air operating permit. Spray booths that comply with this rule will be considered to have federally enforceable limits so that their potential emissions are less than the major source limits for regulated air pollutants and hazardous air pollutants as defined in 567—24.100(455B). An owner or operator required to apply for a permit by rule under this subrule shall submit fees as required in 567—Chapter 30.

a. Definition. “Sprayed material” is material applied by spray equipment when used in a surface coating process in a spray booth, including but not limited to paint, solvents, and mixtures of paint and solvents. Powder coatings applied in an indoor-vented spray booth equipped with filters or overspray powder recovery systems are not considered sprayed material for purposes of this rule.

b. Facilities that facility-wide spray one gallon per day or less of sprayed material are exempt from all other requirements in 567—Chapter 22, except that they must submit the certification in 22.8(1)“e” to the department and keep records of daily sprayed material use. Any spray booth or associated equipment for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred after October 23, 2013, shall use sprayed material with a maximum lead content of 0.35 pounds or less per gallon if the booth or associated equipment is subject to the following NESHAP: 40 CFR Part 63, Subpart HHHHHH or Subpart XXXXXX. Any spray booth or associated equipment for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred after October 23, 2013, that is not subject to the NESHAP or is otherwise exempt from the NESHAP shall use sprayed material with a maximum lead content of 0.02 pounds or less per gallon. The owner or operator must keep the records of daily sprayed material use for 18 months from the date to which the records apply and shall keep safety data sheets (SDS) or equivalent records for at least two calendar years to demonstrate that the sprayed materials contain lead at less than the exemption thresholds. The owner or operator must also certify that the facility is in compliance with or otherwise exempt from the federal regulations specified in 22.8(1)“e.”

c. Facilities that facility-wide spray more than one gallon per day but never more than three gallons per day are exempt from all other requirements in 567—Chapter 22, except that they must submit the certification in 22.8(1)“e” to the department, keep records of daily sprayed material use, and vent emissions from a spray booth(s) through a stack(s) that is at least 22 feet tall, measured from ground level. Any spray booth or associated equipment for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred after October 23, 2013, shall use sprayed material with a maximum lead content of 0.35 pounds or less per gallon if the booth or associated equipment is subject to the following NESHAP: 40 CFR Part 63, Subpart HHHHHH or Subpart XXXXXX. Any spray booth or associated equipment for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred after October 23, 2013, that is not subject to the NESHAP or is otherwise exempt from the NESHAP shall use sprayed material with a maximum lead content of 0.02 pounds or less per gallon. The owner or operator must keep the records of daily sprayed material use for 18 months from the date to which the records apply and shall keep SDS or equivalent records for at least two calendar years to demonstrate that the sprayed materials contain lead at less than the exemption thresholds. The owner or operator must also certify that the facility is in compliance with or otherwise exempt from the federal regulations specified in 22.8(1)“e.”

d. Facilities that facility-wide spray more than three gallons per day are not eligible to use the permit by rule for spray booths and must apply for a construction permit as required by 22.1(1) and 22.1(3), unless otherwise exempt.

e. Certification. Facilities that claim to be permitted by provisions of this rule must submit to the department a written notification as directed by the department, certifying that the facility meets the following conditions:

- (1) All spray booths and associated equipment are in compliance with the provisions of 22.8(1);
- (2) All spray booths and associated equipment are in compliance with all applicable requirements including, but not limited to, the allowable particulate emission rate for painting and surface coating operations of 0.01 gr/scf of exhaust gas as specified in 567—subrule 23.4(13); and
- (3) All spray booths and associated equipment currently are or will be in compliance with or otherwise exempt from the NESHAP for paint stripping and miscellaneous surface coating at area sources (40 CFR Part 63, Subpart HHHHHH) and the NESHAP for metal fabricating and finishing at area sources (40 CFR Part 63, Subpart XXXXXX) by the applicable NESHAP compliance dates.

22.8(2) Reserved.

[ARC 7951C, IAB 5/15/24, effective 6/19/24]

567—22.9(455B) Special requirements for visibility protection.

22.9(1) to **22.9(3)** Reserved.

22.9(4) Notification. For the purpose of the regional haze program under 40 CFR Section 51.308, as amended through January 10, 2017, the department shall notify in writing the owner, operator or designated representative of a source of the department's determination that the source may cause or contribute to visibility impairment in any mandatory Class I area listed in 40 CFR Part 81, Subpart D, as amended through October 5, 1989.

22.9(5) Analysis. The owner, operator, or designated representative of a source notified pursuant to 22.9(4) shall prepare and submit an analysis to the department after receipt of written notification by the department that an analysis is required.

22.9(6) Control technology implementation. Following the department's review of the analysis submitted pursuant to 22.9(5), an owner or operator of a source notified pursuant to 22.9(4) shall:

- a. Submit all necessary permit applications to achieve the emissions requirements established following the completion of analysis performed in accordance with 22.9(5).
- b. Install, operate, and maintain the control technology as required by permits issued by the department.

[ARC 7951C, IAB 5/15/24, effective 6/19/24]

567—22.10(455B) Permitting requirements for country grain elevators, country grain terminal elevators, grain terminal elevators and feed mill equipment. The requirements of this rule apply only to country grain elevators, country grain terminal elevators, grain terminal elevators and feed mill equipment, as these terms are defined in 22.10(1). This rule does not apply to equipment located at grain processing plants or grain storage elevators, as "grain processing" and "grain storage elevator" are defined in 567—22.1(455B). Compliance with the requirements of this rule does not alleviate any affected person's duty to comply with any applicable state or federal regulations. In particular, the emission standards set forth in 567—Chapter 23, including the regulations for grain elevators contained in 40 CFR Part 60, Subpart DD (as adopted by reference in 567—paragraph 23.1(2) "ooo"), may apply. An owner or operator subject to this rule shall submit fees as required in 567—Chapter 30.

22.10(1) Definitions. For purposes of 567—22.10(455B), the following terms shall have the meanings indicated in this subrule.

"Country grain elevator" means any plant or installation at which grain is unloaded, handled, cleaned, dried, stored, or loaded and that meets the following criteria:

1. Receives more than 50 percent of its grain, as "grain" is defined in this subrule, from farmers in the immediate vicinity during harvest season;
2. Is not located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant.

"Country grain terminal elevator" means any plant or installation at which grain is unloaded, handled, cleaned, dried, stored, or loaded and that meets the following criteria:

1. Receives 50 percent or less of its grain, as "grain" is defined in this subrule, from farmers in the immediate vicinity during harvest season;
2. Has a permanent storage capacity of less than or equal to 2.5 million U.S. bushels, as "permanent storage capacity" is defined in this subrule;

3. Is not located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant.

“Feed mill equipment,” for purposes of 567—22.10(455B), means grain processing equipment that is used to make animal feed including, but not limited to, grinders, crackers, hammermills, and pellet coolers, and that is located at a country grain elevator, country grain terminal elevator or grain terminal elevator.

“Grain,” as set forth in Iowa Code section 203.1(9), means any grain for which the United States Department of Agriculture has established standards including, but not limited to, corn, wheat, oats, soybeans, rye, barley, grain sorghum, flaxseeds, sunflower seed, spelt (emmer), and field peas.

“Grain processing” means the same as defined in 567—22.1(455B).

“Grain storage elevator” means the same as defined in 567—22.1(455B).

“Grain terminal elevator,” for purposes of 567—22.10(455B), means any plant or installation at which grain is unloaded, handled, cleaned, dried, stored, or loaded and that meets the following criteria:

1. Receives 50 percent or less of its grain, as “grain” is defined in this subrule, from farmers in the immediate vicinity during harvest season;

2. Has a permanent storage capacity of more than 88,100 m³ (2.5 million U.S. bushels), as “permanent storage capacity” is defined in this subrule;

3. Is not located at an animal food manufacturer, pet food manufacturer, cereal manufacturer, brewery, or livestock feedlot;

4. Is not located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant.

“Permanent storage capacity” means grain storage capacity that is inside a building, bin, or silo.

22.10(2) Methods for determining potential to emit (PTE). The owner or operator of a country grain elevator, country grain terminal elevator, grain terminal elevator or feed mill equipment shall use the following methods for calculating the PTE for particulate matter (PM) and for particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM₁₀):

a. *Country grain elevators.* The owner or operator of a country grain elevator shall calculate the PTE for PM and PM₁₀ as specified in the definition of “potential to emit” in 567—22.1(455B), except that “maximum capacity” means the greatest amount of grain received at the country grain elevator during one calendar, 12-month period of the previous five calendar, 12-month periods, multiplied by an adjustment factor of 1.2. The owner or operator may make additional adjustments to the calculations for air pollution control of PM and PM₁₀ if the owner or operator submits the calculations to the department using the PTE calculation tool provided by the department, and only if the owner or operator fully implements the applicable air pollution control measures no later than March 31, 2009, or upon startup of the equipment, whichever event first occurs. Credit for the application of some best management practices, as specified in 22.10(3) or in a permit issued by the department, may also be used to make additional adjustments in the PTE for PM and PM₁₀ if the owner or operator submits the calculations to the department using the PTE calculation tool provided by the department, and only if the owner or operator fully implements the applicable best management practices no later than March 31, 2009, or upon startup of the equipment, whichever event first occurs.

b. *Country grain terminal elevators.* The owner or operator of a country grain terminal elevator shall calculate the PTE for PM and PM₁₀ as specified in the definition of “potential to emit” in 567—22.1(455B).

c. *Grain terminal elevators.* For purposes of the permitting and other requirements specified in 22.10(3), the owner or operator of a grain terminal elevator shall calculate the PTE for PM and PM₁₀ as specified in the definition of “potential to emit” in 567—22.1(455B). For purposes of determining whether the stationary source is subject to the PSD requirements set forth in 567—Chapter 33, or for determining whether the source is subject to the operating permit requirements set forth in 567—24.100(455B) through 567—24.300(455B), the owner or operator of a grain terminal elevator shall include fugitive emissions, as “fugitive emissions” is defined in 567—subrule 33.3(1) and in 567—24.100(455B), in the PTE calculation.

d. *Feed mill equipment.* The owner or operator of feed mill equipment, as “feed mill equipment” is defined in 22.10(1), shall calculate the PTE for PM and PM₁₀ for the feed mill equipment as specified in

the definition of “potential to emit” in 567—22.1(455B). For purposes of determining whether the stationary source is subject to the PSD requirements set forth in 567—Chapter 33, or for determining whether the stationary source is subject to the operating permit requirements set forth in 567—24.100(455B) through 567—24.300(455B), the owner or operator of feed mill equipment shall sum the PTE of the feed mill equipment with the PTE of the country grain elevator, country grain terminal elevator or grain terminal elevator.

22.10(3) *Classification and requirements for permits, emissions controls, recordkeeping and reporting for Group 1, Group 2, Group 3 and Group 4 grain elevators.* The requirements for construction permits, operating permits, emissions controls, recordkeeping and reporting for a stationary source that is a country grain elevator, country grain terminal elevator or grain terminal elevator are set forth in this subrule.

a. Group 1 facilities. A country grain elevator, country grain terminal elevator or grain terminal elevator may qualify as a Group 1 facility if the PTE at the stationary source is less than 15 tons of PM₁₀ per year, as PTE is specified in 22.10(2). For purposes of this paragraph, an “existing” Group 1 facility is one that commenced construction or reconstruction before February 6, 2008. A “new” Group 1 facility is one that commenced construction or reconstruction on or after February 6, 2008.

(1) Group 1 registration. The owner or operator of a Group 1 facility shall submit to the department a Group 1 registration, including PTE calculations, on forms provided by the department, certifying that the facility’s PTE is less than 15 tons of PM₁₀ per year. The owner or operator of an existing facility shall provide the Group 1 registration to the department on or before March 31, 2008. The owner or operator of a new facility shall provide the Group 1 registration to the department prior to initiating construction or reconstruction of a facility. The registration becomes effective upon the department’s receipt of the signed registration form and the PTE calculations.

1. If the owner or operator registers with the department as specified in 22.10(3) “a”(1), the owner or operator is exempt from the requirement to obtain a construction permit as specified under 22.1(1).

2. Upon department receipt of a Group 1 registration and PTE calculations, the owner or operator is allowed to add, remove and modify the emissions units or change throughput or operations at the facility without modifying the Group 1 registration, provided that the owner or operator calculates the PTE for PM₁₀ on forms provided by the department prior to making any additions to, removals of or modifications to equipment, and only if the facility continues to meet the emissions limits and operating limits (including restrictions on material throughput and hours of operation, if applicable, as specified in the PTE for PM₁₀ calculations) specified in the Group 1 registration.

3. If equipment at a Group 1 facility currently has an air construction permit issued by the department, that permit shall remain in full force and effect, and the permit shall not be invalidated by the subsequent submittal of a registration made pursuant to 22.10(3) “a”(1).

(2) Best management practices (BMP). The owner or operator of a Group 1 facility shall implement BMP for controlling air pollution at the facility and for limiting fugitive dust at the facility from crossing the property line. The owner or operator shall implement BMP according to the department manual, Best Management Practices (BMP) for Grain Elevators (December 2007; revised July 15, 2014), as adopted by the commission on January 15, 2008, and July 15, 2014, and adopted by reference herein (available from the department, upon request, and on the department’s Internet website). No later than March 31, 2009, the owner or operator of an existing Group 1 facility shall fully implement applicable BMP, except that BMPs for grain vacuuming operations shall be fully implemented no later than September 10, 2014. Upon startup of equipment at the facility, the owner or operator of a new Group 1 facility shall fully implement applicable BMP.

(3) Recordkeeping. The owner or operator of a Group 1 facility shall retain a record of the previous five calendar years of total annual grain handled and shall calculate the facility’s potential PM₁₀ emissions annually by January 31 for the previous calendar year. These records shall be kept on site for a period of five years and shall be made available to the department upon request.

(4) Emissions increases. The owner or operator of a Group 1 facility shall calculate any emissions increases prior to making any additions to, removals of or modifications to equipment. If the owner or operator determines that PM₁₀ emissions at a Group 1 facility will increase to 15 tons per year or more, the

owner or operator shall comply with the requirements set forth for Group 2, Group 3 or Group 4 facilities, as applicable, prior to making any additions to, removals of or modifications to equipment.

(5) Changes to facility classification or permanent grain storage capacity. If the owner or operator of a Group 1 facility plans to change the facility's operations or increase the facility's permanent grain storage capacity to more than 2.5 million U.S. bushels, the owner or operator, prior to making any changes, shall reevaluate the facility's classification and the allowed method for calculating PTE to determine if any increases to the PTE for PM₁₀ will occur. If the proposed change will alter the facility's classification or will increase the facility's PTE for PM₁₀ such that the facility PTE increases to 15 tons per year or more, the owner or operator shall comply with the requirements set forth for Group 2, Group 3 or Group 4 facilities, as applicable, prior to making the change.

b. Group 2 facilities. A country grain elevator, country grain terminal elevator or grain terminal elevator may qualify as a Group 2 facility if the PTE at the stationary source is greater than or equal to 15 tons of PM₁₀ per year and is less than or equal to 50 tons of PM₁₀ per year, as PTE is specified in 22.10(2). For purposes of this paragraph, an "existing" Group 2 facility is one that commenced construction, modification or reconstruction before February 6, 2008. A "new" Group 2 facility is one that commenced construction or reconstruction on or after February 6, 2008.

(1) Group 2 permit for grain elevators. The owner or operator of a Group 2 facility may, in lieu of obtaining air construction permits for each piece of emissions equipment at the facility, submit to the department a completed Group 2 permit application for grain elevators, including PTE calculations, on forms provided by the department. Alternatively, the owner or operator may obtain an air construction permit as specified under 22.1(1). The owner or operator of an existing facility shall provide the appropriate completed Group 2 permit application for grain elevators or the appropriate construction permit applications to the department on or before March 31, 2008. The owner or operator of a new facility shall provide the appropriate, completed Group 2 permit application for grain elevators or the appropriate construction permit applications to the department prior to initiating construction or reconstruction of a facility.

1. Upon department issuance of a Group 2 permit to a facility, the owner or operator is allowed to add, remove and modify the emissions units at the facility, or change throughput or operations, without modifying the Group 2 permit, provided that the owner or operator calculates the PTE for PM₁₀ prior to making any additions to, removals of or modifications to equipment, and only if the facility continues to meet the emissions limits and operating limits (including restrictions on material throughput and hours of operation, if applicable, as specified in the PTE for PM₁₀ calculations) specified in the Group 2 permit.

2. If a Group 2 facility currently has an air construction permit issued by the department, that permit shall remain in full force and effect, and the permit shall not be invalidated by the subsequent submittal of a Group 2 permit application for grain elevators made pursuant to this rule. However, the owner or operator of a Group 2 facility may request that the department incorporate any equipment with a previously issued construction permit into the Group 2 permit for grain elevators. The department will grant such requests on a case-by-case basis. If the department grants the request to incorporate previously permitted equipment into the Group 2 permit for grain elevators, the owner or operator of the Group 2 facility is responsible for requesting that the department rescind any previously issued construction permits.

(2) BMP. The owner or operator shall implement BMP, as specified in the Group 2 permit, for controlling air pollution at the source and for limiting fugitive dust at the source from crossing the property line. If the department revises the BMP requirements for Group 2 facilities after a facility is issued a Group 2 permit, the owner or operator of the Group 2 facility may request that the department modify the facility's Group 2 permit to incorporate the revised BMP requirements. The department will issue permit modifications to incorporate BMP revisions on a case-by-case basis. No later than March 31, 2009, the owner or operator of an existing Group 2 facility shall fully implement BMP, as specified in the Group 2 permit. Upon startup of equipment at the facility, the owner or operator of a new Group 2 facility shall fully implement BMP, as specified in the Group 2 permit.

(3) Recordkeeping. The owner or operator of a Group 2 facility shall retain all records as specified in the Group 2 permit.

(4) Emissions inventory. The owner or operator of a Group 2 facility shall submit an emissions inventory for the facility for all regulated air pollutants as specified under 567—subrule 21.1(3).

(5) Emissions increases. The owner or operator of a Group 2 facility shall calculate any emissions increases prior to making any additions to, removals of or modifications to equipment. If the owner or operator determines that potential PM₁₀ emissions at a Group 2 facility will increase to more than 50 tons per year, the owner or operator shall comply with the requirements set forth for Group 3 or Group 4 facilities, as applicable, prior to making any additions to, removals of or modifications to equipment.

(6) Changes to facility classification or permanent grain storage capacity. If the owner or operator of a Group 2 facility plans to change the facility's operations or increase the facility's permanent grain storage capacity to more than 2.5 million U.S. bushels, the owner or operator, prior to making any changes, shall reevaluate the facility's classification and the allowed method for calculating PTE to determine if any increases to the PTE for PM₁₀ will occur. If the proposed change will increase the facility's PTE for PM₁₀ such that the facility PTE increases to more than 50 tons per year, the owner or operator shall comply with the requirements set forth for Group 3 or Group 4 facilities, as applicable, prior to making the change.

c. Group 3 facilities. A country grain elevator, country grain terminal elevator or grain terminal elevator may qualify as a Group 3 facility if the PTE for PM₁₀ at the stationary source is greater than 50 tons per year, but is less than 100 tons of PM₁₀ per year, as PTE is specified in 22.10(2). For purposes of this paragraph, an "existing" Group 3 facility is one that commenced construction, modification or reconstruction before February 6, 2008. A "new" Group 3 facility is one that commenced construction or reconstruction on or after February 6, 2008.

(1) Air construction permit. The owner or operator of a Group 3 facility shall obtain the required construction permits as specified under 22.1(1). The owner or operator of an existing facility shall provide the construction permit applications, as specified in 22.1(3), to the department on or before March 31, 2008. The owner or operator of a new facility shall obtain the required permits, as specified in 22.1(1), from the department prior to initiating construction or reconstruction of a facility.

(2) Permit conditions. Construction permit conditions for a Group 3 facility shall include, but are not limited to, the following:

1. The owner or operator shall implement BMP, as specified in the permit, for controlling air pollution at the source and for limiting fugitive dust at the source from crossing the property line. If the department revises the BMP requirements for Group 3 facilities after a facility is issued a permit, the owner or operator of the Group 3 facility may request that the department modify the facility's permit to incorporate the revised BMP requirements. The department will issue permit modifications to incorporate BMP revisions on a case-by-case basis.

2. The owner or operator shall retain all records as specified in the permit.

- (3) Emissions inventory. The owner or operator shall submit an emissions inventory for the facility for all regulated air pollutants as specified under 567—subrule 21.1(3).

- (4) Changes to facility classification or permanent grain storage capacity. If the owner or operator of a Group 3 facility plans to change its operations or increase the facility's permanent grain storage capacity to more than 2.5 million U.S. bushels, the owner or operator, prior to making any changes, shall reevaluate the facility's classification and the allowed method for calculating PTE to determine if any increases to the PTE for PM₁₀ will occur. If the proposed change will alter the facility's classification or will increase the facility's PTE for PM₁₀ such that the facility PTE increases to greater than or equal to 100 tons per year, the owner or operator shall comply with the requirements set forth for Group 4 facilities, as applicable, prior to making the change.

- (5) PSD applicability. If the PTE for PM or PM₁₀ at the Group 3 facility is greater than or equal to 250 tons per year, the owner or operator shall comply with requirements specified in 567—Chapter 33, as applicable. The owner or operator of a Group 3 facility that is a grain terminal elevator shall include fugitive emissions, as "fugitive emissions" is defined in 567—subrule 33.3(1), in the PTE calculation for determining PSD applicability.

(6) Recordkeeping. The owner or operator shall keep the records of annual grain handled at the facility and annual PTE for PM and PM₁₀ emissions on site for a period of five years, and the records shall be made available to the department upon request.

d. Group 4 facilities. A facility qualifies as a Group 4 facility if the facility is a stationary source with a PTE equal to or greater than 100 tons of PM₁₀ per year, as PTE is specified in 22.10(2). For purposes of this paragraph, an “existing” Group 4 facility is one that commenced construction, modification or reconstruction before February 6, 2008. A “new” Group 4 facility is one that commenced construction or reconstruction on or after February 6, 2008.

(1) Air construction permit. The owner or operator of a Group 4 facility shall obtain the required construction permits as specified under 22.1(1). The owner or operator of an existing facility shall provide the construction permit applications, as specified by 22.1(3), to the department on or before March 31, 2008. The owner or operator of a new facility shall obtain the required permits, as specified by 22.1(1), from the department prior to initiating construction or reconstruction of a facility.

(2) Permit conditions. Construction permit conditions for a Group 4 facility shall include, but are not limited to, the following:

1. The owner or operator shall implement BMP, as specified in the permit, for controlling air pollution at the facility and for limiting fugitive dust at the facility from crossing the property line. If the department revises the BMP requirements for Group 4 facilities after a facility is issued a permit, the owner or operator of the Group 4 facility may request that the department modify the facility’s permit to incorporate the revised BMP requirements. The department will issue permit modifications to incorporate BMP revisions on a case-by-case basis.

2. The owner or operator shall retain all records as specified in the permit.

(3) PSD applicability. If the PTE for PM or PM₁₀ at the facility is equal to or greater than 250 tons per year, the owner or operator shall comply with requirements specified in 567—Chapter 33, as applicable. The owner or operator of a Group 4 facility that is a grain terminal elevator shall include fugitive emissions, as “fugitive emissions” is defined in 567—subrule 33.3(1), in the PTE calculation for determining PSD applicability.

(4) Recordkeeping. The owner or operator shall keep the records of annual grain handled at the facility and annual PTE for PM and PM₁₀ emissions on site for a period of five years, and the records shall be made available to the department upon request.

(5) Operating permits. The owner or operator of a Group 4 facility shall apply for an operating permit for the facility if the facility’s annual PTE for PM₁₀ is equal to or greater than 100 tons per year as specified in 567—24.100(455B) through 567—24.300(455B). The owner or operator of a Group 4 facility that is a grain terminal elevator shall include fugitive emissions in the calculations to determine if the PTE for PM₁₀ is greater than or equal to 100 tons per year. The owner or operator also shall submit annual emissions inventories and fees, as specified in 567—22.106(455B).

22.10(4) Feed mill equipment. This subrule sets forth the requirements for construction permits, operating permits, and emissions inventories for an owner or operator of feed mill equipment as “feed mill equipment” is defined in 22.10(1). For purposes of this subrule, the owner or operator of “existing” feed mill equipment shall have commenced construction or reconstruction of the feed mill equipment before February 6, 2008. The owner or operator of “new” feed mill equipment shall have commenced construction or reconstruction of the feed mill equipment on or after February 6, 2008.

a. Air construction permit. The owner or operator of feed mill equipment shall obtain an air construction permit as specified under 22.1(1) for each piece of feed mill equipment that emits a regulated air pollutant. The owner or operator of “existing” feed mill equipment shall provide the appropriate permit applications to the department on or before March 31, 2008. The owner or operator of “new” feed mill equipment shall provide the appropriate permit applications to the department prior to initiating construction or reconstruction of feed mill equipment.

b. Emissions inventory. The owner or operator shall submit an emissions inventory for the feed mill equipment for all regulated air pollutants as specified under 567—subrule 21.1(3).

c. Operating permits. The owner or operator shall sum the PTE of the feed mill equipment with the PTE of the equipment at the country grain elevator, country grain terminal elevator or grain terminal

elevator, as PTE is specified in 22.10(2), to determine if operating permit requirements specified in 567—24.100(455B) through 567—24.300(455B) apply to the stationary source. If the operating permit requirements apply, then the owner or operator shall apply for an operating permit as specified in 567—24.100(455B) through 567—24.300(455B). The owner or operator also shall begin submitting annual emissions inventories and fees, as specified under 567—22.106(455B).

d. PSD applicability. For purposes of determining whether the stationary source is subject to the PSD requirements set forth in 567—Chapter 33, the owner or operator shall sum the PTE of the feed mill equipment with the PTE of the equipment at the country grain elevator, country grain terminal elevator or grain terminal elevator. If the PTE for PM or PM₁₀ for the stationary source is equal to or greater than 250 tons per year, the owner or operator shall comply with requirements for PSD specified in 567—Chapter 33, as applicable.

[ARC 7951C, IAB 5/15/24, effective 6/19/24]

567—22.11(455B) Ambient air quality standards. The state of Iowa ambient air quality standards shall be the National Primary and Secondary Ambient Air Quality Standards as published in 40 CFR Part 50 (1972) and as amended at 38 Federal Register (FR) 22384 (September 14, 1973), 43 FR 46258 (October 5, 1978), 44 FR 8202, 8220 (February 9, 1979), 52 FR 24634-24669 (July 1, 1987), 62 FR 38651-38760, 38855-38896 (July 18, 1997), 71 FR 61144-61233 (October 17, 2006), 73 FR 16436-16514 (March 27, 2008), 73 FR 66964-67062 (November 12, 2008), 75 FR 6474-6537 (February 9, 2010), 75 FR 35520-35603 (June 22, 2010), 78 FR 3086-3287 (January 15, 2013), and 80 FR 65291-65468 (October 26, 2015). The department shall implement these rules in a time frame and schedule consistent with implementation schedules in federal laws and regulations.

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These rules are intended to implement Iowa Code sections 455B.133 and 455B.134.

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- [Filed ARC 2949C (Notice ARC 2799C, IAB 11/9/16), IAB 2/15/17, effective 3/22/17]
- [Filed ARC 3440C (Notice ARC 2895C, IAB 1/18/17; Amended Notice ARC 3251C, IAB 8/16/17), IAB 11/8/17, effective 12/13/17]
- [Filed ARC 3679C (Notice ARC 3520C, IAB 12/20/17), IAB 3/14/18, effective 4/18/18]
- [Editorial change: IAC Supplement 5/9/18]
- [Filed ARC 4335C (Notice ARC 4178C, IAB 12/19/18), IAB 3/13/19, effective 4/17/19]
- [Filed ARC 5051C (Notice ARC 4961C, IAB 3/11/20), IAB 6/17/20, effective 7/22/20]
- [Filed ARC 5898C (Notice ARC 5678C, IAB 6/16/21), IAB 9/8/21, effective 10/13/21]
- [Filed ARC 6271C (Notice ARC 6144C, IAB 1/12/22), IAB 4/6/22, effective 5/11/22]
- [Filed ARC 6873C (Notice ARC 6631C, IAB 11/2/22), IAB 2/8/23, effective 3/15/23]
- [Filed ARC 7951C (Notice ARC 7228C, IAB 12/27/23), IAB 5/15/24, effective 6/19/24]

◇ Two or more ARCs

- ¹ Effective date of 22.1(455B) [DEQ, 3.1] delayed by the Administrative Rules Review Committee 70 days from June 21, 1978. The Administrative Rules Review Committee at the August 15, 1978 meeting delayed 22.1 [DEQ, 3.1] under provisions of 67GA, SF244, §19. (See HJR 6, 1/22/79).
- ² Effective date of 22.100(455B), definition of “12-month rolling period”; 22.200(455B); 22.201(1)“a,” “b,”; 22.201(2)“a”; 22.206(2)“c,” delayed 70 days by the Administrative Rules Review Committee at its meeting held October 10, 1995; delay lifted by this Committee December 13, 1995, effective December 14, 1995.
- ³ Effective date of 22.300 delayed 70 days by the Administrative Rules Review Committee at its meeting held June 11, 1996; delay lifted by this Committee at its meeting held June 12, 1996, effective June 12, 1996.
- ⁴ Effective date of 22.1(2), unnumbered introductory paragraphs and paragraphs “g” and “i,” delayed 70 days by the Administrative Rules Review Committee at its meeting held March 9, 2001.

CHAPTER 23
AIR EMISSION STANDARDS

[Prior to 7/1/83, DEQ Ch 4]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—23.1(455B) Emission standards.

23.1(1) *In general.* The federal standards of performance for new stationary sources (new source performance standards) shall be applicable as specified in 23.1(2). The federal standards for hazardous air pollutants (national emission standards for hazardous air pollutants) shall be applicable as specified in 23.1(3). The federal standards for hazardous air pollutants for source categories (national emission standards for hazardous air pollutants for source categories) shall be applicable as specified in 23.1(4). The federal emission guidelines (emission guidelines) shall be applicable as specified in 23.1(5). Compliance with emission standards specified elsewhere in this chapter shall be in accordance with 567—Chapter 21.

23.1(2) *New source performance standards.* The federal standards of performance for new stationary sources, as defined in 40 Code of Federal Regulations Part 60 as amended or corrected through June 28, 2023, are adopted by reference, except §60.530 through §60.539b (Part 60, Subpart AAA), and shall apply to the following affected facilities. The corresponding 40 CFR Part 60 subpart designation is provided in the table below. A different date for adoption by reference may be included with the subpart designation in the table. Reference test methods (Appendix A), performance specifications (Appendix B), determination of emission rate change (Appendix C), quality assurance procedures (Appendix F) and the general provisions (Subpart A) of 40 CFR Part 60 also apply to the affected facilities.

**Federal New Source Performance Standards (NSPS)
Adopted by Reference in 23.1(2)**

23.1(2) paragraph	Affected source category	40 CFR Part 60 Subpart	Date of adoption (if different than 23.1(2) introductory paragraph) or note if federal standard is not adopted
a	Fossil fuel-fired steam generators	D	1/20/2011
b	Incinerators	E	N/A
c	Portland cement plants	F	N/A
d	Nitric acid plants	G	N/A
e	Sulfuric acid plants	H	N/A
f	Hot mix asphalt plants	I	N/A
g	Petroleum refineries	J - Ja	Not adopted. No facilities in Iowa. Paragraph reserved.
h	Secondary lead smelters	L	Not adopted. No facilities in Iowa. Paragraph reserved.
i	Secondary brass and bronze ingot production plants	M	N/A
j	Iron and steel plants	N	N/A
k	Sewage treatment plants	O and Subpart E of 40 CFR 503	N/A
l	Steel plants	AA	N/A
m	Primary copper smelters	P	Not adopted. No facilities in Iowa. Paragraph reserved.

23.1(2) paragraph	Affected source category	40 CFR Part 60 Subpart	Date of adoption (if different than 23.1(2) introductory paragraph) or note if federal standard is not adopted
n	Primary zinc smelters	Q	Not adopted. No facilities in Iowa. Paragraph reserved.
o	Primary lead smelters	R	Not adopted. No facilities in Iowa. Paragraph reserved.
p	Primary aluminum reduction plants	S	Not adopted. No facilities in Iowa. Paragraph reserved.
q	Wet process phosphoric acid plants in the phosphate fertilizer industry	T	N/A
r	Superphosphoric acid plants in the phosphate fertilizer industry	U	N/A
s	Diammonium phosphate plants in the phosphate fertilizer industry	V	N/A
t	Triple super phosphate plants in the phosphate fertilizer industry	W	N/A
u	Granular triple superphosphate storage facilities in the phosphate fertilizer industry	X	N/A
v	Coal preparation plants	Y	N/A
w	Ferroalloy production	Z	N/A
x	Kraft pulp mills	BB	February 27, 2014
y	Lime manufacturing plants	HH	N/A
z	Electric utility steam generating units	Da	January 20, 2011
aa	Stationary gas turbines	GG	N/A
bb	Petroleum storage vessels	K	N/A
cc	Petroleum storage vessels	Ka	N/A
dd	Glass manufacturing plants	CC	N/A
ee	Automobile and light-duty truck surface coating operations at assembly plants	MM	N/A
ff	Ammonium sulfate manufacture	PP	N/A
gg	Surface coating of metal furniture	EE	N/A
hh	Lead-acid battery manufacturing plants	KK	February 27, 2014
ii	Phosphate rock plants	NN	N/A
jj	Graphic arts industry	QQ	N/A
kk	Industrial surface coating	SS	N/A
ll	Metal coil surface coating	TT	N/A
mm	Asphalt processing and asphalt roofing manufacturing	UU	N/A

23.1(2) paragraph	Affected source category	40 CFR Part 60 Subpart	Date of adoption (if different than 23.1(2) introductory paragraph) or note if federal standard is not adopted
nn	Equipment leaks of volatile organic compounds (VOC) in the synthetic organic chemicals manufacturing industry	VV and VVa	N/A
oo	Beverage can surface coating	WW	N/A
pp	Bulk gasoline terminals	XX	N/A
qq	Pressure sensitive tape and label surface coating operations	RR	N/A
rr	Metallic mineral processing plants	LL	N/A
ss	Synthetic fiber production facilities	HHH	N/A
tt	Equipment leaks of VOC in petroleum refineries	GGG	N/A
uu	Flexible vinyl and urethane coating and printing	FFF	N/A
vv	Petroleum dry cleaners	JJJ	N/A
ww	Electric arc furnaces and argon-oxygen decarburization vessels constructed after August 17, 1983	AAa	N/A
xx	Wool fiberglass insulation manufacturing plants	PPP	N/A
yy	Iron and steel plants	Na	N/A
zz	Equipment leaks of VOC from on-shore natural gas processing plants	KKK	N/A
aaa	On-shore natural gas processing: SO ₂ emissions	LLL	N/A
bbb	Nonmetallic mineral processing plants	OOO	N/A
ccc	Industrial-commercial-institutional steam generating units	Db	January 20, 2011
ddd	Volatile organic liquid storage vessels	Kb	N/A
eee	Rubber tire manufacturing plants	BBB	N/A
fff	Industrial surface coating: surface coating of plastic parts for business machines	TTT and TTTa	N/A
ggg	VOC emissions from petroleum refinery wastewater systems	QQQ	N/A
hhh	Magnetic tape coating facilities	SSS	N/A
iii	Polymeric coating of supporting substrates	VVV	N/A

23.1(2) paragraph	Affected source category	40 CFR Part 60 Subpart	Date of adoption (if different than 23.1(2) introductory paragraph) or note if federal standard is not adopted
jjj	VOC emissions from synthetic organic chemical manufacturing industry air oxidation unit processes	III	N/A
kkk	VOC emissions from synthetic organic chemical manufacturing industry distillation operations	NNN	N/A
lll	Small industrial-commercial-institutional steam generating units	Dc	January 20, 2011
mmm	VOC emissions from the polymer manufacturing industry	DDD	N/A
nnn	Municipal waste combustors	Ea	N/A
ooo	Grain elevators	DD	N/A
ppp	Mineral processing plants	UUU	N/A
qqq	VOC emissions from synthetic organic chemical manufacturing industry reactor processes	RRR	N/A
rrr	Municipal solid waste landfills, as defined by 40 CFR 60.751	WWW	April 10, 2000
sss	Municipal waste combustors	Eb	N/A
ttt	Hospital/medical/infectious waste incinerators (HMIWI)	Ec (partial adoption)*	N/A
uuu	New small municipal waste combustion units	AAAA	N/A
vvv	Commercial and industrial solid waste incineration	CCCC	December 1, 2000
www	Other solid waste incineration (OSWI) units	EEEE	N/A
xxx	Reserved	N/A	N/A
yyy	Stationary compression ignition internal combustion engines	IIII	N/A
zzz	Stationary spark ignition internal combustion engines	JJJJ	N/A
aaaa	Stationary combustion turbines	KKKK	N/A
bbbb	Nitric acid plants	Ga	N/A
cccc	Sewage sludge incineration units	LLLL	N/A

*The provisions in 60.50c(a) through (h) (exceptions to Subpart Ec requirements) and 60.51(c) (Subpart Ec definitions) are adopted by reference. No other provisions of Subpart Ec are adopted.

23.1(3) Emission standards for hazardous air pollutants. The federal standards for emissions of hazardous air pollutants, 40 Code of Federal Regulations Part 61 as amended or corrected through October 7, 2020, and 40 CFR Part 503 as adopted on August 4, 1999, are adopted by reference, except 40 CFR §61.20 to §61.26, §61.90 to §61.97, §61.100 to §61.108, §61.120 to §61.127, §61.190 to §61.193, §61.200

to §61.205, §61.220 to §61.225, and §61.250 to §61.256, and shall apply to the following affected pollutants and facilities and activities listed below. The corresponding 40 CFR Part 61 subpart designation is provided in the table below. A different date for adoption by reference may be included with the subpart designation in the table. Reference test methods (Appendix B), compliance status information requirements (Appendix A), quality assurance procedures (Appendix C) and the general provisions (Subpart A) of Part 61 also apply to the affected activities or facilities.

Federal Emission Standards for Hazardous Air Pollutants (NESHAP)

Adopted by Reference in 23.1(3)

23.1(3) paragraph	Affected source category	40 CFR Part 61 Subpart Adopted	Date of adoption (if different than 23.1(3) introductory paragraph) or note if standard is not adopted
a	Asbestos	M	N/A
b	Beryllium	C	Not adopted. No facilities in Iowa. Paragraph reserved.
c	Beryllium rocket motor firing	D	Not adopted. No facilities in Iowa. Paragraph reserved.
d	Mercury	E	N/A
e	Vinyl chloride	F	N/A
f	Equipment leaks of benzene (fugitive emission sources)	J	N/A
g	Equipment leaks of volatile hazardous air pollutants (fugitive emission sources)	V	N/A
h	Inorganic arsenic emissions from arsenic trioxide and metallic arsenic production facilities	P	Not adopted. No facilities in Iowa. Paragraph reserved.
i	Inorganic arsenic emissions from glass manufacturing plants	N	N/A
j	Inorganic arsenic emissions from primary copper smelters	O	Not adopted. No facilities in Iowa. Paragraph reserved.
k	Benzene emissions from coke by-product recovery plants	L	N/A
l	Benzene emissions from benzene storage vessels	Y	N/A
m	Benzene emissions from benzene transfer operations	BB	N/A
n	Benzene waste operations	FF	N/A

23.1(4) *Emission standards for hazardous air pollutants for source categories.* The federal standards for emissions of hazardous air pollutants for source categories, 40 Code of Federal Regulations Part 63 as amended or corrected through March 29, 2023, are adopted by reference, except those provisions that cannot be delegated to the states. The corresponding 40 CFR Part 63 subpart designation is provided in the table below. A different date for adoption by reference may be included with the subpart designation in the table. 40 CFR Part 63, Subpart B, incorporates the requirements of Clean Air Act Sections 112(g) and 112(j) and does not adopt standards for a specific affected facility. Test methods (Appendix A), sources

defined for early reduction provisions (Appendix B), and determination of the fraction biodegraded (Fbio) in the biological treatment unit (Appendix C) of Part 63 also apply to the affected activities or facilities.

For the purpose of this subrule and the rules in 567—Chapters 20 through 35, the following terms shall, unless otherwise noted, have the meaning indicated in this subrule.

“*Hazardous air pollutant*” or “*HAP*” means the same as “hazardous air pollutant” set forth in 567—24.100(455B).

“*Major source*” means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless a lesser quantity is established, or in the case of radionuclides, where different criteria are employed. “*Area source*” means any stationary source of hazardous air pollutants that is not a “major source.”

“*Maximum achievable control technology (MACT) emission limitation for existing sources*,” as this definition is set forth in 40 CFR Subpart B, section 63.51, is adopted by reference.

“*Maximum achievable control technology (MACT) emission limitation for new sources*,” as this definition is set forth in 40 CFR Subpart B, section 63.51, is adopted by reference.

“*Maximum achievable control technology (MACT) floor*,” as this definition is set forth in 40 CFR Subpart B, section 63.51, is adopted by reference.

23.1(4) “*a*,” general provisions (Subpart A) of Part 63, shall apply to owners or operators who are subject to subsequent subparts of 40 CFR Part 63 (except when otherwise specified in a particular subpart or in a relevant standard) as adopted by reference in the table below.

**Federal Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories
Adopted by Reference in 23.1(4)**

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
a	General provisions	A	N/A
b	Requirements for control technology determinations for major sources in accordance with Clean Air Act Sections 112(g) and 112(j)	B	N/A
c	Reserved	N/A	N/A
d	Compliance extensions for early reductions of hazardous air pollutants	D	N/A
e	Reserved	N/A	N/A
f	Emission standards for organic hazardous air pollutants from the synthetic chemical manufacturing industry	F	N/A
g	Emission standards for organic hazardous air pollutants from the synthetic organic chemical manufacturing industry for process vents, storage vessels, transfer operations, and wastewater	G	N/A

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
h	Emission standards for organic hazardous air pollutants for equipment leaks	H	N/A
i	Emission standards for organic hazardous air pollutants for certain processes subject to negotiated regulation for equipment leaks	I	N/A
j	Emission standards for hazardous air pollutants for polyvinyl chloride and copolymers production	Subparts J and HHHHHHH	Not adopted. No facilities in Iowa. Paragraph reserved.
k	Reserved	N/A	N/A
l	Emission standards for coke oven batteries	L	N/A
m	Perchloroethylene air emission standards for dry cleaning facilities	M	N/A
n	Emission standards for chromium emissions from hard and decorative chromium electroplating and chromium anodizing tanks	N	N/A
o	Emission standards for hazardous air pollutants for ethylene oxide commercial sterilization and fumigation operations	O	N/A
p	Reserved	N/A	N/A
q	Emission standards for hazardous air pollutants for industrial process cooling towers	Q	N/A
r	Emission standards for hazardous air pollutants for gasoline distribution: (Stage 1)	R	N/A
s	Emission standards for hazardous air pollutants for pulp and paper (noncombustion)	S	N/A
t	Emission standards for hazardous air pollutants: halogenated solvent cleaning	T	N/A
u	Emission standards for hazardous air pollutants: Group I polymers and resins	U	N/A
v	Reserved	N/A	N/A
w	Emission standards for hazardous air pollutants for epoxy resins	W	N/A

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
	production and nonnylon polyamides production		
x	National emission standards for hazardous air pollutants from secondary lead smelting	X	Not adopted. No facilities in Iowa. Paragraph reserved.
y	Emission standards for marine tank vessel loading operations	Y	N/A
z	Reserved	N/A	N/A
aa	Emission standards for hazardous air pollutants for phosphoric acid manufacturing	AA	N/A
ab	Emission standards for hazardous air pollutants for phosphate fertilizers production	BB	N/A
ac	National emission standards for hazardous air pollutants: petroleum refineries	CC	Not adopted. No facilities in Iowa. Paragraph reserved.
ad	Emission standards for hazardous air pollutants for off-site waste and recovery operations	DD	N/A
ae	Emission standards for magnetic tape manufacturing operations	EE	N/A
af	Reserved	N/A	N/A
ag	National emission standards for hazardous air pollutants for source categories: aerospace manufacturing and rework facilities	GG	N/A
ah	Emission standards for hazardous air pollutants for oil and natural gas production	HH	N/A
ai	Emission standards for hazardous air pollutants for shipbuilding and ship repair (surface coating) operations	II	Not adopted. No facilities in Iowa. Paragraph reserved.
aj	Emission standards for hazardous air pollutants for HAP emissions from wood furniture manufacturing operations	JJ	N/A
ak	Emission standards for hazardous air pollutants for the printing and publishing industry	KK	N/A

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
al	Emission standards for hazardous air pollutants for primary aluminum reduction plants	LL	Not adopted. No facilities in Iowa. Paragraph reserved.
am	Emission standards for hazardous air pollutants for chemical recovery combustion sources at kraft, soda, sulfite, and stand-alone semichemical pulp mills	MM	October 11, 2017
an	Reserved	N/A	N/A
ao	Emission standards for tanks—level 1	OO	N/A
ap	Emission standards for containers	PP	N/A
aq	Emission standards for surface impoundments	QQ	N/A
ar	Emission standards for individual drain systems	RR	N/A
as	Emission standards for closed vent systems, control devices, recovery devices and routing to a fuel gas system or a process	SS	N/A
at	Emission standards for equipment leaks—control level 1	TT	N/A
au	Emission standards for equipment leaks—control level 2 standards	UU	N/A
av	Emission standards for oil-water separators and organic-water separators	VV	N/A
aw	Emission standards for storage vessels (tanks)—control level 2	WW	N/A
ax	Emission standards for ethylene manufacturing process units: heat exchange systems and waste operations	XX	N/A
ay	Emission standards for hazardous air pollutants: generic maximum achievable control technology (generic MACT)	YY	October 8, 2014
az to bb	Reserved	N/A	N/A
bc	Emission standards for hazardous air pollutants for steel pickling—HCL process facilities and	CCC	Not adopted. No facilities in Iowa. Paragraph reserved.

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
	hydrochloric acid regeneration plants		
bd	Emission standards for hazardous air pollutants for mineral wool production	DDD	N/A
be	Emission standards for hazardous air pollutants from hazardous waste combustors	EEE	N/A
bf	Reserved	N/A	N/A
bg	Emission standards for hazardous air pollutants for pharmaceutical manufacturing	GGG	N/A
bh	Emission standards for hazardous air pollutants for natural gas transmission and storage	HHH	N/A
bi	Emission standards for hazardous air pollutants for flexible polyurethane foam production	III	N/A
bj	Emission standards for hazardous air pollutants: Group IV polymers and resins	JJJ	N/A
bk	Reserved	N/A	N/A
bl	Emission standards for hazardous air pollutants for Portland cement manufacturing operations	LLL	N/A
bm	Emission standards for hazardous air pollutants for pesticide active ingredient production	MMM	N/A
bn	Emission standards for hazardous air pollutants for wool fiberglass manufacturing	NNN	N/A
bo	Emission standards for hazardous air pollutants for amino/phenolic resins production	OOO	N/A
bp	Emission standards for hazardous air pollutants for polyether polyols production	PPP	N/A
bq	Emission standards for hazardous air pollutants for primary copper smelting	QQQ	Not adopted. No facilities in Iowa. Paragraph reserved.

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
br	Emission standards for hazardous air pollutants for secondary aluminum production	RRR	N/A
bs	Reserved	N/A	N/A
bt	Emission standards for hazardous air pollutants for primary lead smelting	TTT	Not adopted. No facilities in Iowa. Paragraph reserved.
bu	Emission standards for hazardous air pollutants for petroleum refineries: catalytic cracking units, catalytic reforming units, and sulfur recovery units	UUU	Not adopted. No facilities in Iowa. Paragraph reserved.
bv	Emission standards for hazardous air pollutants: publicly owned treatment works (POTW)	VVV	N/A
bw	Reserved	N/A	N/A
bx	Emission standards for hazardous air pollutants for ferroalloys production: ferromanganese and silicomanganese	XXX	Not adopted. No facilities in Iowa. Paragraph reserved.
by and bz	Reserved	N/A	N/A
ca	Emission standards for hazardous air pollutants: municipal solid waste landfills	AAAA	April 20, 2006
cb	Reserved	N/A	N/A
cc	Emission standards for hazardous air pollutants for the manufacturing of nutritional yeast	CCCC	N/A
cd	Emission standards for hazardous air pollutants for plywood and composite wood products (formerly plywood and particle board manufacturing)	DDDD	October 29, 2007
ce	Emission standards for hazardous air pollutants for organic liquids distribution (non-gasoline)	EEEE	July 17, 2008
cf	Emission standards for hazardous air pollutants for miscellaneous organic chemical (MON) manufacturing	FFFF	July 14, 2006

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
cg	Emission standards for hazardous air pollutants for solvent extraction for vegetable oil production	GGGG	N/A
ch	Emission standards for hazardous air pollutants for wet-formed fiberglass mat production	HHHH	N/A
ci	Emission standards for hazardous air pollutants for surface coating of automobiles and light-duty trucks	IIII	N/A
cj	Emission standards for hazardous air pollutants: paper and other web coating	JJJJ	N/A
ck	Emission standards for hazardous air pollutants for surface coating of metal cans	KKKK	N/A
cl	Reserved	N/A	N/A
cm	Emission standards for hazardous air pollutants for surface coating of miscellaneous metal parts and products	MMMM	N/A
cn	Emission standards for hazardous air pollutants: surface coating of large appliances	NNNN	N/A
co	Emission standards for hazardous air pollutants for printing, coating, and dyeing of fabrics and other textiles	OOOO	N/A
cp	Emission standards for surface coating of plastic parts and products	PPPP	N/A
cq	Emission standards for hazardous air pollutants for surface coating of wood building products	QQQQ	N/A
cr	Emission standards for hazardous air pollutants: surface coating of metal furniture	RRRR	N/A
cs	Emission standards for hazardous air pollutants: surface coating of metal coil	SSSS	N/A
ct	Emission standards for hazardous air pollutants for leather finishing operations	TTTT	N/A

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
cu	Emission standards for hazardous air pollutants for cellulose products manufacturing	UUUU	N/A
cv	Emission standards for hazardous air pollutants for boat manufacturing	VVVV	N/A
cw	Emission standards for hazardous air pollutants: reinforced plastic composites production	WWWW	N/A
cx	Emission standards for hazardous air pollutants: rubber tire manufacturing	XXXX	N/A
cy	Emission standards for hazardous air pollutants for stationary combustion turbines	YYYY	November 19, 2020
cz	Emission standards for stationary reciprocating internal combustion engines	ZZZZ	N/A
da	Emission standards for hazardous air pollutants for lime manufacturing plants	AAAAA	April 20, 2006
db	Emission standards for hazardous air pollutants: semiconductor manufacturing	BBBBB	N/A
dc	Emission standards for hazardous air pollutants for coke ovens: pushing, quenching, and battery stacks	CCCCC	N/A
dd	Emission standards for industrial, commercial and institutional boilers and process heaters	DDDDD	Not adopted. Paragraph reserved.
de	Emission standards for hazardous air pollutants for iron and steel foundries	EEEEE	N/A
df	Emission standards for hazardous air pollutants for integrated iron and steel manufacturing	FFFFF	July 13, 2006
dg	Emission standards for hazardous air pollutants: site remediation	GGGGG	November 29, 2006
dh	Emission standards for hazardous air pollutants for miscellaneous coating manufacturing	HHHHH	N/A

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
di	Emission standards for mercury emissions from mercury cell chlor-alkali plants	IIIII	N/A
dj	Emission standards for hazardous air pollutants for brick and structural clay products manufacturing	JJJJJ	Not adopted. No facilities in Iowa. Paragraph reserved.
dk	Emission standards for hazardous air pollutants for clay ceramics manufacturing	KKKKK	Not adopted. No facilities in Iowa. Paragraph reserved.
dl	Emission standards for hazardous air pollutants: asphalt processing and asphalt roofing manufacturing	LLLLL	N/A
dm	Emission standards for hazardous air pollutants: flexible polyurethane foam fabrication operations	MMMMM	N/A
dn	Emission standards for hazardous air pollutants: hydrochloric acid production	NNNNN	N/A
do	Reserved	N/A	N/A
dp	Emission standards for hazardous air pollutants: engine test cells/stands	PPPPP	N/A
dq	Emission standards for hazardous air pollutants for friction materials manufacturing facilities	QQQQQ	N/A
dr	Emission standards for hazardous air pollutants: taconite iron ore processing	RRRRR	Not adopted. No facilities in Iowa. Paragraph reserved.
ds	Emission standards for hazardous air pollutants for refractory products manufacturing	SSSSS	N/A
dt	Emission standards for hazardous air pollutants: primary magnesium refining	TTTTT	Not adopted. No facilities in Iowa. Paragraph reserved.
du and dv	Reserved	N/A	N/A
dw	Emission standards for hazardous air pollutants for hospital ethylene oxide sterilizer area sources	WWWWW	N/A
dx	Reserved	N/A	N/A

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
dy	Emission standards for hazardous air pollutants for electric arc furnace steelmaking area sources	YYYYYY	N/A
dz	Emission standards for hazardous air pollutants for iron and steel foundry area sources	ZZZZZ	N/A
ea	Reserved	N/A	N/A
eb	Emission standards for hazardous air pollutants for gasoline distribution area sources: bulk terminals, bulk plants and pipeline facilities	BBBBBB	N/A
ec	Emission standards for hazardous air pollutants for area sources: gasoline dispensing facilities	CCCCC	N/A
ed to eg	Reserved	N/A	N/A
eh	Emission standards for hazardous air pollutants for area sources: paint stripping and miscellaneous surface coating operations	HHHHHH	N/A
ei	Reserved	N/A	N/A
ej	Emission standards for hazardous air pollutants for area sources: industrial, commercial, and institutional boilers	JJJJJ	N/A
ek	Reserved	N/A	N/A
el	Emission standards for hazardous air pollutants for acrylic and modacrylic fibers production area sources	LLLLL	N/A
em	Emission standards for hazardous air pollutants for carbon black production area sources	MMMMM	N/A
en	Emission standards for hazardous air pollutants for chemical manufacturing of chromium compounds area sources	NNNNN	N/A
eo	Emission standards for hazardous air pollutants for flexible polyurethane foam production and fabrication area sources	OOOOO	N/A

23.1(4) paragraph	Affected source category	40 CFR Part 63 Subpart Adopted	Date of adoption (if different than 23.1(4) introductory paragraph) or note if standard is not adopted
ep	Emission standards for hazardous air pollutants for lead acid battery manufacturing area sources	PPPPPP	November 19, 2020
eq	Emission standards for hazardous air pollutants for wood preserving area sources	QQQQQQ	N/A
er	Emission standards for hazardous air pollutants for clay ceramics manufacturing area sources	RRRRRR	N/A
es	Emission standards for hazardous air pollutants for glass manufacturing area sources	SSSSSS	N/A
et	Emissions standards for hazardous air pollutants for secondary nonferrous metals processing area sources	TTTTTT	N/A
eu	Reserved	N/A	N/A
ev	Emission standards for hazardous air pollutants for area sources	VVVVVV	N/A
ew	Emission standards for hazardous air pollutants for area sources: plating and polishing	WWWWWW	N/A
ex	Emission standards for hazardous air pollutants for area sources: metal fabrication and finishing	XXXXXX	N/A
ey	Reserved	N/A	N/A
ez	Emission standards for hazardous air pollutants for area sources: aluminum, copper, and other nonferrous foundries	ZZZZZZ	N/A
fa	Reserved	N/A	N/A
fb	National emission standards for hazardous air pollutants for area sources: chemical preparations industry	BBBBBB	N/A
fc	Emission standards for hazardous air pollutants for area sources: paint and allied products manufacturing	CCCCCC	N/A
fd	Emission standards for hazardous air pollutants for area sources: prepared feeds manufacturing	DDDDDD	N/A

23.1(5) Emission guidelines. The emission guidelines and compliance times for existing sources, as defined in 40 Code of Federal Regulations Part 60 as amended through March 21, 2011, shall apply to the following affected facilities. The corresponding 40 CFR Part 60 subpart designation is in parentheses. A different CFR reference and date for adoption by reference may be included with the subpart designation indicated in the paragraphs of this subrule. The control of the designated pollutants will be in accordance with federal standards established in Sections 111 and 129 of the Act and 40 CFR Part 60, Subpart B (Adoption and Submittal of State Plans for Designated Facilities), and the applicable subpart(s) for the existing source. Reference test methods (Appendix A), performance specifications (Appendix B), determination of emission rate change (Appendix C), quality assurance procedures (Appendix F) and the general provisions (Subpart A) of 40 CFR Part 60, as adopted by reference in 23.1(2), also apply to the affected facilities.

a. Emission guidelines for municipal solid waste landfills (Subpart Cc). Emission guidelines and compliance times for the control of certain designated pollutants from designated municipal solid waste landfills shall be in accordance with federal standards established in Subparts Cc (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills) and WWW (Standards of Performance for Municipal Solid Waste Landfills) of 40 CFR Part 60 as amended through April 10, 2000.

(1) Definitions. For the purpose of 23.1(5) “a,” the definitions have the same meaning given to them in the Act and 40 CFR Part 60, Subparts A (General Provisions), B, and WWW, if not defined in this subparagraph.

“Municipal solid waste landfill” or “MSW landfill” means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes such as commercial solid waste, nonhazardous sludge, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill or a lateral expansion.

(2) Designated facilities.

1. The designated facility to which the emission guidelines apply is each existing MSW landfill for which construction, reconstruction or modification was commenced before May 30, 1991.

2. Physical or operational changes made to an existing MSW landfill solely to comply with an emission guideline are not considered a modification or reconstruction and would not subject an existing MSW landfill to the requirements of 40 CFR Part 60, Subpart WWW (40 CFR 60.750).

3. For MSW landfills subject to 567—24.101(455B) only because of applicability to 23.1(5) “a”(2), the following apply for obtaining and maintaining a Title V operating permit under 567—24.104(455B):

- The owner or operator of an MSW landfill with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not required to obtain an operating permit for the landfill.

- The owner or operator of an MSW landfill with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters on or before June 22, 1998, becomes subject to the requirements of 567—subrule 24.105(1) on September 20, 1998. This requires the landfill to submit a Title V permit application to the air quality bureau, department of natural resources, no later than September 20, 1999.

- The owner or operator of a closed MSW landfill does not have to maintain an operating permit for the landfill if either of the following conditions are met: the landfill was never subject to the requirement for a control system under 23.1(5) “a”(3), or the owner or operator meets the conditions for control system removal specified in 40 CFR §60.752(b)(2)(v).

(3) Emission guidelines for municipal solid waste landfill emissions.

1. MSW landfill emissions at each MSW landfill meeting the conditions below shall be controlled. A design capacity report must be submitted to the director by November 18, 1997.

The landfill has accepted waste at any time since November 8, 1987, or has additional design capacity available for future waste deposition.

The landfill has a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report.

All calculations used to determine the maximum design capacity must be included in the design capacity report.

The landfill has a nonmethane organic compound (NMOC) emission rate of 50 megagrams per year or more. If the MSW landfill's design capacity exceeds the established thresholds in 23.1(5) "a"(3)"1," the NMOC emission rate calculations must be provided with the design capacity report.

2. The planning and installation of a collection and control system shall meet the conditions provided in 40 CFR 60.752(b)(2) at each MSW landfill meeting the conditions in 23.1(5) "a"(3)"1."

3. MSW landfill emissions collected through the use of control devices must meet the following requirements, except as provided in 40 CFR 60.24 after approval by the director and U.S. Environmental Protection Agency:

An open flare designed and operated in accordance with the parameters established in 40 CFR 60.18; a control system designed and operated to reduce NMOC by 98 weight percent; or an enclosed combustor designed and operated to reduce the outlet NMOC concentration to 20 parts per million as hexane by volume, dry basis at 3 percent oxygen, or less.

(4) Test methods and procedures. The following must be used:

1. The calculation of the landfill NMOC emission rate listed in 40 CFR 60.754, as applicable, to determine whether the landfill meets the condition in 23.1(5) "a"(3)"3";

2. The operational standards in 40 CFR 60.753;

3. The compliance provisions in 40 CFR 60.755; and

4. The monitoring provisions in 40 CFR 60.756.

(5) Reporting and recordkeeping requirements. The recordkeeping and reporting provisions listed in 40 CFR 60.757 and 60.758, as applicable, except as provided under 40 CFR 60.24 after approval by the director and U.S. Environmental Protection Agency, shall be used.

(6) Compliance times.

1. Except as provided for under 23.1(5) "a"(6)"2," planning, awarding of contracts, and installation of MSW landfill air emission collection and control equipment capable of meeting the emission guidelines established under 23.1(5) "a"(3) shall be accomplished within 30 months after the date the initial NMOC emission rate report shows NMOC emissions greater than or equal to 50 megagrams per year.

2. For each existing MSW landfill meeting the conditions in 23.1(5) "a"(3)"1" whose NMOC emission rate is less than 50 megagrams per year on August 20, 1997, installation of collection and control systems capable of meeting emission guidelines in 23.1(5) "a"(3) shall be accomplished within 30 months of the date when the condition in 23.1(5) "a"(3)"1" is met (i.e., the date of the first annual nonmethane organic compounds emission rate which equals or exceeds 50 megagrams per year).

b. *Emission guidelines for hospital/medical/infectious waste incinerators (40 CFR Part 62, Subpart HHH).* The provisions in 62.14400(b) (exceptions to Subpart HHH requirements) and 62.14490 (Subpart HHH definitions) as amended through May 13, 2013, are adopted by reference. No other provisions of Subpart HHH are adopted.

c. *Emission guidelines and compliance schedules for existing commercial and industrial solid waste incineration units that commenced construction on or before November 30, 1999.* Emission guidelines and compliance schedules for the control of designated pollutants from affected commercial and industrial solid waste incinerators that commenced construction on or before November 30, 1999, shall be in accordance with requirements established in Subpart III of 40 CFR Part 62 and 40 CFR §62.3916 as adopted through August 24, 2004.

d. Reserved.

e. *Emission guidelines and compliance times for existing sewage sludge incineration units (40 CFR Part 62, Subpart LLL).* Emission guidelines and compliance times for control of designated pollutants from affected sewage sludge incineration (SSI) units that commenced construction or reconstruction on or before October 14, 2010, shall be in accordance with federal standards established in Subpart LLL of 40 CFR Part 62 as amended through April 29, 2016.

23.1(6) *Calculation of emission limitations based upon stack height.* This rule sets limits for the maximum stack height credit to be used in ambient air quality modeling for the purpose of setting an

emission limitation and calculating the air quality impact of a source. The rule does not limit the actual physical stack height for any source.

For the purpose of this subrule, definitions of “stack,” “a stack in existence,” “dispersion technique,” “good engineering practice (GEP) stack height,” “nearby” and “excessive concentration” as set forth in 40 CFR §51.100(ff) through (kk) as amended through June 14, 1996, are adopted by reference.

[ARC 7952C, IAB 5/15/24, effective 6/19/24; Editorial change: IAC Supplement 7/10/24]

567—23.2(455B) Open burning. For the purpose of these rules and the rules in 567—Chapters 20 through 35, the following terms shall, unless otherwise noted, have the meaning indicated in this rule. The definitions set out in Iowa Code sections 455B.101, 455B.131, and 455B.411 are incorporated verbatim in these rules.

“*Backyard burning*” means the disposal of residential waste by open burning on the premises of the property where such waste is generated.

“*Garbage*” means all solid and semisolid putrescible and nonputrescible animal and vegetable wastes resulting from the handling, preparing, cooking, storing and serving of food or of material intended for use as food but excluding recognized industrial by-products.

“*Landscape waste*” means any vegetable or plant wastes except garbage. The term includes trees, tree trimmings, branches, stumps, brush, weeds, leaves, grass, shrubbery and yard trimmings.

“*Open burning*” means any burning of combustible materials where the products of combustion are emitted into the open air without passing through a chimney or stack.

“*Refuse*” means garbage, rubbish and all other putrescible and nonputrescible wastes, except sewage and water-carried trade wastes.

“*Residential waste*” means any refuse generated on the premises as a result of residential activities. The term includes landscape waste grown on the premises or deposited thereon by the elements, but excludes garbage, tires, trade wastes, and any locally recyclable goods or plastics.

“*Rubbish*” means all waste materials of nonputrescible nature.

“*Trade waste*” means any refuse resulting from the prosecution of any trade, business, industry, commercial venture (including farming and ranching), or utility or service activity, and any governmental or institutional activity, whether or not for profit.

23.2(1) Prohibition. No person shall allow, cause or permit open burning of combustible materials, except as provided in 23.2(2) and 23.2(3).

23.2(2) Variances from rules. Any person wishing to conduct open burning of materials not exempted in 23.2(3) may make application for a variance as specified in 567—subrule 21.2(1). In addition to requiring the information specified under 567—subrule 21.2(1), the director may require any person applying for a variance from the open burning rules to submit adequate documentation to allow the director to assess whether granting the variance will hinder attainment or maintenance of a National Ambient Air Quality Standard (NAAQS).

23.2(3) Exemptions. The open burning exemptions specified in this subrule do not provide exemptions from any other applicable environmental regulations. In particular, the exemptions contained in this subrule do not absolve any person from compliance with the rules for solid waste disposal, including ash disposal, and solid waste permitting contained in 567—Chapters 100 through 130 or the rules for storm water runoff and storm water permitting contained in 567—Chapters 60 and 64. The following exemptions apply unless prohibited by local ordinances or regulations, except that the exemptions for open burning of trees and tree trimming (23.2(3)“b”), landscape waste (23.2(3)“d”), residential waste (23.2(3)“f”), agricultural structures (23.2(3)“i”), and demolished buildings (23.2(3)“j”) are unavailable within the cities of Cedar Rapids, Marion, Hiawatha, Council Bluffs, Carter Lake, Des Moines, West Des Moines, Clive, Windsor Heights, Urbandale, and Pleasant Hill.

a. *Disaster rubbish.* The open burning of rubbish, including landscape waste, for the duration of the community disaster period in cases where an officially declared emergency condition exists. Burning of any structures or demolished structures shall be conducted in accordance with 40 CFR Section 61.145 as amended through January 16, 1991, which is the “Standard for Demolition and Renovation” of the asbestos National Emission Standard for Hazardous Air Pollutants.

b. *Trees and tree trimmings.* The open burning of trees and tree trimmings not originated on the premises provided that the burning site is operated by a local governmental entity, the burning site is fenced and access is controlled, burning is conducted on a regularly scheduled basis and is supervised at all times, burning is conducted only when weather conditions are favorable with respect to surrounding property, and the burning site is limited to areas at least one-quarter mile from any inhabited building unless a written waiver in the form of an affidavit is submitted by the owner of the building to the department and to the local governmental entity prior to the first instance of open burning at the site which occurs after November 13, 1996. The written waiver shall become effective only upon recording in the office of the recorder of deeds of the county in which the inhabited building is located. However, when the open burning of trees and tree trimmings causes air pollution as defined in Iowa Code section 455B.131(3), the department may take appropriate action to secure relocation of the burning operation. Rubber tires shall not be used to ignite trees and tree trimmings.

This exemption shall not apply within the area classified as the PM10 (inhalable) particulate Group II area of Mason City. This Group II area is described as follows: the area in Cerro Gordo County, Iowa, in Lincoln Township including Sections 13, 24 and 25; in Lime Creek Township including Sections 18, 19, 20, 21, 27, 28, 29, 30, 31, 32, 33, 34 and 35; in Mason Township the W ½ of Section 1, Sections 2, 3, 4, 5, 8, 9, the N ½ of Section 11, the NW ¼ of Section 12, the N ½ of Section 16, the N ½ of Section 17 and the portions of Sections 10 and 15 north and west of the line from U.S. Highway 18 south on Kentucky Avenue to 9th Street SE; thence west on 9th Street SE to the Minneapolis and St. Louis railroad tracks; thence south on Minneapolis and St. Louis railroad tracks to 19th Street SE; thence west on 19th Street SE to the section line between Sections 15 and 16.

c. *Flare stacks.* The open burning or flaring of waste gases, providing such open burning or flaring is conducted in compliance with 23.3(2) “d” and 23.3(3) “e.”

d. *Landscape waste.* The disposal by open burning of landscape waste originating on the premises. However, the burning of landscape waste produced in clearing, grubbing and construction operations shall be limited to areas located at least one-fourth mile from any building inhabited by other than the landowner or tenant conducting the open burning. Rubber tires shall not be used to ignite landscape waste.

e. *Recreational fires.* Open fires for cooking, heating, recreation and ceremonies, provided they comply with 23.3(2) “d.” Burning rubber tires is prohibited from this activity.

f. *Residential waste.* Backyard burning of residential waste at dwellings of four-family units or less. The adoption of more restrictive ordinances or regulations of a governing body of the political subdivision, relating to control of backyard burning, shall not be precluded by these rules.

g. *Training fires.* For purposes of 23.2(3), a “training fire” is a fire set for the purposes of conducting bona fide training of public or industrial employees in firefighting methods. For purposes of this paragraph, “bona fide training” means training that is conducted according to the National Fire Protection Association 1403 Standard on Live Fire Training Evolutions (2002 Edition) or a comparable training fire standard. A training fire may be conducted, provided that all of the following conditions are met:

(1) A training fire on a building is conducted with the building structurally intact.

(2) The training fire does not include the controlled burn of a demolished building.

(3) If the training fire is to be conducted on a building, written notification is provided to the department on DNR Form 542-8010, Notification of an Iowa Training Fire-Demolition or a Controlled Burn of a Demolished Building, and is postmarked or delivered to the director at least ten working days before such action commences.

(4) Notification shall be made in accordance with 40 CFR Section 61.145, “Standard for Demolition and Renovation” of the asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) as amended through January 16, 1991.

(5) All asbestos-containing materials shall be removed prior to the training fire.

(6) Asphalt roofing may be burned in the training fire only if notification to the director contains testing results indicating that none of the layers of asphalt roofing contain asbestos. During each calendar year, each fire department may conduct no more than two training fires on buildings where asphalt roofing has not been removed, provided that for each of those training fires the asphalt roofing material present has been tested to ensure that it does not contain asbestos. Each fire department’s limit on the burning of

asphalt roofing shall include both training fires and the controlled burning of a demolished building, as specified in 23.2(3) “j.”

(7) Rubber tires shall not be burned during a training fire.

h. Paper or plastic pesticide containers and seed corn bags. The disposal by open burning of paper or plastic pesticide containers (except those formerly containing organic forms of beryllium, selenium, mercury, lead, cadmium or arsenic) and seed corn bags resulting from farming activities occurring on the premises. Such open burning shall be limited to areas located at least one-fourth mile from any building inhabited by other than the landowner or tenant conducting the open burning, livestock area, wildlife area, or water source. The amount of paper or plastic pesticide containers and seed corn bags that can be disposed of by open burning shall not exceed one day’s accumulation or 50 pounds, whichever is less. However, when the burning of paper or plastic pesticide containers or seed corn bags causes a nuisance, the director may take action to secure relocation of the burning operation. Since the concentration levels of pesticide combustion products near the fire may be hazardous, the person conducting the open burning should take precautions to avoid inhalation of the pesticide combustion products.

i. Agricultural structures. The open burning of agricultural structures, provided that the open burning occurs on the premises and, for agricultural structures located within a city or town, at least one-fourth mile from any building inhabited by a person other than the landowner, a tenant, or an employee of the landowner or tenant conducting the open burning unless a written waiver in the form of an affidavit is submitted by the owner of the building to the department prior to the open burning; all chemicals and asphalt roofing are removed; burning is conducted only when weather conditions are favorable with respect to surrounding property; and permission from the local fire chief is secured in advance of the burning. Rubber tires shall not be used to ignite agricultural structures. The asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) as amended through January 16, 1991, requires the burning of agricultural structures to be conducted in accordance with 40 CFR Section 61.145, “Standard for Demolition and Renovation.”

For the purposes of this subrule, “agricultural structures” means barns, machine sheds, storage cribs, animal confinement buildings, and homes located on the premises and used in conjunction with crop production, livestock or poultry raising and feeding operations. “Agricultural structures,” for asbestos NESHAP purposes, includes all of the above, with the exception of a single residential structure on the premises having four or fewer dwelling units, which has been used only for residential purposes.

j. Controlled burning of a demolished building. A city, as “city” is defined in Iowa Code section 362.2(4), with approval of its council, as “council” is defined in Iowa Code section 362.2(8), may conduct a controlled burn of a demolished building. A city is the only party that may conduct such a burn and is responsible for ensuring that all of the following conditions are met:

(1) Prohibition. The controlled burning of a demolished building is prohibited within the city limits of Cedar Rapids, Marion, Hiawatha, Council Bluffs, Carter Lake, Des Moines, West Des Moines, Clive, Windsor Heights, Urbandale, Pleasant Hill, Buffalo, Davenport, Mason City or any other area where area-specific state implementation plans require the control of particulate matter.

(2) Notification requirements. For each building proposed to be burned, the city fire department or a city official, on behalf of the city, shall submit to the department a completed notification postmarked at least 10 working days prior to commencing demolition and at least 30 days before the proposed controlled burn commences. Documentation of city council approval shall be submitted with the notification. Information required to be provided shall include the exact location of the burn site; the approximate distance to the nearest neighboring residence or business; the method used by the city to notify nearby residents of the proposed burn; an explanation of why alternative methods of demolition debris management are not being used; and information required by 40 CFR Section 61.145, “Standard for Demolition and Renovation” of the asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP), as amended through January 16, 1991. Notification shall be provided on DNR Form 542-8010, Notification of an Iowa Training Fire-Demolition or a Controlled Burn of a Demolished Building. For burns conducted outside the city limits, the city shall send to the chairperson of the applicable county board a copy of the completed DNR notification Form 542-8010 and documentation of city council approval.

Notification to the county board shall be postmarked, faxed or sent by email at least 30 days before the proposed controlled burn commences.

(3) Asbestos removal requirements. All asbestos-containing materials shall be removed before the building to be burned is demolished. The department may require proof that any applicable inspection, notification, removal and demolition occurred, or will occur, in accordance with 40 CFR Section 61.145, “Standard for Demolition and Renovation” of the asbestos NESHAP, as amended through January 16, 1991.

(4) Requirements for asphalt roofing. During each calendar year, each city shall conduct no more than two controlled burns of a demolished building in which asphalt roofing has not been removed, provided that for each controlled burn of a demolished building the asphalt roofing material present has been tested to ensure that it does not contain asbestos. Each city’s limit on the burning of asphalt roofing shall include both the controlled burning of a demolished building and training fires, as specified in 23.2(3) “g.”

(5) Building size limit. For each proposed controlled burn located within the city limits, more than one demolished building may be included in the burn, provided that the sum total of all building material to be burned at a designated site does not exceed 1,700 square feet in size. For a controlled burn site located outside the city limits, the sum total of all building material to be burned, per day, may not exceed 1,700 square feet in size. For purposes of this subparagraph, “square feet” includes both finished and unfinished basements and excludes unfinished attics, carports, attached garages, and porches that are not protected from weather.

(6) Time of day requirements. The controlled burning of a demolished building may be conducted only between the hours of 6 a.m. and 6 p.m. and only when weather conditions are favorable with respect to surrounding property. The city shall adequately schedule and sufficiently control the burn to ensure that burning is completed by 6 p.m.

(7) Prohibited materials. Rubber tires, chemicals, furniture, carpeting, household appliances, vinyl products (such as flooring or siding), trade waste, garbage, rubbish, landscape waste, residential waste, and other nonstructural materials shall not be burned.

(8) Limits on the number and location of burns. For burns conducted within the city limits, each city may undertake no more than one controlled burn of demolished building material in every 0.6-mile-radius circle during each calendar year. For burn sites established outside the city limits, each city shall undertake no more than one controlled burn of demolished building material per day. A burn site outside the city limits must be located at least 0.6 of a mile from any building inhabited by a person, as “person” is defined in Iowa Code section 362.2(17).

(9) Requirements for burn access and supervision. The city shall control access to all demolished building burn sites. Representatives of the city who are city employees or who are hired by the city shall supervise the burning of demolished building material at all times.

(10) Recordkeeping requirements. The city shall retain at least one copy of all notifications and supplementary information required to be sent to the department under 23.2(3) “j”(2). Additionally, the city shall maintain a map of the exact location of each burn site and supporting documentation showing the date of each demolished building burn and the square feet of building material burned on each date. All maps, notifications and associated records shall be maintained by the city clerk, as “clerk” is defined in Iowa Code section 362.2(7), for a period of at least three years and shall be made available for inspection by the department upon request.

(11) Variance from this paragraph. In accordance with 567—subrules 21.2(1) and 23.2(2), a city may apply for a variance from the specific conditions for controlled burning of a demolished building and may request that the director conduct a review of the ambient air impacts of the request. The director shall approve or deny the request in accordance with 567—subrule 21.2(4).

(12) Compliance with other applicable environmental regulations. Compliance with the exemption requirements in this paragraph shall not absolve a city of the responsibility to comply with any other applicable environmental regulations. In particular, a city conducting a controlled burn of a demolished building shall comply with all applicable solid waste disposal, including ash disposal, and solid waste permitting rules contained in 567—Chapters 100 through 130, as well as all applicable storm water discharge and storm water permitting rules contained in 567—Chapters 60 and 64.

[ARC 7952C, IAB 5/15/24, effective 6/19/24]

567—23.3(455B) Specific contaminants.

23.3(1) General. The emission standards contained in this rule shall apply to each source operation unless performance standard for the process is specified in 23.1(2) through 23.1(5), in which case the performance standard shall apply.

23.3(2) Particulate matter. No person shall cause or allow the emission of particulate matter from any source in excess of the emission standards specified in this chapter, except as provided in 567—Chapter 21.

a. General emission rate.

(1) For sources constructed, modified or reconstructed on or after July 21, 1999, the emission of particulate matter from any process shall not exceed an emission standard of 0.1 grain per dry standard cubic foot (dscf) of exhaust gas.

(2) For sources constructed, modified or reconstructed prior to July 21, 1999, the emission of particulate matter from any process shall not exceed the amount determined from the equations below, or amount specified in a permit if based on an emission standard of 0.1 grain per standard cubic foot of exhaust gas.

The process weight rates up to 60,000 lb/hr shall be accomplished by the use of the equation:

$$E = 4.10 \times P^{0.67},$$

and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lb/hr shall be accomplished by use of the equation:

$$E = 55.0 \times P^{0.11} - 40,$$

where E = rate of emission in lb/hr, and

P = process weight in tons/hr

b. Combustion for indirect heating. Emissions of particulate matter from the combustion of fuel for indirect heating or for power generation shall be limited by the ASME Standard APS-1, Second Edition, November 1968, "Recommended Guide for the Control of Dust Emission—Combustion for Indirect Heat Exchangers." For the purpose of this paragraph, the allowable emissions shall be calculated from equation (15) in that standard, with Comax2=50 micrograms per cubic meter. The maximum ground level dust concentrations designated are above the background level. For plants with 4,000 million Btu/hour input or more, the "a" factor shall be 1.0. In plants with less than 4,000 million Btu/hour input, appropriate "a" factors, less than 1.0, shall be applied. Pertinent correction factors, as specified in the standard, shall be applied for installations with multiple stacks. However, for fuel-burning units in operation on January 13, 1976, the maximum allowable emissions calculated under APS-1 for the facility's equipment configuration on January 13, 1976, shall not be increased even if the changes in the equipment or stack configuration would otherwise allow a recalculation and a higher maximum allowable emission under APS-1.

(1) Outside any standard metropolitan statistical area, the maximum allowable emissions from each stack, irrespective of stack height, shall be 0.8 pounds of particulates per million Btu input.

(2) Inside any standard metropolitan statistical area, the maximum allowable emission from each stack, irrespective of stack height, shall be 0.6 pounds of particulates per million Btu input.

(3) For a new fossil fuel-fired steam generating unit of more than 250 million Btu per hour heat input, 23.1(2)"a" shall apply. For a new unit of between 150 million and 250 million (inclusive) Btu per hour heat input, the maximum allowable emissions from such new unit shall be 0.2 pounds of particulates per million Btu of heat input. For a new unit of less than 150 million Btu per hour heat input, the maximum allowable emissions from such new unit shall be 0.6 pounds of particulates per million Btu of heat input.

(4) Measurements of emissions from a particulate source will be made in accordance with the provisions of 567—Chapter 25.

(5) For fuel-burning sources in operation prior to July 29, 1977, which are not subject to 23.1(2) and which significantly impact a primary or secondary particulate standard nonattainment area, the emission limitations specified in this subparagraph apply. A significant impact shall be equal to or exceeding 5 micrograms of particulate matter per cubic meter of air (24-hour average) or 1 microgram of particulate matter per cubic meter of air (annual average) determined by an EPA-approved single source dispersion model using allowable emission rates and five-year worst-case meteorological conditions. In the case where two or more boilers discharge into a common stack, the applicable stack emission limitation shall be based upon the heat input of the largest operating boiler. The plantwide allowable emission limitation shall

be the weighted average of the allowable emission limitations for each stack or the applicable APS-1 plantwide standard as determined under 23.3(2) "b," whichever is more stringent.

The maximum allowable emission rate for a single stack with a total heat input capacity less than 250 million Btu per hour shall be 0.60 pound of particulate matter per million Btu heat input, the maximum allowable emission rate for a single stack with a total heat input capacity greater than or equal to 250 million Btu per hour and less than 500 million Btu per hour shall be 0.40 pound of particulate matter per million Btu heat input, and the maximum allowable emission rate for a single stack with a total heat input capacity greater than or equal to 500 million Btu per hour shall be 0.30 pound of particulate matter per million Btu heat input. All sources regulated under this subparagraph shall demonstrate compliance by October 1, 1981; however, a source is considered to be in compliance with this subparagraph if by October 1, 1981, it is on a compliance schedule to be completed as expeditiously as possible, but no later than December 31, 1982.

c. Fugitive dust.

(1) Attainment and unclassified areas. A person shall take reasonable precautions to prevent particulate matter from becoming airborne in quantities sufficient to cause a nuisance as defined in Iowa Code section 657.1 when the person allows, causes or permits any materials to be handled, transported or stored or a building, its appurtenances or a construction haul road to be used, constructed, altered, repaired or demolished, with the exception of farming operations or dust generated by ordinary travel on unpaved roads. Ordinary travel includes routine traffic and road maintenance activities such as scarifying, compacting, transporting road maintenance surfacing material, and scraping of the unpaved public road surface. All persons, with the above exceptions, shall take reasonable precautions to prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property on which the emissions originate. The public highway authority shall be responsible for taking corrective action in those cases where said authority has received complaints of or has actual knowledge of dust conditions that require abatement pursuant to this subrule. Reasonable precautions may include but not be limited to the following procedures:

1. Use, where practical, of water or chemicals for control of dusts in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.
2. Application of suitable materials, such as but not limited to asphalt, oil, water or chemicals on unpaved roads, material stockpiles, race tracks and other surfaces which can give rise to airborne dusts.
3. Installation and use of containment or control equipment, to enclose or otherwise limit the emissions resulting from the handling and transfer of dusty materials, such as but not limited to grain, fertilizer or limestone.
4. Covering, at all times when in motion, open-bodied vehicles transporting materials likely to give rise to airborne dusts.
5. Prompt removal of earth or other material from paved streets or to which earth or other material has been transported by trucking or earth-moving equipment, erosion by water or other means.
6. Reducing the speed of vehicles traveling over on-property surfaces as necessary to minimize the generation of airborne dusts.

(2) Nonattainment areas. 23.3(2) "c" (1) notwithstanding, no person shall allow, cause or permit any visible emission of fugitive dust in a nonattainment area for particulate matter to go beyond the lot line of the property on which a traditional source is located without taking reasonable precautions to prevent emission. "Traditional source" means a source category for which a particulate emission standard has been established in 23.1(2), 23.3(2) "a," 23.3(2) "b" or 567—23.4(455B) and includes a quarry operation, haul road or parking lot associated with a traditional source. This paragraph does not modify the emission standard stated in 23.1(2), 23.3(2) "a," 23.3(2) "b" or 567—23.4(455B) but rather establishes a separate requirement for fugitive dust from such sources. For guidance on the types of controls which may constitute reasonable precautions, see "Identification of Techniques for the Control of Industrial Fugitive Dust Emissions," as adopted by the commission on May 19, 1981, which is available from the department upon request.

(3) Redesignated areas. Reasonable precautions implemented pursuant to the nonattainment area provisions of 23.3(2)“c”(2) shall remain in effect if the nonattainment area is redesignated to either attainment or unclassified after March 6, 1980.

d. Visible emissions. No person shall allow, cause or permit the emission of visible air contaminants into the atmosphere from any equipment, internal combustion engine, premise fire, open fire or stack, equal to or in excess of 40 percent opacity or that level specified in a construction permit, except as provided below and in 567—Chapter 21.

(1) Residential heating equipment. Residential heating equipment serving dwellings of four family units or less is exempt.

(2) Gasoline-powered vehicles. No person shall allow, cause or permit the emission of visible air contaminants from gasoline-powered motor vehicles for longer than five consecutive seconds.

(3) Diesel-powered vehicles. No person shall allow, cause or permit the emission of visible air contaminants from diesel-powered motor vehicles in excess of 40 percent opacity for longer than five consecutive seconds.

(4) Diesel-powered locomotives. No person shall allow, cause or permit the emission of visible air contaminants from diesel-powered locomotives in excess of 40 percent opacity, except for a maximum period of 40 consecutive seconds during acceleration under load, or for a period of four consecutive minutes when a locomotive is loaded after a period of idling.

(5) Startup and testing. Initial start and warmup of a cold engine; the testing of an engine for trouble, diagnosis or repair; or engine research and development activities, is exempt.

(6) Uncombined water. The provisions of this paragraph shall apply to any emission that would be in violation of these provisions except for the presence of uncombined water, such as condensed water vapor.

23.3(3) Sulfur compounds. The provisions of this subrule shall apply to any installation from which sulfur compounds are emitted into the atmosphere.

a. Sulfur dioxide from use of solid fuels.

(1) No person shall allow, cause, or permit the emission of sulfur dioxide into the atmosphere from an existing solid fuel-burning unit, in an amount greater than 6 pounds, replicated maximum three-hour average, per million Btu of heat input if such unit is located within the following counties: Black Hawk, Clinton, Des Moines, Dubuque, Jackson, Lee, Linn, Louisa, Muscatine and Scott.

(2) No person shall allow, cause, or permit the emission of sulfur dioxide into the atmosphere from an existing solid fuel-burning unit, in an amount greater than 5 pounds, replicated maximum three-hour average, per million Btu of heat input if such unit is located within the remaining 89 counties of the state not listed in 23.3(3)“a”(1).

(3) No person shall allow, cause, or permit the emission of sulfur dioxide into the atmosphere from any new solid fuel-burning unit that has a capacity of 250 million Btu or less per hour heat input, in an amount greater than 6 pounds, replicated maximum three-hour average, per million Btu of heat input.

b. Sulfur dioxide from use of liquid fuels.

(1) No person shall allow, cause, or permit the combustion of number 1 or number 2 fuel oil exceeding a sulfur content of 0.5 percent by weight.

(2) No person shall allow, cause, or permit the emission of sulfur dioxide into the atmosphere in an amount greater than 2.5 pounds of sulfur dioxide, replicated maximum three-hour average, per million Btu of heat input from a liquid fuel-burning unit.

c. Sulfur dioxide from sulfuric acid manufacture. After January 1, 1975, no person shall allow, cause or permit the emission of sulfur dioxide from an existing sulfuric acid manufacturing plant in excess of 30 pounds of sulfur dioxide, maximum three-hour average, per ton of product calculated as 100 percent sulfuric acid.

d. Acid mist from sulfuric acid manufacture. After January 1, 1974, no person shall allow, cause or permit the emission of acid mist calculated as sulfuric acid from an existing sulfuric acid manufacturing plant in excess of 0.5 pounds, maximum three-hour average, per ton of product calculated as 100 percent sulfuric acid.

e. Other processes capable of emitting sulfur dioxide. After January 1, 1974, no person shall allow, cause or permit the emission of sulfur dioxide from any process, other than sulfuric acid manufacture, in

excess of 500 parts per million, based on volume. This paragraph shall not apply to devices which have been installed for air pollution abatement purposes where it is demonstrated by the owner of the source that the ambient air quality standards are not being exceeded.

[ARC 7952C, IAB 5/15/24, effective 6/19/24]

567—23.4(455B) Specific processes.

23.4(1) General. The provisions of this rule shall not apply to those facilities for which performance standards are specified in 23.1(2). The emission standards specified in this rule shall apply and those specified in 23.3(2) “a” and 23.3(2) “b” shall not apply to each process of the types listed in the following subrules, except as provided below.

EXCEPTION: Whenever the director determines that a process complying with the emission standard prescribed in this rule is causing or will cause air pollution in a specific area of the state, the specific emission standard may be suspended and compliance with the provisions of 567—23.3(455B) may be required in such instance.

23.4(2) Asphalt batching plants. No person shall cause, allow or permit the operation of an asphalt batching plant in a manner such that the particulate matter discharged to the atmosphere exceeds 0.15 grain per standard cubic foot of exhaust gas.

23.4(3) Cement kilns. Cement kilns shall be equipped with air pollution control devices to reduce the particulate matter in the gas discharged to the atmosphere to no more than 0.3 percent of the particulate matter entering the air pollution control device. Regardless of the degree of efficiency of the air pollution control device, particulate matter discharged from such kilns shall not exceed 0.1 grain per standard cubic foot of exhaust gas.

23.4(4) Cupolas for metallurgical melting. The emissions of particulate matter from all new foundry cupolas, and from all existing foundry cupolas with a process weight rate in excess of 20,000 pounds per hour, shall not exceed the amount specified in 23.3(2) “a,” except as provided in 567—Chapter 21.

The emissions of particulate matter from all existing foundry cupolas with a process weight rate less than or equal to 20,000 pounds per hour shall not exceed the amount determined from the table below, except as provided in 567—Chapter 21.

ALLOWABLE EMISSIONS FROM
EXISTING SMALL FOUNDRY CUPOLAS

Process weight rate (lb/hr)	Allowable emission (lb/hr)
1,000	3.05
2,000	4.70
3,000	6.35
4,000	8.00
5,000	9.58
6,000	11.30
7,000	12.90
8,000	14.30
9,000	15.50
10,000	16.65
12,000	18.70
16,000	21.60
18,000	23.40
20,000	25.10

23.4(5) Electric furnaces for metallurgical melting. The emissions of particulate matter to the atmosphere from electric furnaces used for metallurgical melting shall not exceed 0.1 grain per standard cubic foot of exhaust gas.

23.4(6) Sand handling and surface finishing operations in metal processing. This subrule shall apply to any new foundry or metal processing operation not properly termed a combustion, melting, baking or

pouring operation. For purposes of this subrule, a new process is any process that has not started operation, or the construction of which has not been commenced, or the components of which have not been ordered or contracts for the construction of which have not been let on August 1, 1977. No person shall allow, cause or permit the operation of any equipment designed for sand shakeout, mulling, molding, cleaning, preparation, reclamation or rejuvenation or any equipment for abrasive cleaning, shot blasting, grinding, cutting, sawing or buffing in such a manner that particulate matter discharged from any stack exceeds 0.05 grains per dry standard cubic foot of exhaust gas, regardless of the types and number of operations that discharge from the stack.

23.4(7) Grain handling and processing plants. The owner or operator of equipment at a permanent installation for the handling or processing of grain, grain products and grain by-products shall not cause, allow or permit the particulate matter discharged to the atmosphere to exceed 0.1 grain per dry standard cubic foot of exhaust gas, except as follows:

a. The particulate matter discharged to the atmosphere from a grain bin vent at a country grain elevator, as “country grain elevator” is defined in 567—subrule 22.10(1), shall not exceed 1.0 grain per dry standard cubic foot of exhaust gas.

b. The particulate matter discharged to the atmosphere from a grain bin vent that was constructed, modified or reconstructed before March 31, 2008, at a country grain terminal elevator, as “country grain terminal elevator” is defined in 567—subrule 22.10(1), or at a grain terminal elevator, as “grain terminal elevator” is defined in 567—subrule 22.10(1), shall not exceed 1.0 grain per dry standard cubic foot of exhaust gas.

c. The particulate matter discharged to the atmosphere from a grain bin vent that is constructed or reconstructed on or after March 31, 2008, at a country grain terminal elevator, as “country grain terminal elevator” is defined in 567—subrule 22.10(1), or at a grain terminal elevator, as “grain terminal elevator” is defined in 567—subrule 22.10(1), shall not exceed 0.1 grain per dry standard cubic foot of exhaust gas.

23.4(8) Lime kilns. No person shall cause, allow or permit the operation of a kiln for the processing of limestone such that the particulate matter in the gas discharged to the atmosphere exceeds 0.1 grain per standard cubic foot of exhaust gas.

23.4(9) Meat smokehouses. No person shall cause, allow or permit the operation of a meat smokehouse or a group of meat smokehouses that consume more than 10 pounds of wood, sawdust or other material per hour such that the particulate matter discharged to the atmosphere exceeds 0.2 grain per standard cubic foot of exhaust gas.

23.4(10) Phosphate processing plants.

a. and b. Reserved.

c. Nitrophosphate manufacture. No person shall allow, cause or permit the operation of equipment for the manufacture of nitrophosphate in a manner that produces more than 0.06 pound of fluoride per ton of phosphorus pentoxide or equivalent input.

d. No person shall allow, cause or permit the operation of equipment for the processing of phosphate ore, rock or other phosphatic material (other than equipment used for the manufacture of phosphoric acid, diammonium phosphate or nitrophosphate) in a manner that the unit emissions of fluoride exceed 0.4 pound of fluoride per ton of phosphorous pentoxide or its equivalent input.

e. Notwithstanding 23.4(10) “c” and “d,” no person shall allow, cause or permit the operation of equipment for the processing of phosphorous ore, rock or other phosphatic material, including but not limited to phosphoric acid, in a manner that emissions of fluorides exceed 100 pounds per day.

f. “Fluoride” means elemental fluorine and all fluoride compounds as measured by reference methods specified in Appendix A to 40 CFR Part 60 as amended through March 12, 1996.

g. Calculation. The allowable total emission of fluoride shall be calculated by multiplying the unit emission specified above by the expressed design production capacity of the process equipment.

23.4(11) Portland cement concrete batching plants. No person shall cause, allow or permit the operation of a Portland cement concrete batching plant such that the particulate matter discharged to the atmosphere exceeds 0.1 grain per standard cubic foot of exhaust gas.

23.4(12) Incinerators. A person shall not cause, allow or permit the operation of an incinerator unless provided with appropriate control of emissions of particulate matter and visible air contaminants.

a. Particulate matter. A person shall not cause, allow or permit the operation of an incinerator with a rated refuse burning capacity of 1,000 or more pounds per hour in a manner such that the particulate matter discharged to the atmosphere exceeds 0.2 grain per standard cubic foot of exhaust gas adjusted to 12 percent carbon dioxide.

A person shall not cause, allow or permit the operation of an incinerator with a rated refuse burning capacity of less than 1,000 pounds per hour in a manner such that the particulate matter discharged to the atmosphere exceeds 0.35 grain per standard cubic foot of exhaust gas adjusted to 12 percent carbon dioxide.

b. Visible emissions. A person shall not allow, cause or permit the operation of an incinerator in a manner such that it produces visible air contaminants in excess of 40 percent opacity; except that visible air contaminants in excess of 40 percent opacity but less than or equal to 60 percent opacity may be emitted for periods aggregating not more than 3 minutes in any 60-minute period during an operation breakdown or during the cleaning of air pollution control equipment.

23.4(13) Painting and surface-coating operations. No person shall allow, cause or permit painting and surface-coating operations in a manner such that particulate matter in the gas discharge exceeds 0.01 grain per standard cubic foot of exhaust gas.

[ARC 7952C, IAB 5/15/24, effective 6/19/24]

567—23.5(455B) Anaerobic lagoons.

23.5(1) Applications for construction permits for animal feeding operations using anaerobic lagoons shall meet the requirements of 567—Chapter 65.

23.5(2) Criteria for approval of industrial anaerobic lagoons constructed or expanded on or after July 1, 1982.

a. Lagoons designed to treat 100,000 gallons per day (gpd) or less shall be located at least 1,250 feet from a residence not owned by the owner of the lagoon or from a public use area other than a public road.

b. Lagoons designed to treat more than 100,000 gpd shall be located at least 1,875 feet from a residence not owned by the owner of the lagoon or from a public use area other than a public road.

c. The criteria in 23.5(2) shall apply except in situations in which Iowa Code section 455B.134(3) “e”(2) is successfully invoked.

d. Compliance with the requirements of 23.5(2) shall not constitute an exemption from compliance with any other applicable environmental regulations. In particular, compliance with these requirements shall not absolve any person from compliance with the requirements set forth in 567—Chapter 64 that are applicable to industrial anaerobic lagoons.

[ARC 7952C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code section 455B.133.

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◇ Two or more ARCs

¹ Objection, see filed rule [DEQ, 4.2(4)] published IAC Supp. 1/22/77, 3/9/77.

² Effective date of 23.2(4) delayed 70 days by the Administrative Rules Review Committee on 9/14/83.

³ 11/24/10 effective date of 23.1(4), introductory paragraph, and 23.1(4)“ev” and “fa” to “fd” delayed 70 days by the Administrative Rules Review Committee at its meeting held November 9, 2010.

⁴ Amendment to 23.1(4), introductory paragraph, (ARC 9154B, Item 4) rescinded by Executive Order Number 72 on 4/4/11. Amendment removed and prior language restored IAC Supplement 4/20/11.

CHAPTER 24

OPERATING PERMITS

[Prior to IAB 5/15/24, subject appeared in Ch 22]

[Prior to 7/1/83, DEQ Ch 3]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—24.1 to 24.99 Reserved.

567—24.100(455B) Title V operating permits—definitions. For purposes of this chapter and unless otherwise stated, the following terms shall have the meaning indicated in this rule:

“*12-month rolling period*” means the same as defined in 567—22.1(455B).

“*40 CFR Part 70*” means Part 70 or any specific section within Part 70 that is cited in this chapter, as amended through May 6, 2020, unless otherwise noted.

“*40 CFR Part 72*” means Part 72 or any specific section within Part 72 that is cited in this chapter, as amended through March 28, 2011, unless otherwise noted.

“*Act*” means the U.S. Clean Air Act (42 U.S.C. §7401, et seq.), as amended through November 15, 1990.

“*Actual emissions*” means the actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with the following:

1. In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period that immediately precedes that date and that is representative of normal source operations. The director may allow the use of a different time period upon a demonstration that it is more representative of normal source operations. Actual emissions shall be calculated using the unit’s actual operating hours, production rates, and types of materials processed, stored or combusted during the selected time period. Actual emissions for acid rain-affected sources are calculated using a one-year period.

2. Lacking specific information to the contrary, the director may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.

3. For any emissions unit that has not begun normal operations on a particular date, actual emissions shall equal the potential to emit of the unit on that date.

4. For purposes of calculating early reductions of hazardous air pollutants, actual emissions shall not include excess emissions resulting from a malfunction or from startups and shutdowns associated with a malfunction.

Actual emissions for purposes of determining fees shall be the actual emissions calculated over a period of one year.

“*Administrator*” means the administrator for the United States Environmental Protection Agency (EPA) or designee.

“*Affected source*,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“*Affected state*,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“*Affected unit*,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“*Allowable emissions*” means the emission rate of a stationary source calculated using both the maximum rated capacity of the source, unless the source is subject to federally enforceable limits that restrict the operating rate or hours of operation, and the most stringent of the following:

1. The applicable new source performance standards or national emissions standards for hazardous air pollutants, contained in 567—subrules 23.1(2), 23.1(3), and 23.1(4);

2. The applicable existing source emission standard contained in 567—Chapter 23; or

3. The emissions rate specified in the air construction permit for the source.

“*Allowance*,” as this definition is set forth in 40 CFR §72.2, is adopted by reference.

“*Applicable requirement*,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“*Area source*” means any stationary source of hazardous air pollutants that is not a major source as defined in 567—24.100(455B).

“CFR” means the Code of Federal Regulations, with standard references in this chapter by Title and Part, so that “40 CFR 51” means “Title 40 of the Code of Federal Regulations, Part 51.”

“Country grain elevator” means the same as defined in 567—subrule 22.10(1).

“Designated representative” means a responsible natural person authorized by the owner(s) or operator(s) of an affected source and of all affected units at the source, as evidenced by a certificate of representation submitted in accordance with Subpart B of 40 CFR Part 72, to represent and legally bind each owner and operator, as a matter of federal law, in matters pertaining to the acid rain program. Whenever the term “responsible official” is used in Chapter 24, it shall be deemed to refer to the designated representative with regard to all matters under the acid rain program.

“Draft Title V permit,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“Electronic format,” “electronic submittal,” and “electronic submittal format” mean the same as defined in 567—22.1(455B).

“Emergency generator” means the same as defined in 567—22.1(455B).

“Emissions allowable under the permit,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“Emissions unit,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“EPA conditional method” means the same as defined in 567—22.1(455B).

“EPA reference method” means the same as defined in 567—22.1(455B).

“Existing hazardous air pollutant source” means any source as defined in 40 CFR 61 as adopted by reference in 567—subrule 23.1(3) and 40 CFR §63.72 as adopted by reference in 567—subrule 23.1(4) with respect to Section 112(i)(5) of the Act, the construction or reconstruction of which commenced prior to proposal of an applicable Section 112(d) standard.

“Facility” means, with reference to a stationary source, any apparatus that emits or may emit any air pollutant or contaminant.

“Federal implementation plan” means a plan promulgated by the Administrator to fill all or a portion of a gap or otherwise correct all or a portion of an inadequacy in a state implementation plan, and that includes enforceable emission limitations or other control measures, means, or techniques and provides for attainment of the relevant national ambient air quality standard.

“Federally enforceable” means all limitations and conditions that are enforceable by the Administrator, including but not limited to the requirements of the new source performance standards and national emission standards for hazardous air pollutants contained in 567—subrules 23.1(2), 23.1(3), and 23.1(4); the requirements of such other state rules or orders approved by the Administrator for inclusion in the SIP; and any construction, Title V or other federally approved operating permit conditions.

“Final Title V permit” means the version of a Title V permit issued by the department that has completed all required review procedures.

“Fugitive emissions” are those emissions that could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening.

“Hazardous air pollutant” means any of the air pollutants listed in Section 112 of the Act and 40 CFR §63.2 as adopted by reference in 567—subrule 23.1(4).

“High-risk pollutant” means one of the hazardous air pollutants listed in Table 1 in 40 CFR §63.74 as adopted by reference in 567—subrule 23.1(4).

“Major source” means any stationary source (or any group of stationary sources located on one or more contiguous or adjacent properties and under common control of the same person or of persons under common control) belonging to a single major industrial grouping that is any of the following:

1. A major stationary source of air pollutants, as defined in Section 302 of the Act, that directly emits or has the potential to emit 100 tons per year (tpy) or more of any air pollutant subject to regulation (including any major source of fugitive emissions of any such pollutant). The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purposes of Section 302(j) of the Act, unless the source belongs to one of the stationary source categories listed in this chapter.

2. A major source of hazardous air pollutants according to Section 112 of the Act as follows:

- For pollutants other than radionuclides, any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, in the aggregate, 10 tpy or more of any hazardous air pollutant that has been listed pursuant to Section 112(b) of the Act and these rules or 25 tpy or more of any combination of such hazardous air pollutants. Notwithstanding the previous sentence, emissions from any oil or gas exploration or production well (with its associated equipment) and emission from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources.

- For Title V purposes, all fugitive emissions of hazardous air pollutants are to be considered in determining whether a stationary source is a major source.

- For radionuclides, “major source” shall have the meaning specified by the Administrator by rule.

3. A major stationary source as defined in Part D of Title I of the Act, including:

- For ozone nonattainment areas, sources with the potential to emit 100 tpy or more of volatile organic compounds or oxides of nitrogen in areas classified or treated as classified as “marginal” or “moderate,” 50 tpy or more in areas classified or treated as classified as “serious,” 25 tpy or more in areas classified or treated as classified as “severe” and 10 tpy or more in areas classified or treated as classified as “extreme”; except that the references in this paragraph to 100, 50, 25, and 10 tpy of nitrogen oxides shall not apply with respect to any source for which the Administrator has made a finding, under Section 182(f) (1) or (2) of the Act, that requirements under Section 182(f) of the Act do not apply;

- For ozone transport regions established pursuant to Section 184 of the Act, sources with potential to emit 50 tpy or more of volatile organic compounds;

- For carbon monoxide nonattainment areas (1) that are classified or treated as classified as “serious” and (2) in which stationary sources contribute significantly to carbon monoxide levels, and sources with the potential to emit 50 tpy or more of carbon monoxide;

- For particulate matter (PM₁₀), nonattainment areas classified or treated as classified as “serious,” sources with the potential to emit 70 tpy or more of PM₁₀;

- For the purposes of defining “major source,” a stationary source or group of stationary sources shall be considered part of a single industrial grouping if all of the pollutant emitting activities at such source or group of sources on contiguous or adjacent properties belong to the same major group (i.e., all have the same two-digit code) as described in the Standard Industrial Classification Manual, 1987.

“*Manually operated equipment*” means a machine or tool that is handheld, such as a handheld circular saw or compressed air chisel; a machine or tool for which the work piece is held or manipulated by hand, such as a bench grinder; a machine or tool for which the tool or bit is manipulated by hand, such as a lathe or drill press; and any dust collection system that is part of such machine or tool; but not including any machine or tool for which the extent of manual operation is to control power to the machine or tool and not including any central dust collection system serving more than one machine or tool.

“*Maximum achievable control technology (MACT) emission limitation for existing sources*” means the definition adopted by reference in 567—subrule 23.1(4).

“*Maximum achievable control technology (MACT) emission limitation for new sources*” means the definition adopted by reference in 567—subrule 23.1(4).

“*Maximum achievable control technology (MACT) floor*” means the definition adopted by reference in 567—subrule 23.1(4).

“*New Title IV affected source or unit*” means a unit that commences commercial operation on or after November 15, 1990, including any such unit that serves a generator with a nameplate capacity of 25 MWE or less or that is a simple combustion turbine.

“*Nonattainment area*” means an area so designated by the Administrator, acting pursuant to Section 107 of the Act.

“*Permit modification*” means a revision to a Title V operating permit that cannot be accomplished under the provisions for administrative permit amendments found in 567—24.111(455B). A permit modification for purposes of the acid rain portion of the permit shall be governed by the regulations pertaining to acid rain found in 567—24.120(455B) through 567—24.146(455B). This definition of “permit modification” shall be used solely for purposes of this chapter governing Title V operating permits.

“Permit revision” means any permit modification or administrative permit amendment.

“Permitting authority” means the Iowa department of natural resources or the director thereof.

“Potential to emit” means the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation is enforceable by the Administrator. This term does not alter or affect the use of this term for any other purposes under the Act, or the term “capacity factor” as used in Title IV of the Act or the regulations relating to acid rain.

For the purpose of determining potential to emit for country grain elevators, the provisions set forth in 567—subrule 22.10(2) shall apply.

For purposes of calculating potential to emit for emergency generators, “maximum capacity” means one of the following:

1. 500 hours of operation annually, if the generator has actually been operated less than 500 hours per year for the past five years;
2. 8,760 hours of operation annually, if the generator has actually been operated more than 500 hours in one of the past five years; or
3. The number of hours specified in a state or federally enforceable limit.

“Proposed Title V permit,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“Regulated air contaminant” means the same as “regulated air pollutant.”

“Regulated air pollutant” means the following:

1. Nitrogen oxides or any volatile organic compounds;
2. Any pollutant for which a national ambient air quality standard has been promulgated;
3. Any pollutant that is subject to any standard promulgated under Section 111 of the Act;
4. Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Act; or
5. Any pollutant subject to a standard promulgated under Section 112 or other requirements established under Section 112 of the Act, including Sections 112(g), (j), and (r) of the Act, including the following:
 - Any pollutant subject to requirements under Section 112(j) of the Act. If the Administrator fails to promulgate a standard by the date established pursuant to Section 112(e) of the Act, any pollutant for which a subject source would be major shall be considered to be regulated on the date 18 months after the applicable date established pursuant to Section 112(e) of the Act; and
 - Any pollutant for which the requirements of Section 112(g)(2) of the Act have been met, but only with respect to the individual source subject to the Section 112(g)(2) requirement.
6. With respect to Title V, particulate matter, except for PM₁₀, is not considered a regulated air pollutant for the purpose of determining whether a source is considered to be a major source.

“Regulated air pollutant or contaminant (for fee calculation),” which is used only for purposes of 567—Chapter 30, means any regulated air pollutant or contaminant except the following:

1. Carbon monoxide;
2. Particulate matter, excluding PM₁₀;
3. Any pollutant that is a regulated air pollutant solely because it is a Class I or II substance subject to a standard promulgated under or established by Title VI of the Act;
4. Any pollutant that is a regulated pollutant solely because it is subject to a standard or regulation under Section 112(r) of the Act;
5. Greenhouse gas, as defined in 567—22.1(455B).

“Renewal” means the process by which a permit is reissued at the end of its term.

“Responsible official” means one of the following:

1. For a corporation: a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is

responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

- The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

- The delegation of authority to such representative is approved in advance by the permitting authority;

2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

3. For a municipality, state, federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this chapter, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a regional Administrator of EPA); or

4. For Title IV affected sources:

- The designated representative insofar as actions, standards, requirements, or prohibitions under Title IV of the Act or the regulations promulgated thereunder are concerned; and

- The designated representative for any other purposes under this chapter or the Act.

“Section 502(b)(10) changes,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“State implementation plan” or *“SIP”* means the plan adopted by the state of Iowa and approved by the Administrator that provides for implementation, maintenance, and enforcement of such primary and secondary ambient air quality standards as are adopted by the Administrator, pursuant to the Act.

“Stationary source” means any building, structure, facility, or installation that emits or may emit any regulated air pollutant or any pollutant listed under Section 112(b) of the Act.

“Stationary source categories” means any of the following classes of sources:

1. Coal cleaning plants with thermal dryers;
2. Kraft pulp mills;
3. Portland cement plants;
4. Primary zinc smelters;
5. Iron and steel mills;
6. Primary aluminum ore reduction plants;
7. Primary copper smelters;
8. Municipal incinerators capable of charging more than 250 tons of refuse per day;
9. Hydrofluoric, sulfuric, or nitric acid plants;
10. Petroleum refineries;
11. Lime plants;
12. Phosphate rock processing plants;
13. Coke oven batteries;
14. Sulfur recovery plants;
15. Carbon black plants using the furnace process;
16. Primary lead smelters;
17. Fuel conversion plants;
18. Sintering plants;
19. Secondary metal production plants;
20. Chemical process plants—The term chemical processing plant shall not include ethanol production facilities that produce ethanol by natural fermentation included in North American Industry Classification System (NAICS) code 325193 or 312140;
21. Fossil-fuel boilers, or combinations thereof, totaling more than 250 million Btu per hour heat input;
22. Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
23. Taconite ore processing plants;
24. Glass fiber processing plants;
25. Charcoal production plants;
26. Fossil fuel-fired steam electric plants of more than 250 million Btu per hour heat input;

27. Any other stationary source category, that as of August 7, 1980, is regulated under Section 111 or 112 of the Act.

“Subject to regulation,” as this definition is set forth in 40 CFR §70.2, is adopted by reference.

“Title V permit” means an operating permit under Title V of the Act.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.101(455B) Applicability of Title V operating permit requirements.

24.101(1) Except as provided in 567—24.102(455B), any person who owns or operates any of the following sources shall obtain a Title V operating permit and shall submit fees as required in 567—Chapter 30:

- a. Any affected source subject to the provisions of Title IV of the Act;
- b. Any major source;
- c. Any source, including any nonmajor source, subject to a standard, limitation, or other requirement under Section 111 of the Act (567—subrule 23.1(2), new source performance standards; 567—subrule 23.1(5), emission guidelines);
- d. Any source, including any area source, subject to a standard or other requirement under Section 112 of the Act (567—subrules 23.1(3) and 23.1(4), emission standards for hazardous air pollutants), except that a source is not required to obtain a Title V permit solely because it is subject to regulations or requirements under Section 112(r) of the Act;
- e. Any solid waste incinerator unit required to obtain a Title V permit under Section 129(e) of the Act;
- f. Any source category designated by the Administrator pursuant to 40 CFR §70.3 as amended through December 19, 2005.

24.101(2) Any nonmajor source required to obtain a Title V operating permit pursuant to 24.101(1) is required to obtain a Title V permit only for the emissions units and related equipment causing the source to be subject to the Title V program.

24.101(3) Reserved.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.102(455B) Source category exemptions.

24.102(1) All sources listed in 24.101(1) that are not major sources, affected sources subject to the provisions of Title IV of the Act, or solid waste incineration units required to obtain a permit pursuant to Section 129(e) of the Act are exempt from the obligation to obtain a Title V permit until such time as the Administrator completes a rulemaking to determine how the program should be structured for nonmajor sources and the appropriateness of any permanent exemptions in addition to those provided for in 24.102(3).

24.102(2) In the case of nonmajor sources subject to a standard or other requirement under either Section 111 or Section 112 of the Act, the Administrator will determine at the time the new or amended standard is promulgated whether to exempt any or all such applicable sources from the requirement to obtain a Title V permit.

24.102(3) The following source categories are exempt from the obligation to obtain a Title V permit:

- a. All sources and source categories that would be required to obtain a Title V permit solely because they are subject to 40 CFR 60, Subpart AAA, Standards of Performance for New Residential Wood Heaters;
- b. All sources and source categories that would be required to obtain a Title V permit solely because they are subject to 40 CFR 61, Subpart M, National Emission Standard for Hazardous Air Pollutants for Asbestos, Section 61.145, Standard for Demolition and Renovation, as adopted by reference in 567—subrule 23.1(3);
- c. All sources and source categories that would be required to obtain a Title V permit solely because they are subject to any of the following subparts from 40 CFR 63:
 - (1) Subpart M, National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities, as adopted by reference in 567—subrule 23.1(4).

(2) Subpart N, National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks, as adopted by reference in 567—subrule 23.1(4).

(3) Subpart O, Ethylene Oxide Emissions Standards for Sterilization Facilities, as adopted by reference in 567—subrule 23.1(4).

(4) Subpart T, National Emission Standards for Halogenated Solvent Cleaning, as adopted by reference in 567—subrule 23.1(4).

(5) Subpart RRR, National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production, as adopted by reference in 567—subrule 23.1(4).

(6) Subpart VVV, National Emission Standards for Hazardous Air Pollutants: Publicly Owned Treatment Works, as adopted by reference in 567—subrule 23.1(4).

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.103(455B) Insignificant activities. The following are insignificant activities for purposes of the Title V application if not needed to determine the applicability of or to impose any applicable requirement. Title V permit emissions fees are not required from insignificant activities pursuant to 567—paragraph 30.4(2) “f.”

24.103(1) *Insignificant activities excluded from Title V operating permit application.* In accordance with 40 CFR §70.5, these activities need not be included in the Title V permit application:

- a. Mobile internal combustion and jet engines, marine vessels, and locomotives.
- b. Equipment, other than anaerobic lagoons, used for cultivating land, harvesting crops, or raising livestock. This exemption is not applicable if the equipment is used to remove substances from grain that were applied to the grain by another person. This exemption also is not applicable to equipment used by a person to manufacture commercial feed, as defined in Iowa Code section 198.3, when that feed is normally not fed to livestock:
 - (1) Owned by that person or another person, and
 - (2) Located in a feedlot, as defined in Iowa Code section 172D.1(6), or in a confinement building owned or operated by that person, and
 - (3) Located in this state.
- c. Equipment or control equipment that eliminates all emissions to the atmosphere.
- d. Equipment (other than anaerobic lagoons) or control equipment that emits odors unless such equipment or control equipment also emits particulate matter or any other air pollutant or contaminant.
- e. Air conditioning or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment.
- f. Residential wood heaters, cookstoves, or fireplaces.
- g. The equipment in laboratories used exclusively for nonproduction chemical and physical analyses. Nonproduction analyses means analyses incidental to the production of a good or service and includes analyses conducted for quality assurance or quality control activities, or for the assessment of environmental impact.
- h. Recreational fireplaces.
- i. Barbecue pits and cookers except at a meat packing plant or a prepared meat manufacturing facility.
- j. Stacks or vents to prevent escape of sewer gases through plumbing traps for systems handling domestic sewage only. Systems that include any industrial waste are not exempt.
- k. Retail gasoline- and diesel fuel-handling facilities.
- l. Photographic process equipment by which an image is reproduced upon material sensitized to radiant energy.
- m. Equipment used for hydraulic or hydrostatic testing.
- n. General vehicle maintenance and servicing activities at the source, other than gasoline fuel handling.
- o. Cafeterias, kitchens, and other facilities used for preparing food or beverages primarily for consumption at the source.

p. Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing provided no organic solvent has been added to the water, the boiling point of the additive is not less than 100°C (212°F), and the water is not heated above 65.5°C (150°F).

q. Administrative activities, including but not limited to paper shredding, copying, photographic activities, and blueprinting machines. This does not include incinerators.

r. Laundry dryers, extractors, and tumblers processing clothing, bedding, and other fabric items used at the source that have been cleaned with water solutions of bleach or detergents provided that any organic solvent present in such items before processing that is retained from cleanup operations shall be addressed as part of the volatile organic compound emissions from use of cleaning materials.

s. Housekeeping activities for cleaning purposes, including collecting spilled and accumulated materials at the source, but not including use of cleaning materials that contain organic solvent.

t. Refrigeration systems, including storage tanks used in refrigeration systems, but excluding any combustion equipment associated with such systems.

u. Activities associated with the construction, on-site repair, maintenance or dismantlement of buildings, utility lines, pipelines, wells, excavations, earthworks and other structures that do not constitute emission units.

v. Storage tanks of organic liquids with a capacity of less than 500 gallons, provided the tank is not used for storage of any material listed as a hazardous air pollutant pursuant to Section 112(b) of the Act.

w. Piping and storage systems for natural gas, propane, and liquified petroleum gas, excluding pipeline compressor stations and associated storage facilities.

x. Water treatment or storage systems, as follows:

(1) Systems for potable water or boiler feedwater.

(2) Systems, including cooling towers, for process water provided that such water has not been in direct or indirect contact with process steams that contain volatile organic material or materials listed as hazardous air pollutants pursuant to Section 112(b) of the Act.

y. Lawn care, landscape maintenance, and groundskeeping activities.

z. Containers, reservoirs, or tanks used exclusively in dipping operations to coat objects with oils, waxes, or greases, provided no organic solvent has been mixed with such materials.

aa. Cold cleaning degreasers that are not in-line cleaning machines, where the vapor pressure of the solvents used never exceeds 2 kPa (15 mmHg or 0.3 psi) measured at 38°C (100°F) or 0.7 kPa (5 mmHg or 0.1 psi) at 20°C (68°F). (Note: Cold cleaners subject to 40 CFR Part 63 Subpart T are not considered insignificant activities.)

bb. Manually operated equipment used for buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, scarfing, surface grinding or turning.

cc. Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.), when the product is used at a source in the same manner as normal consumer use.

dd. Activities directly used in the diagnosis and treatment of disease, injury or other medical condition.

ee. Firefighting activities and training in preparation for fighting fires conducted at the source. (Note: Written notification pursuant to 567—paragraph 23.2(3)“g” is required at least ten working days before such action commences.)

ff. Activities associated with the construction, repair, or maintenance of roads or other paved or open areas, including operation of street sweepers, vacuum trucks, spray trucks, and other vehicles related to the control of fugitive emissions of such roads or other areas.

gg. Storage and handling of drums or other transportable containers when the containers are sealed during storage and handling.

hh. Individual points of emission or activities as follows:

(1) Individual flanges, valves, pump seals, pressure relief valves, and other individual components that have the potential for leaks.

(2) Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions.

(3) Individual features of an emission unit such as each burner and sootblower in a boiler or each use of cleaning materials on a coating or printing line.

ii. Construction activities at a source solely associated with the modification or building of a facility, an emission unit, or other equipment at the source. (Note: Notwithstanding the status of this activity as insignificant, a particular activity that entails modification or construction of an emission unit or construction of air pollution control equipment may require a construction permit pursuant to 567—22.1(455B) and may subsequently require a revised Title V operating permit. A revised Title V operating permit may also be necessary for operation of an emission unit after completion of a particular activity if the existing Title V operating permit does not accommodate the new state of the emission unit.)

jj. Activities at a source associated with the maintenance, repair, or dismantlement of an emission unit or other equipment installed at the source, including preparation for maintenance, repair, or dismantlement, and preparation for subsequent startup, including preparation of a shutdown vessel for entry, replacement of insulation, welding and cutting, and steam purging of a vessel prior to startup.

24.103(2) *Insignificant activities that must be included in Title V operating permit applications.*

a. The following are insignificant activities based on potential emissions:

An emission unit that has the potential to emit less than:

5 tons per year of any regulated air pollutant, except:

2.5 tons per year of PM₁₀,

0.52 tons per year of PM_{2.5} (does not apply to emission units for which initiation of construction, installation, reconstruction, or alteration (as defined in rule 567—22.1(455B)) occurred on or before October 23, 2013),

2 lbs per year of lead or lead compounds (40 lbs per year for emission units for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013),

2,500 lbs per year of any combination of hazardous air pollutants except high-risk pollutants,

1,000 lbs per year of any individual hazardous air pollutant except high-risk pollutants,

250 lbs per year of any combination of high-risk pollutants, or

100 lbs per year of any individual high-risk pollutant.

The definition of “high-risk pollutant” is found in 567—24.100(455B).

b. The following are insignificant activities:

(1) Fuel-burning equipment for indirect heating and reheating furnaces or indirect cooling units using natural or liquefied petroleum gas with a capacity of less than 10 million Btu per hour input per combustion unit.

(2) Fuel-burning equipment for indirect heating or indirect cooling for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013, with a capacity of less than 1 million Btu per hour input per combustion unit when burning coal, untreated wood, or fuel oil.

Fuel-burning equipment for indirect heating or indirect cooling for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred after October 23, 2013, with a capacity of less than 1 million Btu per hour input per combustion unit when burning untreated wood, untreated seeds or pellets, other untreated vegetative materials, or fuel oil provided that the equipment and the fuel meet the condition specified in 24.103(2) “b”(2). Used oils meeting the specification from 40 CFR §279.11 as amended through July 14, 2006, are acceptable fuels. When combusting used oils, the equipment must have a maximum rated capacity of 50,000 Btu or less per hour of heat input or a maximum throughput of 3,600 gallons or less of used oils per year. When combusting untreated wood, untreated seeds or pellets, or other untreated vegetative materials, the equipment must have a maximum rated capacity of 265,600 Btu or less per hour or a maximum throughput of 378,000 pounds or less per year of each fuel or any combination of fuels.

(3) Incinerators with a rated refuse burning capacity of less than 25 pounds per hour for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred on or before October 23, 2013. Incinerators for which initiation of construction, installation, reconstruction, or alteration (as defined in 567—22.1(455B)) occurred after October 23, 2013, shall not

qualify as an insignificant activity. After October 23, 2013, only paint clean-off ovens with a maximum rated capacity of less than 25 pounds per hour that do not combust lead-containing materials shall qualify as an insignificant activity.

(4) Gasoline, diesel fuel, or oil storage tanks with a capacity of 1,000 gallons or less and an annual throughput of less than 40,000 gallons.

(5) A storage tank that contains no volatile organic compounds above a vapor pressure of 0.75 pounds per square inch at the normal operating temperature of the tank when other emissions from the tank do not exceed the levels in 24.103(2)“a.”

(6) Internal combustion engines that are used for emergency response purposes with a brake horsepower rating of less than 400 measured at the shaft. The manufacturer’s nameplate rating at full load shall be defined as the brake horsepower output at the shaft. Emergency engines that are subject to any of the following federal regulations are not considered to be insignificant activities for purposes of 567—24.103(455B):

1. New source performance standards (NSPS) for stationary compression ignition internal combustion engines (40 CFR Part 60, Subpart IIII);

2. New source performance standards (NSPS) for stationary spark ignition internal combustion engines (40 CFR Part 60, Subpart JJJJ); or

3. National emission standards for hazardous air pollutants (NESHAP) for reciprocating internal combustion engines (40 CFR Part 63, Subpart ZZZZ).

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.104(455B) Requirement to have a Title V permit. No source may operate after the time that it is required to submit a timely and complete application, except in compliance with a properly issued Title V operating permit. However, if a source submits a timely and complete application for permit issuance (including renewal), the source’s failure to have a permit is not a violation of this chapter until the director takes final action on the permit application, except as noted in this rule. In that case, all terms and conditions of the permit shall remain in effect until the renewal permit has been issued or denied.

24.104(1) This protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit, by the deadline specified in writing by the director, any additional information identified as being needed to process the application.

24.104(2) Sources making permit revisions pursuant to 567—24.110(455B) shall not be in violation of this rule.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.105(455B) Title V permit applications.

24.105(1) Duty to apply. For each source required to obtain a Title V operating permit, the owner or operator or designated representative, where applicable, shall submit a complete and timely application in the electronic format specified by the department, if electronic submittal is provided. An owner or operator of a source required to obtain a Title V permit pursuant to 24.101(1) shall submit all required fees as required in 567—Chapter 30.

a. Timely application. Each owner or operator applying for a Title V permit shall submit an application as follows:

(1) Reserved.

(2) Initial application for a new source. The owner or operator of a stationary source that commenced construction or reconstruction after April 20, 1994, or that otherwise became subject to the requirement to obtain a Title V permit after April 20, 1994, shall submit an application to the department within 12 months of becoming subject to the Title V permit requirements.

(3) Application related to 112(g), PSD, or nonattainment. The owner or operator of a stationary source that is subject to Section 112(g) of the Act, that is subject to 567—24.4(455B) or 567—33.3(455B) (prevention of significant deterioration (PSD)), or that is subject to 567—24.5(455B) or 567—31.3(455B) (nonattainment area permitting) shall submit an application to the department within 12 months of commencing operation. In cases in which an existing Title V permit would prohibit such construction or

change in operation, the owner or operator must obtain a Title V permit revision before commencing operation.

(4) **Renewal application.** The owner or operator of a stationary source with a Title V permit shall submit an application to the department for a permit renewal at least 6 months prior to, but not more than 18 months prior to, the date of permit expiration.

(5) **Changes allowed without a permit revision (off-permit revision).** The owner or operator of a stationary source with a Title V permit who is proposing a change that is allowed without a Title V permit revision (an off-permit revision) as specified in 567—24.110(455B) shall submit to the department a written notification as specified in 567—24.110(455B) at least 30 days prior to the proposed change.

(6) **Application for an administrative permit amendment.** Prior to implementing a change that satisfies the requirements for an administrative permit amendment as set forth in 567—24.111(455B), the owner or operator shall submit to the department an application for an administrative amendment as specified in 567—24.111(455B).

(7) **Application for a minor permit modification.** Prior to implementing a change that satisfies the requirements for a minor permit modification as set forth in 567—24.112(455B), the owner or operator shall submit to the department an application for a minor permit modification as specified in 567—24.112(455B).

(8) **Application for a significant permit modification.** The owner or operator of a source that satisfies the requirements for a significant permit modification as set forth in 567—24.113(455B) shall submit to the department an application for a significant permit modification as specified in 567—24.113(455B) within three months after the commencing operation of the changed source. However, if the existing Title V permit would prohibit such construction or change in operation, the owner or operator shall not commence operation of the changed source until the department issues a revised Title V permit that allows the change.

b. Complete application. To be deemed complete, an application must provide all information required pursuant to 24.105(2), except that applications for permit revision need supply such information only if it is related to the proposed change.

24.105(2) Standard application form and required information. To apply for a Title V permit, the standard application form shall be submitted in the electronic format specified by the department, if electronic submittal is provided.

The information submitted must be sufficient to evaluate the source and its application and to determine all applicable requirements and to evaluate the fee amount required by 567—30.4(455B). If a source is not a major source and is applying for a Title V operating permit solely because of a requirement imposed by 24.101(1)“c” and 24.101(1)“d,” then the information provided in the operating permit application may cover only the emissions units that trigger Title V applicability. The applicant shall submit the information called for by the application form for each emissions unit to be permitted, except for activities that are insignificant according to the provisions of 567—24.103(455B). The applicant shall provide a list of all insignificant activities and specify the basis for the determination of insignificance for each activity.

Unless otherwise specified in 24.128(4), nationally standardized forms shall be used for the acid rain portions of permit applications and compliance plans, as required by regulations promulgated under Title IV of the Act. The standard application form and any attachments shall require that the following information be provided:

a. Identifying information, including company name and address (or plant or source name if different from the company name), owner’s name and agent, and telephone number and names of plant site manager/contact.

b. A description of the source’s processes and products (by two-digit Standard Industrial Classification Code), including any associated with each alternate scenario identified by the applicant.

c. The following emissions-related information shall be submitted to the department:

(1) The following information to the extent it is needed to determine or regulate emissions: fuels, fuel use, raw materials, production rates, and operating schedules.

(2) Identification and description of air pollution control equipment.

(3) Identification and description of compliance monitoring devices or activities.

(4) Limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated pollutants.

(5) Other information required by any applicable requirement (including information related to stack height limitations developed pursuant to Section 123 of the Act).

(6) Calculations on which the information in 24.105(2) “c”(1) to (5) above is based.

(7) Fugitive emissions from a source shall be included in the permit application in the same manner as stack emissions, regardless of whether the source category in question is included in the list of sources contained in the definition of major source.

d. The following air pollution control requirements:

(1) Citation and description of all applicable requirements, and

(2) Description of or reference to any applicable test method for determining compliance with each applicable requirement.

e. Other specific information that may be necessary to implement and enforce other applicable requirements of the Act or of these rules or to determine the applicability of such requirements.

f. An explanation of any proposed exemptions from otherwise applicable requirements.

g. Additional information as determined to be necessary by the director to define alternative operating scenarios identified by the source pursuant to 24.108(12) or to define permit terms and conditions relating to operational flexibility and emissions trading pursuant to 24.108(11) and 567—24.112(455B).

h. A compliance plan that contains the following:

(1) A description of the compliance status of the source with respect to all applicable requirements.

(2) The following statements regarding compliance status: For applicable requirements with which the stationary source is in compliance, a statement that the stationary source will continue to comply with such requirements. For applicable requirements that will become effective during the permit term, a statement that the stationary source will meet such requirements on a timely basis. For requirements for which the stationary source is not in compliance at the time of permit issuance, a narrative description of how the stationary source will achieve compliance with such requirements.

(3) A compliance schedule that contains the following:

1. For applicable requirements with which the stationary source is in compliance, a statement that the stationary source will continue to comply with such requirements. For applicable requirements that will become effective during the permit term, a statement that the stationary source will meet such requirements on a timely basis. A statement that the stationary source will meet in a timely manner applicable requirements that become effective during the permit term shall satisfy this provision, unless a more detailed schedule is expressly required by the applicable requirement.

2. A compliance schedule for sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the stationary source will be in noncompliance at the time of permit issuance.

3. This compliance schedule shall resemble and be at least as stringent as any compliance schedule contained in any judicial consent decree or administrative order to which the source is subject. Any compliance schedule shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based.

(4) A schedule for submission of certified progress reports no less frequently than every six months for sources required to have a compliance schedule in the permit.

i. Requirements for compliance certification, including the following:

(1) A certification of compliance for the prior year with all applicable requirements certified by a responsible official consistent with 24.107(4) and Section 114(a)(3) of the Act.

(2) A statement of methods used for determining compliance, including a description of monitoring, recordkeeping, and reporting requirements and test methods.

(3) A schedule for submission of compliance certifications for each compliance period (one year unless required for a shorter time period by an applicable requirement) during the permit term, which shall be submitted annually, or more frequently if required by an underlying applicable requirement or by the director.

(4) A statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification requirements of the Act.

(5) Notwithstanding any other provisions of these rules, for the purposes of submission of compliance certifications, an owner or operator is not prohibited from using monitoring as required by 24.108(3), 24.108(4), or 24.108(5) and incorporated into a Title V operating permit in addition to any specified compliance methods.

j. The compliance plan content requirements specified in these rules shall apply and be included in the acid rain portion of a compliance plan for a Title IV affected source, except as specifically superseded by regulations promulgated under Title IV of the Act, with regard to the schedule and method(s) the source shall use to achieve compliance with the acid rain emissions limitations.

24.105(3) *Hazardous air pollutant early reduction application.* Anyone requesting a compliance extension from a standard issued under Section 112(d) of the Act must submit with the Title V permit application information that complies with the requirements established in 567—paragraph 23.1(4) “d.”

24.105(4) *Acid rain application content.* The acid rain application content shall be as prescribed in the acid rain rules found in 567—24.128(455B) and 567—24.129(455B).

24.105(5) *More than one Title V operating permit for a stationary source.* Following application made pursuant to 24.105(1), the department may, at its discretion, issue more than one Title V operating permit for a stationary source, provided that the owner or operator does not have, and does not propose to have, a sourcewide emission limit or a sourcewide alternative operating scenario.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.106(455B) Annual Title V emissions inventory.

24.106(1) *Emissions fee.* Fees shall be paid as set forth in 567—Chapter 30.

24.106(2) *Emissions inventory and documentation due dates.* The emissions inventory shall be submitted through the electronic format specified by the department. An owner or operator shall, by March 31, submit documentation of actual emissions for the previous calendar year. The department shall calculate the total statewide Title V emissions for the prior calendar year and make this information available to the public no later than April 30 of each year.

24.106(3) *Correction of errors.* If an owner or operator, or the department, finds an error in a Title V emissions inventory, the owner or operator shall submit to the department revised forms making the necessary corrections to the Title V emissions inventory. Corrected forms shall be submitted as soon as possible after the errors are discovered or upon notification by the department.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.107(455B) Title V permit processing procedures.

24.107(1) *Action on application.*

a. *Conditions for action on application.* A permit, permit modification, or renewal may be issued only if all of the following conditions have been met:

(1) The permitting authority has received a complete application for a permit, permit modification, or permit renewal, except that a complete application need not be received before issuance of a general permit under 567—24.109(455B);

(2) Except for modifications qualifying for minor permit modification procedures under 567—24.112(455B), the permitting authority has complied with the requirements for public participation under 24.107(6);

(3) The permitting authority has complied with the requirements for notifying and responding to affected states under 24.107(7);

(4) The conditions of the permit provide for compliance with all applicable requirements and the requirements of this chapter;

(5) The Administrator has received a copy of the proposed permit and any notices required under 24.107(7), and has not objected to issuance of the permit under 24.107(7) within the time period specified therein;

(6) If the Administrator has properly objected to the permit pursuant to the provisions of 40 CFR §70.8(d) as amended to July 21, 1992, or 24.107(7), then the permitting authority may issue a permit only after the Administrator's objection has been resolved; and

(7) No permit for a solid waste incineration unit combusting municipal waste subject to the provisions of Section 129(e) of the Act may be issued by an agency, instrumentality, or person that is also responsible, in whole or part, for the design and construction or operation of the unit.

b. Time for action on application. The permitting authority shall take final action on each complete permit application (including a request for permit modification or renewal) within 18 months of receiving a complete application, except in the following instances:

(1) When otherwise provided under Title V or Title IV of the Act for the permitting of affected sources under the acid rain program.

(2) In the case of initial permit applications, the permitting authority may take up to three years from the effective date of the program to take final action on an application.

(3) Any complete permit applications containing an early reduction demonstration under Section 112(i)(5) of the Act shall be acted upon within nine months of receipt of the complete application.

c. Prioritization of applications. The director shall give priority to action on Title V applications involving construction or modification for which a construction permit pursuant to 567—subrule 22.1(1) or Title I of the Act, Parts C and D, is also required. The director also shall give priority to action on Title V applications involving early reduction of hazardous air pollutants pursuant to 567—paragraph 23.1(4)“d.”

d. Completeness of applications. The department shall promptly provide notice to the applicant of whether the application is complete. Unless the permitting authority requests additional information or otherwise notifies the applicant of incompleteness within 60 days of receipt of an application, the application shall be deemed complete. If, while processing an application that has been determined to be complete, the permitting authority determines that additional information is necessary to evaluate or take final action on that application, the permitting authority may request in writing such information and set a reasonable deadline for a response. The source's ability to operate without a permit, as set forth in 567—24.104(455B), shall be in effect from the date the application is determined to be complete until the final permit is issued, provided that the applicant submits any requested additional information by the deadline specified by the permitting authority. For modifications processed through minor permit modification procedures, a completeness determination shall not be required.

e. Decision to deny a permit application. The director shall decide to issue or deny the permit. The director shall notify the applicant as soon as practicable that the application has been denied. Upon denial of the permit, the provisions of 24.107(1)“d” shall no longer be applicable. The new application shall be regarded as an entirely separate application containing all the required information and shall not depend on references to any documents contained in the previous denied application.

f. Fact sheet. A draft permit and fact sheet shall be prepared by the permitting authority. The fact sheet shall include the rationale for issuance or denial of the permit; a brief description of the type of facility; a summary of the type and quantity of air pollutants being emitted; a brief summary of the legal and factual basis for the draft permit conditions, including references to applicable statutes and rules; a description of the procedures for reaching final decision on the draft permit, including the comment period, the address where comments will be received, and procedures for requesting a hearing and the nature of the hearing; and the name and telephone number for a person to contact for additional information. The permitting authority shall provide the fact sheet to the EPA and to any other person who requests it.

g. Relation to construction permits. The submittal of a complete application shall not affect the requirement that any source have a construction permit under Title I of the Act and 567—subrule 22.1(1).

24.107(2) Confidential information. If a source has submitted information with an application under a claim of confidentiality to the department, the source shall also submit a copy of such information directly to the Administrator. Requests for confidentiality must comply with 561—Chapter 2.

24.107(3) Duty to supplement or correct application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that

become applicable to the source after the date the source filed a complete application but prior to release of a draft permit. Applicants who have filed a complete application shall have 60 days following notification by the department to file any amendments. Any MACT determinations in permit applications will be evaluated based on the standards, limitations, or levels of technology existing on the date the initial application is deemed complete.

24.107(4) *Certification of truth, accuracy, and completeness.* Any application form, report, or compliance certification submitted pursuant to these rules shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under these rules shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

24.107(5) *Early reduction application evaluation.* Hazardous air pollutant early reduction application evaluation review shall follow the procedures established in 567—paragraph 23.1(4) “d.”

24.107(6) *Public notice and public participation.*

a. The permitting authority shall provide public notice and an opportunity for public comments, including an opportunity for a hearing, before taking any of the following actions: issuance, denial, or renewal of a permit; or significant modification, revocation, or reissuance of a permit.

b. Notice shall be given by posting of the notice, including the draft permit, for the duration of the public comment period on a public website identified by the permitting authority and designed to give general public notice. Notice also shall be given to persons on a mailing list developed by the permitting authority, including those who request in writing to be on the list. The department may use other means if necessary to ensure adequate notice to the affected public.

c. The public notice shall include the following:

- (1) Identification of the Title V source.
- (2) Name and address of the permittee.
- (3) Name and address of the permitting authority processing the permit.
- (4) The activity or activities involved in the permit action.
- (5) The emissions change involved in any permit modification.
- (6) The air pollutants or contaminants to be emitted.
- (7) The time and place of any possible public hearing.
- (8) A statement that any person may submit written and signed comments, or may request a public hearing, or both, on the proposed permit. A statement of procedures to request a public hearing shall be included.

(9) The name, address, and telephone number of a person from whom additional information may be obtained. Information entitled to confidential treatment pursuant to Section 114(c) of the Act or state law shall not be released pursuant to this provision. However, the contents of a Title V permit shall not be entitled to protection under Section 114(c) of the Act.

(10) Locations where copies of the permit application and the proposed permit may be reviewed and the times at which they shall be available for public inspection.

d. At least 30 days shall be provided for public comment. Notice of any public hearing shall be given at least 30 days in advance of the hearing.

e. Any person may request a public hearing. A request for a public hearing shall be in writing and shall state the person's interest in the subject matter and the nature of the issues proposed to be raised at the hearing. The director shall hold a public hearing upon finding, on the basis of requests, a significant degree of relevant public interest in a draft permit. A public hearing also may be held at the director's discretion.

f. The director shall keep a record of the commenters and of the issues raised during the public participation process and shall prepare written responses to all comments received. At the time a final decision is made, the record and copies of the director's responses shall be made available to the public.

g. The permitting authority shall provide notice and opportunity for participation by affected states as provided by 24.107(7).

24.107(7) *Permit review by the EPA and affected states.*

a. *Transmission of information to the Administrator.* Except as provided in 24.107(2) or waived by the Administrator, the director shall make available to the Administrator each permit application or

modification application, including any attachments and compliance plans; each proposed permit; and each final permit. For purposes of this subrule, the application information may be provided in a computer-readable format compatible with the Administrator's national database management system.

b. Review by affected states. The director shall provide notice of each draft permit to any affected state on or before the time that public notice is provided to the public pursuant to 24.107(6), except to the extent that 24.112(3) requires the timing of the notice to be different. If the director refuses to accept a recommendation of any affected state, submitted during the public or affected state review period, then the director shall notify the Administrator and the affected state in writing. The notification shall include the director's reasons for not accepting the recommendation(s). The director shall not be required to accept recommendations that are not based on applicable requirements.

c. EPA objection. No permit for which an application must be transmitted to the Administrator shall be issued if the Administrator objects in writing to its issuance as not in compliance with the applicable requirements within 45 days after receiving a copy of the proposed permit and necessary supporting information under 24.107(7) "a." Within 90 days after the date of an EPA objection made pursuant to this rule, the director shall submit a response to the objection, if the objection has not been resolved.

24.107(8) Public petitions to the Administrator regarding Title V permits.

a. If the Administrator does not object to a proposed permit, any person may petition the Administrator within 60 days after the expiration of the Administrator's 45-day review period to make an objection pursuant to 40 CFR §70.8(d).

b. Any person who petitions the Administrator pursuant to the provisions of 40 CFR §70.8(d) shall notify the department by certified mail of such petition immediately, and in no case more than ten days following the date the petition is submitted to the EPA. Such notice shall include a copy of the petition submitted to the EPA and a separate written statement detailing the grounds for the objection(s) and whether the objection(s) was raised during the public comment period. A petition for review shall not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day EPA review period and prior to the Administrator's objection.

c. If the Administrator objects to the permit as a result of a petition filed pursuant to 40 CFR §70.8(d), then the director shall not issue a permit until the Administrator's objection has been resolved. However, if the director has issued a permit prior to receipt of the Administrator's objection, and the Administrator modifies, terminates, or revokes such permit, consistent with the procedures in 40 CFR §70.7, then the director may thereafter issue only a revised permit that satisfies the Administrator's objection. In any case, the source shall not be in violation of the requirement to have submitted a timely and complete application.

24.107(9) Application denial. A Title V permit application may be denied if:

a. The director finds that a source is not in compliance with any applicable requirement; or

b. An applicant knowingly submits false information in a permit application.

24.107(10) Retention of permit records. The director shall keep all records associated with each permit for a minimum of five years.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.108(455B) Permit content. Each Title V permit shall include the following elements:

24.108(1) Enforceable emission limitations and standards. Each permit issued pursuant to this chapter shall include emissions limitations and standards, including those operational requirements and limitations that ensure compliance with all applicable requirements at the time of permit issuance.

a. The permit shall specify and reference the origin of and authority for each term or condition and identify any difference in form as compared to the applicable requirement upon which the term or condition is based.

b. The permit shall state that, where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions shall be incorporated into the permit and shall be enforceable by the Administrator.

c. If an applicable implementation plan allows a determination of an alternative emission limit at a Title V source, equivalent to that contained in the plan, to be made in the permit issuance, renewal, or significant modification process, and the state elects to use such process, then any permit containing such

equivalency determination shall contain provisions to ensure that any resulting emissions limit has been demonstrated to be quantifiable, accountable, enforceable, and based on replicable procedures.

d. If an early reduction demonstration is approved as part of the Title V permit application, the permit shall include enforceable alternative emissions limitations for the source reflecting the reduction that qualified the source for the compliance extension.

e. Fugitive emissions from a source shall be included in the permit in the same manner as stack emissions, regardless of whether the source category in question is included in the list of sources contained in the definition of major source.

f. For all major sources, all applicable requirements for all relevant emissions units in the major source shall be included in the permit.

24.108(2) Permit duration. The permit shall specify a fixed term not to exceed five years except:

a. Permits issued to Title IV affected sources shall have a fixed term of five years.

b. Permits issued to solid waste incineration units combusting municipal waste subject to standards under Section 129(e) of the Act shall have a term not to exceed 12 years. Such permits shall be reviewed every five years.

24.108(3) Monitoring. Each permit shall contain the following requirements with respect to monitoring:

a. All emissions monitoring and analysis procedures or test methods required under the applicable requirements, including any procedures and methods promulgated pursuant to Section 114(a)(3) or 504(b) of the Act;

b. Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported pursuant to 24.108(5). Such monitoring shall be determined by application of the "Periodic Monitoring Guidance" (as amended through October 24, 2012) available from the department;

c. As necessary, requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods; and

d. As required, Compliance Assurance Monitoring (CAM) consistent with 40 CFR Part 64 (as amended through October 22, 1997).

24.108(4) Recordkeeping. With respect to recordkeeping, the permit shall incorporate all applicable recordkeeping requirements and require, where applicable, the following:

a. Records of required monitoring information that include the following:

(1) The date, place as defined in the permit, and time of sampling or measurements;

(2) The date(s) the analyses were performed;

(3) The company or entity that performed the analyses;

(4) The analytical techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions as existing at the time of sampling or measurement; and

b. Retention of records of all required monitoring data and support information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart and other recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

24.108(5) Reporting. With respect to reporting, the permit shall incorporate all applicable reporting requirements and shall require the following:

a. Submittal of reports of any required monitoring at least every six months. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with 24.107(4).

b. Prompt reporting of deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. The director shall define "prompt" in relation to the degree and type of deviation likely to occur and the applicable requirements.

24.108(6) Risk management plan. Pursuant to Section 112(r)(7)(E) of the Act, if the source is required to develop and register a risk management plan pursuant to Section 112(r) of the Act, the permit shall state the requirement for submission of the plan to the air quality bureau of the department. The permit shall also require filing the plan with appropriate authorities and an annual certification to the department that the plan is being properly implemented.

24.108(7) A permit condition prohibiting emissions exceeding any allowances that the affected source lawfully holds under Title IV of the Act or the regulations promulgated thereunder.

a. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid rain program, provided that such increases do not require a permit revision under any other applicable requirement.

b. No limit shall be placed on the number of allowances held by the Title IV affected source. The Title IV-affected source may not, however, use allowances as a defense to noncompliance with any other applicable requirement.

c. Any such allowances shall be accounted for according to the procedures established in regulations promulgated under Title IV of the Act.

d. Any permit issued pursuant to the requirements of these rules and Title V of the Act to a unit subject to the provisions of Title IV of the Act shall include conditions prohibiting all of the following:

(1) Annual emissions of sulfur dioxide in excess of the number of allowances to emit sulfur dioxide held by the owners or operators of the unit or the designated representative of the owners or operators.

(2) Exceedances of applicable emission rates.

(3) The use of any allowance prior to the year for which it was allocated.

(4) Contravention of any other provision of the permit.

24.108(8) Severability clause. The permit shall contain a severability clause to ensure the continued validity of the various permit requirements in the event of a challenge to any portions of the permit.

24.108(9) Other provisions. The Title V permit shall contain provisions stating the following:

a. The permittee must comply with all conditions of the Title V permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

b. Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

c. The permit may be modified; revoked, reopened, and reissued; or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

d. The permit does not convey any property rights of any sort, or any exclusive privilege.

e. The permittee shall furnish to the director, within a reasonable time, any information that the director may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the director copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee shall furnish such records directly to the Administrator of the EPA along with a claim of confidentiality.

24.108(10) Fees. The permit shall include a provision to ensure that the Title V permittee pays fees to the director pursuant to 567—30.4(455B).

24.108(11) Emissions trading. A provision of the permit shall state that no permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit.

24.108(12) Terms and conditions for reasonably anticipated operating scenarios identified by the source in its application and as approved by the director. Such terms and conditions:

a. Shall require the source, contemporaneously with making a change from one operating scenario to another, to record in a log at the permitted facility a record of the scenario under which it is operating; and

b. Must ensure that the terms and conditions of each such alternative scenario meet all applicable requirements and the requirements of the department's rules.

24.108(13) Terms and conditions, if the permit applicant requests them, for the trading of emissions increases and decreases in the permitted facility, to the extent that the applicable requirements provide for trading such increases and decreases without a case-by-case approval of each emissions trade. Such terms and conditions:

- a.* Shall include all terms required under 24.108(1) to 24.108(13) and 24.108(15) to determine compliance;
- b.* Must meet all applicable requirements of the Act and regulations promulgated thereunder and all requirements of this chapter; and
- c.* May extend the permit shield described in 24.108(18) to all terms and conditions that allow such increases and decreases in emissions.

24.108(14) Federally enforceable requirements.

- a.* All terms and conditions in a Title V permit, including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Act.
- b.* Notwithstanding paragraph 24.108(14) "a," the director shall specifically designate as not being federally enforceable under the Act any terms and conditions included in the permit that are not required under the Act or under any of its applicable requirements. Terms and conditions so designated are not subject to the requirements of 40 CFR §70.7 or §70.8.

24.108(15) Compliance requirements. All Title V permits shall contain the following elements with respect to compliance:

- a.* Consistent with the provisions of 24.108(3) to 24.108(5), compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to ensure compliance with the terms and conditions of the permit. Any documents, including reports, required by a permit shall contain a certification by a responsible official that meets the requirements of 24.107(4).
- b.* Inspection and entry provisions that require that, upon presentation of proper credentials, the permittee shall allow the director or the director's authorized representative to:
 - (1) Enter upon the permittee's premises where a Title V source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
 - (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
 - (3) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
 - (4) Sample or monitor, at reasonable times, substances or parameters for the purpose of ensuring compliance with the permit or other applicable requirements.
- c.* A schedule of compliance consistent with 24.105(2) "h," 24.105(2) "j," and 24.105(3).
- d.* Progress reports, consistent with an applicable schedule of compliance and with the provisions of 24.105(2) "h" and 24.105(2) "j," to be submitted at least every six months, or more frequently if specified in the applicable requirement or by the department in the permit. Such progress reports shall contain the following:
 - (1) Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones, or compliance were achieved; and
 - (2) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.
- e.* Requirements for compliance certification with terms and conditions contained in the permit, including emission limitations, standards, or work practices. Permits shall include each of the following:
 - (1) The frequency of submissions of compliance certifications, which shall not be less than annually.
 - (2) The means to monitor the compliance of the source with its emissions limitations, standards, and work practices, in accordance with the provisions of all applicable department rules.
 - (3) A requirement that the compliance certification include: the identification of each term or condition of the permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with all applicable department rules; and other facts as the director may require to determine the compliance status of the source.

- (4) A requirement that all compliance certifications be submitted to the Administrator and the director.
- f. Such additional provisions as the director may require.
- g. Such additional provisions as may be specified pursuant to Sections 114(a)(3) and 504(b) of the Act.

h. If there is a federal implementation plan applicable to the source, a provision that compliance with the federal implementation plan is required.

24.108(16) Emergency provisions.

a. For the purposes of a Title V permit, an “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

b. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of 24.108(16) “c” are met.

c. Requirements for affirmative defense. The affirmative defense of emergency shall be demonstrated by the source through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (1) An emergency occurred and that the permittee can identify the cause(s) of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements of the permit; and
- (4) The permittee submitted notice of the emergency to the director by certified mail within two working days of the time when emission limitations were exceeded due to the emergency. This notice fulfills the requirement of 24.108(5) “b.” This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

d. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

e. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

24.108(17) Permit reopenings.

a. A Title V permit issued to a major source shall require that revisions be made to incorporate applicable standards and regulations adopted by the Administrator pursuant to the Act, provided that:

- (1) The reopening and revision on this ground is not required if the permit has a remaining term of less than three years;
- (2) The reopening and revision on this ground is not required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended pursuant to 40 CFR §70.4(b)(10)(i) or (ii) as amended through October 6, 2009; or
- (3) The additional applicable requirements are implemented in a general permit that is applicable to the source and the source receives approval for coverage under that general permit.

b. The revisions shall be made as expeditiously as practicable, but not later than 18 months after the promulgation of such standards and regulations. Any permit revision required pursuant to this subrule shall be treated as a permit renewal.

24.108(18) Permit shield. The provisions for a permit shield as set forth in 40 CFR §70.6(f) are adopted by reference.

24.108(19) Emission trades. For emission trades at facilities solely for the purpose of complying with a federally enforceable emissions cap that is established in the permit independent of otherwise applicable requirements, permit applications under this provision are required to include proposed replicable procedures and proposed permit terms that ensure the emission trades are quantifiable and enforceable.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.109(455B) General permits. The provisions for general permits as set forth in 40 CFR §70.6(d) are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.110(455B) Changes allowed without a Title V permit revision (off-permit revisions).

24.110(1) A source with a Title V permit may make Section 502(b)(10) changes to the permitted installation/facility without a Title V permit revision if:

- a.* The changes are not major modifications under any provision of any program required by Section 110 through Section 112 of the Act, or major modifications of this chapter;
- b.* The changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions);
- c.* The changes are not modifications under any provision of Title I of the Act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions);
- d.* The changes are not subject to any requirement under Title IV of the Act (revisions affecting Title IV permitting are addressed in 567—24.140(455B) through 567—24.144(455B));
- e.* The changes comply with all applicable requirements; and
- f.* For each such change, the permitted source provides to the department and the Administrator by certified mail, at least 30 days in advance of the proposed change, a written notification, including the following, which shall be attached to the permit by the source, the department, and the Administrator:

- (1) A brief description of the change within the permitted facility,
- (2) The date on which the change will occur,
- (3) Any change in emission as a result of the change,
- (4) The pollutants emitted subject to the emissions trade,
- (5) If the emissions trading provisions of the state implementation plan are invoked, then the Title V permit requirements with which the source shall comply; a description of how the emission increases and decreases will comply with the terms and conditions of the Title V permit,
- (6) A description of the trading of emissions increases and decreases for the purpose of complying with a federally enforceable emissions cap as specified in and in compliance with the Title V permit, and
- (7) Any permit term or condition no longer applicable as a result of the change.

24.110(2) Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.

24.110(3) Notwithstanding any other part of this rule, the director may, upon review of a notice, require a stationary source to apply for a Title V permit if the change does not meet the requirements of 24.110(1).

24.110(4) The permit shield provided in 24.108(18) shall not apply to any change made pursuant to this rule. Compliance with the permit requirements that the source will meet using the emissions trade shall be determined according to requirements of the state implementation plan authorizing the emissions trade.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.111(455B) Administrative amendments to Title V permits.

24.111(1) An administrative permit amendment is a permit revision that does any of the following:

- a.* Corrects typographical errors;
- b.* Identifies a change in the name, address, or telephone number of any person identified in the permit, or provides a similar minor administrative change at the source;
- c.* Requires more frequent monitoring or reporting by the permittee; or
- d.* Allows for a change in ownership or operational control of a source where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the director.

24.111(2) Administrative permit amendments to portions of permits containing provisions pursuant to Title IV of the Act shall be governed by regulations promulgated by the Administrator under Title IV of the Act.

24.111(3) The director shall take no more than 60 days from receipt of a request for an administrative permit amendment to take final action on such request, and may incorporate such changes without providing notice to the public or affected states provided that the director designates any such permit revisions as having been made pursuant to this rule.

24.111(4) The director shall submit to the Administrator a copy of each Title V permit revised under this rule.

24.111(5) The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.112(455B) Minor Title V permit modifications.

24.112(1) Minor Title V permit modification procedures may be used only for those permit modifications that satisfy all of the following:

- a. Do not violate any applicable requirement;
- b. Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the Title V permit;
- c. Do not require or change a case-by-case determination of an emission limitation or other standard, or an increment analysis;
- d. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed in order to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include any federally enforceable emissions caps that the source would assume to avoid classification as a modification under any provision of Title I of the Act; and an alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the Act;
- e. Are not modifications under any provision of Title I of the Act; and
- f. Are not required to be processed as a significant modification under 567—24.113(455B).

24.112(2) An application for minor permit revision shall be on the minor Title V modification application form and shall include at least the following:

- a. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
- b. The source's suggested draft permit;
- c. Certification by a responsible official, pursuant to 24.107(4), that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and
- d. Completed forms to enable the department to notify the Administrator and affected states as required by 24.107(7).

24.112(3) The department shall notify the Administrator and affected states within five working days of receipt of a complete permit modification application. Notification shall be in accordance with the provisions of 24.107(7). The department shall promptly send to the Administrator any notification required by 24.107(7).

24.112(4) The director shall not issue a final Title V permit modification until after the Administrator's 45-day review period or until the Administrator has notified the director that the Administrator will not object to issuance of the Title V permit modification, whichever is first. Within 90 days of the director's receipt of an application under the minor permit modification procedures, or 15 days after the end of the Administrator's 45-day review period provided for in 24.107(7), whichever is later, the director shall:

- a. Issue the permit modification as proposed;
- b. Deny the permit modification application;
- c. Determine that the requested permit modification does not meet the minor permit modification criteria and should be reviewed under the significant modification procedures; or

d. Revise the draft permit modification and transmit to the Administrator the proposed permit modification, as required by 24.107(7).

24.112(5) Source's ability to make change. The source may make the change proposed in its minor permit modification application immediately after it files the application. After the source makes the change allowed by the preceding sentence, and until the director takes any of the actions specified in 24.112(4) "a" to 24.112(4) "c," the source must comply with both the applicable requirements governing the change and the proposed permit terms and conditions. During this time, the source need not comply with the existing permit terms and conditions it seeks to modify. However, if the source fails to comply with its proposed permit terms and conditions during this time period, the existing permit terms and conditions it seeks to modify may be enforced against it.

24.112(6) Permit shield. The permit shield under 24.108(18) shall not extend to minor Title V permit revisions.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.113(455B) Significant Title V permit modifications.

24.113(1) Significant Title V modification procedures shall be used for applications requesting Title V permit modifications that do not qualify as minor or administrative amendments. These include, but are not limited to, all significant changes in monitoring permit terms, every relaxation of reporting or recordkeeping permit terms, and any change in the method of measuring compliance with existing requirements.

24.113(2) Significant Title V permit modifications shall meet all requirements of this chapter, including those for applications, public participation, review by affected states, and review by the Administrator, as those requirements that apply to Title V permit issuance and renewal.

24.113(3) Unless the director determines otherwise, review of significant Title V permit modification applications shall be completed within nine months of receipt of a complete application.

24.113(4) For a change that is subject to the requirements for a significant permit modification (pursuant to 567—24.113(455B)), the permittee shall submit to the department an application for a significant permit modification not later than three months after commencing operation of the changed source unless the existing Title V permit would prohibit such construction or change in operation, in which event the operation of the changed source may not commence until the department revises the permit.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.114(455B) Title V permit reopenings. The provisions for Title V permit reopenings set forth in 40 CFR §70.7(f) are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.115(455B) Suspension, termination, and revocation of Title V permits.

24.115(1) Permits may be terminated, modified, revoked, or reissued for cause. The following examples shall be considered cause for the suspension, modification, revocation, or reissuance of a Title V permit:

a. The director has reasonable cause to believe that the permit was obtained by fraud or misrepresentation.

b. The person applying for the permit failed to disclose a material fact required by the permit application form or the rules applicable to the permit, of which the applicant had or should have had knowledge at the time the application was submitted.

c. The terms and conditions of the permit have been or are being violated.

d. The permittee has failed to pay the Title V permit fees.

e. The permittee has failed to pay an administrative, civil, or criminal penalty imposed for violations of the permit.

24.115(2) If the director suspends, terminates, or revokes a Title V permit under this rule, the notice of such action shall be served on the applicant or permittee by certified mail, return receipt requested. The notice shall include a statement detailing the grounds for the action sought, and the proceeding shall in all other respects comply with the requirements of 561—7.16(17A,455A).

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.116(455B) Title V permit renewals.

24.116(1) An application for Title V permit renewal shall be subject to the same procedural requirements that apply to initial permit issuance, including those for public participation and review by the Administrator and affected states.

24.116(2) Except as provided in 567—24.104(455B), permit expiration terminates a source's right to operate unless a timely and complete application for renewal has been submitted in accordance with 567—24.105(455B).

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.117 to 24.119 Reserved.

567—24.120(455B) Acid rain program—definitions. The terms used in 567—24.120(455B) through 567—24.146(455B) shall have the meanings set forth in Title IV of the Act, 42 U.S.C. §7401, et seq., as amended through November 15, 1990, and in this rule. The definitions set forth in 40 CFR Part 72 as amended through March 28, 2011, and 40 CFR Part 76 as amended through October 15, 1999, are adopted by reference.

“Department” means the department of natural resources and is the state acid rain permitting authority.

“Electronic format,” “electronic submittal,” and *“electronic submittal format”* mean the same as defined in 567—22.1(455B).

“Title V operating permit” means a permit issued under 567—24.100(455B) through 567—24.116(455B) implementing Title V of the Act.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.121 Reserved.

567—24.122(455B) Applicability. The applicability of the acid rain program as set forth in 40 CFR §72.6 is adopted by reference. A certifying official of any unit may petition the Administrator for a determination of applicability under 40 CFR §72.6(c).

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.123(455B) Acid rain exemptions.

24.123(1) *New unit exemption.* The new unit exemption, as specified in 40 CFR §72.7, except for 40 CFR §72.7(c)(1)(i), is adopted by reference. This exemption applies to new utility units.

24.123(2) *Retired unit exemption.* The retired unit exemption, as specified in 40 CFR §72.8, is adopted by reference. This exemption applies to any affected unit that is permanently retired.

24.123(3) *Industrial utility-unit exemption.* The industrial utility-unit exemption, as specified in 40 CFR §72.14, is adopted by reference. This exemption applies to any noncogeneration utility unit.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.124 Reserved.

567—24.125(455B) Standard requirements.

24.125(1) *Permit requirements.* Permit requirements as set forth in 40 CFR §72.9(a) are adopted by reference.

24.125(2) *Monitoring requirements.* Monitoring requirements as set forth in 40 CFR §72.9(b) are adopted by reference.

24.125(3) *Sulfur dioxide requirements.* Sulfur dioxide requirements as set forth in 40 CFR §72.9(c) are adopted by reference.

24.125(4) *Nitrogen oxides requirements.* Nitrogen oxides requirements as set forth in 40 CFR §72.9(d) are adopted by reference.

24.125(5) *Excess emissions requirements.* Excess emissions requirements as set forth in 40 CFR §72.9(e) are adopted by reference.

24.125(6) *Recordkeeping and reporting requirements.* Recordkeeping and reporting requirements as set forth in 40 CFR §72.9(f) are adopted by reference.

24.125(7) *Liability.* Liability provisions as set forth in 40 CFR §72.9(g) are adopted by reference.

24.125(8) *Effect on other authorities.* The provisions for the effect on other authorities as set forth in 40 CFR §72.9(h) is adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.126(455B) Designated representative—submissions. The provisions for submission by designated representatives as set forth in 40 CFR 72, Subpart B, are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.127(455B) Designated representative—objections. The provisions for disputes regarding a designated representative as set forth in 40 CFR §72.25 are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.128(455B) Acid rain applications—requirement to apply. The requirement to apply for an acid rain permit as set forth in 40 CFR §72.30 is adopted by reference.

24.128(1) *Duty to reapply.* The duty to reapply, as set forth in 40 CFR §72.30(c), is adopted by reference.

24.128(2) *Submission of copies.* The designated representative shall submit the application in the electronic format specified by the department, if electronic submittal is provided.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.129(455B) Information requirements for acid rain permit applications. A complete acid rain permit application shall be submitted on a form approved by the department and include the following elements:

24.129(1) Identification of the affected source for which the permit application is submitted;

24.129(2) Identification of each affected unit at the source for which the permit application is submitted;

24.129(3) A complete compliance plan for each unit, in accordance with 567—24.131(455B);

24.129(4) The standard requirements under 567—24.125(455B); and

24.129(5) If the unit is a new unit, the date that the unit has commenced or will commence operation and the deadline for monitor certification.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.130(455B) Acid rain permit application shield and binding effect of permit application. The provisions for an acid rain permit application shield and the binding effect of a permit application as set forth in 40 CFR §72.32 are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.131(455B) Acid rain compliance plan and compliance options—general. The general provisions for an acid rain compliance plan and compliance options as set forth in 40 CFR §72.40 are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.132 Reserved.

567—24.133(455B) Acid rain permit contents—general. The general provisions for acid rain permit contents as set forth in 40 CFR §72.50 are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.134(455B) Acid rain permit shield. The general provisions for an acid rain permit shield as set forth in 40 CFR §72.51 are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.135(455B) Acid rain permit issuance procedures—general. The department will issue or deny all acid rain permits in accordance with 567—24.100(455B) through 567—24.116(455B), including the

completeness determination, draft permit, administrative record, statement of basis, public notice and comment period, public hearing, proposed permit, permit issuance, permit revision, and appeal procedures as amended by 567—24.135(455B) through 567—24.145(455B).

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.136(455B) Acid rain permit issuance procedures—completeness. The department will submit a written notice of application completeness to the Administrator within ten working days following a determination by the department that the acid rain permit application is complete.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.137(455B) Acid rain permit issuance procedures—statement of basis.

24.137(1) The statement of basis will briefly set forth significant factual, legal, and policy considerations on which the department relied in issuing or denying the draft acid rain permit.

24.137(2) The statement of basis will include the reasons, and supporting authority, for approval or disapproval of any compliance options requested in the permit application, including references to applicable statutory or regulatory provisions and to the administrative record.

24.137(3) The department will submit to the Administrator a copy of the draft acid rain permit and the statement of basis and all other relevant portions of the Title V operating permit that may affect the draft acid rain permit.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.138(455B) Issuance of acid rain permits.

24.138(1) Proposed permit. After the close of the public comment and EPA 45-day review period (pursuant to 24.107(6) and 24.107(7)), the department will address any objections by the Administrator, incorporate all necessary changes and issue or deny the acid rain permit.

24.138(2) The department will submit the proposed acid rain permit or denial of a proposed acid rain permit to the Administrator in accordance with 567—24.100(455B) through 567—24.116(455B), the provisions of which shall be treated as applying to the issuance or denial of a proposed acid rain permit.

24.138(3) Following the Administrator's review of the proposed acid rain permit or denial of a proposed acid rain permit, the department, or under 40 CFR §70.8(c), the Administrator, will incorporate any required changes and issue or deny the acid rain permit in accordance with 567—24.133(455B) and 567—24.134(455B).

24.138(4) No acid rain permit including a draft or proposed permit shall be issued unless the Administrator has received a certificate of representation for the designated representative of the source in accordance with Subpart B of 40 CFR Part 72.

24.138(5) Permit issuance deadline and effective date.

a. and *b.* Reserved.

c. Each acid rain permit issued in accordance with 24.138(5)“*a*” shall take effect by the later of January 1, 2000, or, where the permit governs a unit under 24.122(1)“*c*,” the deadline for monitor certification under 567—25.2(455B).

d. Each acid rain permit shall have a term of five years commencing on its effective date.

e. An acid rain permit shall be binding on any new owner or operator or designated representative of any source or unit governed by the permit.

24.138(6) Each acid rain permit shall contain all applicable acid rain requirements, shall be a portion of the Title V operating permit that is complete and segregable from all other air quality requirements, and shall not incorporate information contained in any other documents, other than documents that are readily available.

24.138(7) Invalidation of the acid rain portion of a Title V operating permit shall not affect the continuing validity of the rest of the Title V operating permit, nor shall invalidation of any other portion of the Title V operating permit affect the continuing validity of the acid rain portion of the permit.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.139(455B) Acid rain permit appeal procedures.

24.139(1) Appeals of the acid rain portion of a Title V operating permit issued by the department that do not challenge or involve decisions or actions of the Administrator under 40 CFR Parts 72, 73, 75, 76, 77, and 78 and Sections 407 and 410 of the Act and regulations implementing Sections 407 and 410 shall be conducted according to the procedures in Iowa Code chapter 17A and 561—Chapter 7, as adopted by reference in 567—Chapter 7. Appeals of the acid rain portion of such a permit that challenge or involve such decisions or actions of the Administrator shall follow the procedures under 40 CFR Part 78, as amended through March 20, 2017, and Section 307 of the Act. Such decisions or actions include, but are not limited to, allowance allocations, determinations concerning alternative monitoring systems, and determinations of whether a technology is a qualifying repowering technology.

24.139(2) No administrative appeal or judicial appeal of the acid rain portion of a Title V operating permit shall be allowed more than 30 days following respective issuance of the acid rain portion of the permit that is subject to administrative appeal or issuance of the final agency action subject to judicial appeal.

24.139(3) The Administrator may intervene as a matter of right in any state administrative appeal of an acid rain permit or denial of an acid rain permit.

24.139(4) No administrative appeal concerning an acid rain requirement shall result in a stay of the following requirements:

- a.* The allowance allocations for any year during which the appeal proceeding is pending or is being conducted;
- b.* Any standard requirement under 567—24.125(455B);
- c.* The emissions monitoring and reporting requirements applicable to the affected units at an affected source under 567—25.2(455B);
- d.* Uncontested provisions of the decision on appeal; and
- e.* The terms of a certificate of representation submitted by a designated representative under Subpart B of 40 CFR Part 72.

24.139(5) The department will serve written notice on the Administrator of any state administrative or judicial appeal concerning an acid rain provision of any Title V operating permit or denial of an acid rain portion of any Title V operating permit within 30 days of the filing of the appeal.

24.139(6) The department will serve written notice on the Administrator of any determination or order in a state administrative or judicial proceeding that interprets, modifies, voids, or otherwise relates to any portion of an acid rain permit. Following any such determination or order, the Administrator will have an opportunity to review and veto the acid rain permit or revoke the permit for cause in accordance with 24.107(7) and 24.107(8).

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.140(455B) Permit revisions—general.

24.140(1) 567—24.140(455B) through 567—24.145(455B) shall govern revisions to any acid rain permit issued by the department.

24.140(2) A permit revision may be submitted for approval at any time. No permit revision shall affect the term of the acid rain permit to be revised. No permit revision shall excuse any violation of an acid rain program requirement that occurred prior to the effective date of the revision.

24.140(3) The terms of the acid rain permit shall apply while the permit revision is pending.

24.140(4) Any determination or interpretation by the state (including the department or a state court) modifying or voiding any acid rain permit provision shall be subject to review by the Administrator in accordance with 40 CFR §70.8(c), as applied to permit modifications, unless the determination or interpretation is an administrative amendment approved in accordance with 567—24.143(455B).

24.140(5) The standard requirements of 567—24.125(455B) shall not be modified or voided by a permit revision.

24.140(6) Any permit revision involving incorporation of a compliance option that was not submitted for approval and comment during the permit issuance process, or involving a change in a compliance option that was previously submitted, shall meet the requirements for applying for such compliance option

under 567—24.131(455B) and Section 407 of the Act and regulations implementing Section 407 of the Act.

24.140(7) For permit revisions not described in 567—24.141(455B) and 567—24.142(455B), the department may, in its discretion, determine which of these rules is applicable.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.141(455B) Permit modifications.

24.141(1) Permit modifications shall follow the permit issuance requirements of 567—24.135(455B) through 567—24.139(455B) and 24.113(2) and 24.113(3).

24.141(2) For purposes of applying 24.141(1), a permit modification shall be treated as an acid rain permit application, to the extent consistent with 567—24.140(455B) through 567—24.145(455B).

24.141(3) The following permit revisions are permit modifications:

- a. Relaxation of an excess emission offset requirement after approval of the offset plan by the Administrator;
- b. Incorporation of a final nitrogen oxides alternative emissions limitation following a demonstration period; and
- c. Reserved.
- d. At the option of the designated representative submitting the permit revision, the permit revisions listed in 24.142(2).

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.142(455B) Fast-track modifications. The requirements for fast-track modifications as set forth in 40 CFR §72.82 are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.143(455B) Administrative permit amendment.

24.143(1) Administrative amendments shall follow the procedures set forth in 567—24.111(455B). The department will submit the revised portion of the permit to the Administrator within ten working days after the date of final action on the request for an administrative amendment.

24.143(2) The following permit revisions are administrative amendments:

- a. Activation of a compliance option conditionally approved by the department, provided that all requirements for activation under 24.131(3) are met;
- b. Changes in the designated representative or alternative designated representative, provided that a new certificate of representation is submitted to the Administrator in accordance with Subpart B of 40 CFR Part 72;
- c. Correction of typographical errors;
- d. Changes in names, addresses, or telephone numbers;
- e. Changes in the owners or operators, provided that a new certificate of representation is submitted within 30 days to the Administrator and the department in accordance with Subpart B of 40 CFR Part 72;
- f. Termination of a compliance option in the permit, provided that all requirements for termination under 24.131(4) shall be met and this procedure shall not be used to terminate a repowering plan after December 31, 1999;
- g. Changes in the date, specified in a new unit's acid rain permit, of commencement of operation or the deadline for monitor certification; provided that they are in accordance with 567—24.125(455B);
- h. The addition of or change in a nitrogen oxides alternative emissions limitation demonstration period, provided that the requirements of regulations implementing Section 407 of the Act are met; and
- i. Incorporation of changes that the Administrator has determined to be similar to those in 24.143(2) "a" through 24.143(2) "h."

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.144(455B) Automatic permit amendment. The provisions for automatic permit amendments as set forth in 40 CFR §72.84 are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.145(455B) Permit reopenings. The provisions for permit reopenings as set forth in 40 CFR §72.85 are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.146(455B) Compliance certification—annual report.

24.146(1) Applicability and deadline. For each calendar year in which a unit is subject to the acid rain emissions limitations, the designated representative of the source at which the unit is located shall submit to the Administrator and the department, within 60 days after the end of the calendar year, an annual compliance certification report for the unit in compliance with 40 CFR §72.90.

24.146(2) The submission of complete compliance certifications in accordance with 24.146(1) and 567—25.2(455B) shall be deemed to satisfy the requirement to submit compliance certifications under 24.108(15) “e” with regard to the acid rain portion of the source’s Title V operating permit.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.147 Reserved.

567—24.148(455B) Sulfur dioxide opt-ins. The provisions for sulfur dioxide opt-ins as set forth in 40 CFR Part 74 as amended through April 28, 2006, are adopted by reference.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

567—24.149 to 24.299 Reserved.

567—24.300(455B) Operating permit by rule for small sources. Except as provided in 24.300(11), any source that otherwise would be required to obtain a Title V operating permit may instead register for an operation permit by rule for small sources. Sources that comply with the requirements contained in this rule will be deemed to have an operating permit by rule for small sources. Sources that comply with this rule will be considered to have federally enforceable limits so that their potential emissions are less than the major source thresholds for regulated air pollutants and hazardous air pollutants as defined in 567—24.100(455B).

24.300(1) *Definitions for operating permit by rule for small sources.* For the purposes of 567—24.300(455B), the definitions shall be the same as the definitions found in 567—24.100(455B).

24.300(2) *Registration for operating permit by rule for small sources.*

a. Except as provided in 24.300(3) and 24.300(11), any person who owns or operates a stationary source and meets the following criteria may register for an operating permit by rule for small sources:

(1) The potential to emit air contaminants is equal to or in excess of the threshold for a major stationary source of regulated air pollutants or hazardous air pollutants, and

(2) For every 12-month rolling period, the actual emissions of the stationary source are less than or equal to the emission limitations specified in 24.300(6).

b. Eligibility for an operating permit by rule for small sources does not eliminate the source’s responsibility to meet any and all applicable federal requirements including, but not limited to, a MACT standard.

c. Nothing in this rule shall prevent any stationary source that has had a Title V operating permit from qualifying to comply with this rule in the future in lieu of maintaining an application for a Title V operating permit or upon rescission of a Title V operating permit if the owner or operator demonstrates that the stationary source is in compliance with the emissions limitations in 24.300(6).

d. The department reserves the right to require proof that the expected emissions from the stationary source, in conjunction with all other emissions, will not prevent the attainment or maintenance of the ambient air quality standards specified in 567—Chapter 22.

24.300(3) *Exceptions to eligibility.*

a. Any affected source subject to the provisions of Title IV of the Act or any solid waste incinerator unit required to obtain a Title V operating permit under Section 129(e) of the Act is not eligible for an operating permit by rule for small sources.

b. Sources that meet the registration criteria established in 24.300(2) “a” and meet all applicable requirements of 567—24.300(455B), and are subject to a standard or other requirement under

567—subrule 23.1(2) (standards of performance for new stationary sources) or Section 111 of the Act are eligible for an operating permit by rule for small sources. These sources shall be required to obtain a Title V operating permit when the exemptions specified in 24.102(1) or 24.102(2) no longer apply.

c. Sources that meet the registration criteria established in 24.300(2) “a” and meet all applicable requirements of 567—24.300(455B), and are subject to a standard or other requirement under 567—subrule 23.1(3) (emissions standards for hazardous air pollutants), 567—subrule 23.1(4) (emissions standards for hazardous air pollutants for source categories), or Section 112 of the Act are eligible for an operating permit by rule for small sources. These sources shall be required to obtain a Title V operating permit when the exemptions specified in 24.102(1) or 24.102(2) no longer apply.

24.300(4) Stationary source with de minimus emissions. Stationary sources with de minimus emissions must submit the standard registration form and must meet and fulfill all registration and reporting requirements as found in 24.300(8). Only the recordkeeping and reporting provisions listed in 24.300(4) “b” shall apply to a stationary source with de minimus emissions or operations as specified in 24.300(4) “a”:

a. *De minimus emission and usage limits.* For the purpose of this rule, a stationary source with de minimus emissions means:

(1) In every 12-month rolling period, the stationary source emits less than or equal to the following quantities of emissions:

1. 5 tons per year of a regulated air pollutant (excluding hazardous air pollutants (HAPs)), and
2. 2 tons per year of a single HAP, and
3. 5 tons per year of any combination of HAPs.

(2) In every 12-month rolling period, at least 90 percent of the stationary source’s emissions are associated with an operation for which the throughput is less than or equal to one of the quantities specified in numbered paragraphs “1” to “9” below:

1. 1,400 gallons of any combination of solvent-containing materials but no more than 550 gallons of any one solvent-containing material, provided that the materials do not contain the following: methyl chloroform (1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene;

2. 750 gallons of any combination of solvent-containing materials where the materials contain the following: methyl chloroform (1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene, but not more than 300 gallons of any one solvent-containing material;

3. 365 gallons of solvent-containing material used at a paint spray unit(s);

4. 4,400,000 gallons of gasoline dispensed from equipment with Phase I and II vapor recovery systems;

5. 470,000 gallons of gasoline dispensed from equipment without Phase I and II vapor recovery systems;

6. 1,400 gallons of gasoline combusted;

7. 16,600 gallons of diesel fuel combusted;

8. 500,000 gallons of distillate oil combusted; or

9. 71,400,000 cubic feet of natural gas combusted.

b. *Recordkeeping for de minimus sources.* Upon registration with the department, the owner or operator of a stationary source eligible to register for an operating permit by rule for small sources shall comply with all applicable recordkeeping requirements of this rule. The recordkeeping requirements of this rule shall not replace any recordkeeping requirement contained in a construction permit or in a local, state, or federal rule or regulation.

(1) De minimus sources shall always maintain an annual log of each raw material used and its amount. The annual log and all related material safety data sheets (MSDS) for all materials shall be maintained for a period of not less than the most current five years. The annual log will begin on the date the small source operating permit application is submitted, then on an annual basis, based on a calendar year.

(2) Within 30 days of a written request by the state or EPA, the owner or operator of a stationary source not maintaining records pursuant to 24.300(7) shall demonstrate that the stationary source's emissions or throughput is not in excess of the applicable quantities set forth in 24.300(4) "a."

24.300(5) *Provision for air pollution control equipment.* The owner or operator of a stationary source may take into account the operation of air pollution control equipment on the capacity of the source to emit an air contaminant if the equipment is required by federal, state, or local air pollution control agency rules and regulations or permit terms and conditions that are federally enforceable. The owner or operator of the stationary source shall maintain and operate such air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

24.300(6) *Emission limitations.*

a. No stationary source subject to this rule shall emit in every 12-month rolling period more than the following quantities of emissions:

(1) 50 percent of the major source thresholds for regulated air pollutants (excluding hazardous air pollutants), and

(2) 5 tons per year of a single hazardous air pollutant, and

(3) 12.5 tons per year of any combination of hazardous air pollutants.

b. The owner or operator of a stationary source subject to this rule shall obtain any necessary permits prior to commencing any physical or operational change or activity that will result in actual emissions that exceed the limits specified in 24.300(6) "a."

24.300(7) *Recordkeeping requirements for non-de minimus sources.* Upon registration with the department the owner or operator of a stationary source eligible to register for an operating permit by rule for small stationary sources shall comply with all applicable recordkeeping requirements in this rule. The recordkeeping requirements of this rule shall not replace any recordkeeping requirement contained in any operating permit, a construction permit, or in a local, state, or federal rule or regulation.

a. A stationary source previously covered by the provisions in 24.300(4) shall comply with the applicable provisions of 24.300(7) (recordkeeping requirements) and 24.300(8) (reporting requirements) if the stationary source exceeds the quantities specified in 24.300(4) "a."

b. The owner or operator of a stationary source subject to this rule shall keep and maintain records, as specified in 24.300(7) "c" below, for each permitted emission unit and each piece of emission control equipment sufficient to determine actual emissions. Such information shall be maintained on site for five years and be made available to local, state, or EPA staff upon request.

c. Recordkeeping requirements for emission units and emission control equipment. Recordkeeping requirements for emission units are specified in 24.300(7) "c"(1) through 24.300(7) "c"(4). Recordkeeping requirements for emission control equipment are specified in 24.300(7) "c"(5).

(1) Coating/solvent emission unit. The owner or operator of a stationary source subject to this rule that contains a coating/solvent emission unit not permitted under 567—subrule 22.8(1) (permit by rule for spray booths) or uses a coating, solvent, ink or adhesive shall keep and maintain the following records:

1. A current list of all coatings, solvents, inks and adhesives in use. This list shall include MSDS, manufacturer's product specifications, and material VOC content reports for each solvent (including solvents used in cleanup and surface preparation), coating, ink, and adhesive used and show at least the product manufacturer, product name and code, VOC, and hazardous air pollutant content;

2. A description of any equipment used during and after coating/solvent application, including type, make, and model; maximum design process rate or throughput; and control device(s) type and description (if any);

3. A monthly log of the consumption of each solvent (including solvents used in cleanup and surface preparation), coating, ink, and adhesive used; and

4. All purchase orders, invoices, and other documents to support information in the monthly log.

(2) Organic liquid storage unit. The owner or operator of a stationary source subject to this rule that contains an organic liquid storage unit shall keep and maintain the following records:

1. A monthly log identifying the liquid stored and monthly throughput; and

2. Information on the tank design and specifications including control equipment.

(3) Combustion emission unit. The owner or operator of a stationary source subject to this rule that contains a combustion emission unit shall keep and maintain the following records:

1. Information on equipment type, make and model, maximum design process rate or maximum power input/output, minimum operating temperature (for thermal oxidizers) and capacity and all source test information; and

2. A monthly log of fuel type, fuel usage, fuel heating value (for nonfossil fuels; in terms of Btu/lb or Btu/gal), and percent sulfur for fuel oil and coal.

(4) General emission unit. The owner or operator of a stationary source subject to this rule that contains an emission unit not included in 24.300(7) "c"(1), (2), or (3) shall keep and maintain the following records:

1. Information on the process and equipment including the following: equipment type, description, make, and model and maximum design process rate or throughput;

2. A monthly log of operating hours and each raw material used and its amount; and

3. Purchase orders, invoices, or other documents to support information in the monthly log.

(5) Emission control equipment. The owner or operator of a stationary source subject to this rule that contains emission control equipment shall keep and maintain the following records:

1. Information on equipment type and description, make and model, and emission units served by the control equipment;

2. Information on equipment design including, where applicable: pollutant(s) controlled; control effectiveness; maximum design or rated capacity; other design data as appropriate including any available source test information and manufacturer's design/repair/maintenance manual; and

3. A monthly log of hours of operation including notation of any control equipment breakdowns, upsets, repairs, or maintenance and any other deviations from design parameters.

24.300(8) *Registration and reporting requirements.*

a. Duty to apply. Any person who owns or operates a source otherwise required to obtain a Title V operating permit and that would be eligible for an operating permit by rule for small sources must either register for an operating permit by rule for small sources or apply for a Title V operating permit. Any source determined not to be eligible for an operating permit by rule for small sources, and operating without a valid Title V operating permit, shall be subject to enforcement action for operation without a Title V operating permit, except as provided for in the application shield provisions contained in 567—24.104(455B). For each source registering for an operating permit by rule for small sources, the owner or operator or designated representative, where applicable, shall present or mail to the Air Quality Bureau, Iowa Department of Natural Resources, 502 East 9th Street, Des Moines, Iowa 50319, one original and one copy of a timely and complete registration form in accordance with this rule.

(1) Timely registration. Each source registering for an operating permit by rule for small sources shall submit a registration form:

1. By August 1, 1996, if the source became subject to 567—24.101(455B) on or before August 1, 1995, unless otherwise required to obtain a Title V permit under 567—24.101(455B).

2. Within 12 months of becoming subject to 567—24.101(455B) (the requirement to obtain a Title V operating permit) for a new source or a source that would otherwise become subject to the Title V permit requirement after August 1, 1995.

(2) Complete registration form. To be deemed complete, the registration form must provide all information required pursuant to 24.300(8) "b."

(3) Duty to supplement or correct registration. Any registrant who fails to submit any relevant facts or who has submitted incorrect information in an operating permit by rule for small sources registration shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, the registrant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete registration.

(4) Certification of truth, accuracy, and completeness. Any registration form, report, or supplemental information submitted pursuant to these rules shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under these rules shall

state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

b. At the time of registration for an operating permit by rule for small sources each owner or operator of a stationary source shall submit to the department a standard registration form and required attachments. To register for an operating permit by rule for small sources, applicants shall complete the registration form and supply all information required by the filing instructions. The information submitted must be sufficient to evaluate the source, its registration, and predicted actual emissions from the source and to determine whether the source is subject to the exceptions listed in 24.300(3). The standard registration form and attachments shall require that the following information be provided:

(1) Identifying information, including company name and address (or plant or source name if different from the company name), owner's name and responsible official, and telephone number and names of plant site manager or contact;

(2) A description of source processes and products;

(3) The following emissions-related information shall be submitted to the department on the standard registration form:

1. The total actual emissions of each regulated air pollutant. Actual emissions shall be reported for one contiguous 12-month period within the 18 months preceding submission of the registration to the department;

2. Identification and description of each emission unit with the potential to emit a regulated air pollutant;

3. Identification and description of air pollution control equipment;

4. Limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated pollutants;

5. Fugitive emissions sources shall be included in the registration form in the same manner as stack emissions if the source is one of the source categories defined as a stationary source category in rule 567—24.100(455B);

(4) Requirements for certification. Facilities that claim to meet the requirements set forth in this rule to qualify for an operating permit by rule for small sources must submit to the department, with a complete registration form, a written statement as follows:

"I certify that all equipment at the facility with a potential to emit any regulated pollutant is included in the registration form, and submitted to the department as required in 24.300(8) "b." I understand that the facility will be deemed to have been granted an operating permit by rule for small sources under the terms of 567—24.300(455B) only if all applicable requirements of 567—24.300(455B) are met and if the registration is not denied by the director under 567—24.300(11). This certification is based on information and belief formed after reasonable inquiry; the statements and information in the document are true, accurate, and complete." The certification must be signed by one of the following individuals:

For corporations, a principal executive officer of at least the level of vice president, or a responsible official as defined in 567—24.100(455B).

For partnerships, a general partner.

For sole proprietorships, the proprietor.

For municipal, state, county, or other public facilities, the principal executive officer or the ranking elected official.

24.300(9) *Construction permits issued after registration for an operating permit by rule for small sources.* This rule shall not relieve any stationary source from complying with requirements pertaining to any otherwise applicable construction permit, or to replace a condition or term of any construction permit, or any provision of a construction permitting program. This does not preclude issuance of any construction permit with conditions or terms necessary to ensure compliance with this rule.

a. If the issuance of a construction permit acts to make the source no longer eligible for an operating permit by rule for small sources, the source shall, within 12 months of issuance of the construction permit, submit an application for a Title V operating permit.

b. If the issuance of a construction permit does not prevent the source from continuing to be eligible to operate under an operating permit by rule for small sources, the source shall, within 30 days of issuance

of a construction permit, provide to the department the information as listed in 24.300(8) “b” for the new or modified source.

24.300(10) Violations.

a. Failure to comply with any of the applicable provisions of this rule shall constitute a violation of this rule.

b. A stationary source subject to this rule shall be subject to applicable federal requirements for a major source, including 567—24.101(455B) through 567—24.116(455B) when the conditions specified in either subparagraph (1) or (2) below, occur:

(1) Commencing on the first day following every 12-month rolling period in which the stationary source exceeds a limit specified in 24.300(6), or

(2) Commencing on the first day following every 12-month rolling period in which the owner or operator cannot demonstrate that the stationary source is in compliance with the limits in 24.300(6).

24.300(11) Suspension, termination, and revocation of an operating permit by rule for small sources.

a. Registrations may be terminated, modified, revoked, or reissued for cause. The following examples shall be considered cause for the suspension, modification, revocation, or reissuance of an operating permit by rule for small sources:

(1) The director has reasonable cause to believe that the operating permit by rule for small sources was obtained by fraud or misrepresentation.

(2) The person registering for the operating permit by rule for small sources failed to disclose a material fact required by the registration form or the rules applicable to the operating permit by rule for small sources, of which the applicant had or should have had knowledge at the time the registration form was submitted.

(3) The terms and conditions of the operating permit by rule for small sources have been or are being violated.

(4) The owner or operator of the source has failed to pay an administrative, civil or criminal penalty for violations of the operating permit by rule for small sources.

b. If the director suspends, terminates, or revokes an operating permit by rule for small sources under this rule, the notice of such action shall be served on the applicant by certified mail, return receipt requested. The notice shall include a statement detailing the grounds for the action sought, and the proceeding shall in all other respects comply with the requirements of 561—7.16(17A,455A).

24.300(12) Change of ownership. The new owner shall notify the department in writing no later than 30 days after the change of ownership of equipment covered by an operating permit by rule for small sources. The notification to the department shall be mailed to Air Quality Bureau, Iowa Department of Natural Resources, 502 East 9th Street, Des Moines, Iowa 50319, and shall include the following information:

a. The date of ownership change; and

b. The name, address, and telephone number of the responsible official, the contact person, and the owner of the equipment both before and after the change of ownership.

[ARC 7953C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code sections 455B.133 and 455B.134.

[Filed 8/24/70; amended 5/2/72, 12/11/73, 12/17/74]

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[Filed ARC 7953C (Notice ARC 7213C, IAB 12/27/23), IAB 5/15/24, effective 6/19/24]

CHAPTER 25
MEASUREMENT OF EMISSIONS

[Prior to 7/1/83, DEQ Ch 7]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded **ARC 7954C**, IAB 5/15/24, effective 6/19/24

CHAPTER 26
PREVENTION OF AIR POLLUTION EMERGENCY EPISODES

[Prior to 7/1/83, DEQ Ch 8]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded **ARC 7955C**, IAB 5/15/24, effective 6/19/24

CHAPTER 27
CERTIFICATE OF ACCEPTANCE

[Prior to 7/1/83, DEQ Ch 9]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—27.1(455B) General. Political subdivisions shall meet the conditions specified in this chapter if the political subdivisions pursue acceptance of the local air pollution control program and obtain a certificate of acceptance from the director, as provided in Iowa Code section 455B.145.

[ARC 7956C, IAB 5/15/24, effective 6/19/24]

567—27.2(455B) Certificate of acceptance. The governing body of a political subdivision may make application for a certificate of acceptance.

27.2(1) Forms. Each application for a certificate of acceptance shall be submitted to the director on forms available from the department.

27.2(2) Processing of applications. The director shall make an investigation of the program or portion of a program covered by an application for a certificate of acceptance to evaluate conformance with applicable provisions of Iowa Code section 455B.145.

a. Granting of certificate. A certificate of acceptance may be granted by the director if the program is consistent with Iowa Code chapter 455B, division II, and the rules established in this chapter.

b. Review of program. The director shall provide for a review of the program activities at intervals as the director prescribes for evaluation of the continuation of the certificate. Following the review, the director may continue the certificate in effect or suspend the certificate, in conformance with Iowa Code sections 455B.134(12) and 455B.145.

[ARC 7956C, IAB 5/15/24, effective 6/19/24]

567—27.3(455B) Ordinance or regulations.

27.3(1) Legal aspects. Each local control program considered for a certificate of acceptance must be conducted under an appropriate ordinance or set of regulations, as specified in Iowa Code section 455B.145 and this rule.

27.3(2) Legal authority. The ordinance or regulations shall provide authority to the local control agency as follows:

a. Scope of control. Authority and responsibility for air pollution control within the entire area included in the jurisdiction involved.

b. Degree of control. Authority to prevent, abate and control air pollution from all sources within its area of jurisdiction, in accordance with requirements consistent with the provisions specified in these rules.

c. Enforcement. Legal authority to enforce its requirements and standards.

d. Inspection and tests. Legal authority to make inspections, perform emission tests and obtain data, reports or other information relating to sources of air pollution that may be necessary to prepare air contaminant emission inventories, and to evaluate control measures needed to meet specified goals.

27.3(3) Control of air pollution. The ordinance or regulations shall contain provisions applicable to the control or prohibition of emissions of air contaminants as listed below.

a. Emission control. Requirements specifying maximum concentrations, density or rates of discharge of emissions of air contaminants from specified sources.

(1) These requirements may be included in the ordinance or regulations, or in standards adopted by the local control agency under the authority granted by such ordinance or regulations.

(2) These requirements shall not establish an emission standard for any specific source that is in excess of the emission standard specified in 567—Chapter 23 for that source.

b. Prohibition of emissions. Provisions prohibiting the installation of equipment having a potential for air pollution without adequate control equipment. Such restriction may be included in the building code applicable to the jurisdiction covered by the local control agency.

c. Open burning. Provisions prohibiting open burning, including backyard burning, in urban areas within the jurisdiction of the local control agency.

(1) Provisions relating to backyard burning may consist of a program requiring the prohibition of such burning within a reasonable period of time.

(2) Provisions applicable to open burning may include a variance procedure, so long as no variance that would prevent the attainment or maintenance of ambient air quality standards for suspended particulates and carbon monoxide is issued.

d. Requirements for permits. Provisions requiring installation and operating permits for all new or altered equipment capable of emitting air contaminants into the atmosphere installed within the jurisdiction of the local control agency.

27.3(4) Enforcement. The ordinance or regulations of the local control agency shall include an effective mechanism for enforcing the provisions specified thereunder, as listed below.

a. Procedures. The local control ordinance or regulations shall specify that any violation of its provisions is subject to civil and criminal penalties.

b. Penalties. The penalties specified in such ordinance or regulations shall include fines, injunctive relief and sealing of equipment found to be not in compliance with applicable provisions of the ordinance or regulations.

c. Procedures for granting variances or extensions of time to attain compliance status. The local control agency shall maintain on file a record of the names, addresses, sources of emissions, types of emissions, rates of emissions, reason for granting, conditions and length of time specified, relating to all variances or extension of time granted and shall make such records available to the commission or the department upon request.

[ARC 7956C, IAB 5/15/24, effective 6/19/24]

567—27.4(455B) Administrative organization.

27.4(1) Administrative facilities. Each local control program considered for a certificate of acceptance must have the administrative facilities necessary for effective operation of such program including but not limited to those listed below.

a. Agency. Designation of a legally constituted body within the organizational structure of the applicable political subdivision or combination of political subdivisions, as the administrative authority for the local control program.

b. Procedures. Adoption of definite administrative procedures for developing, promulgating and enforcing requirements and standards for air pollution control within the jurisdiction of the local control agency.

c. Staff. Employment of a technical and clerical staff deemed adequate to conduct the air pollution control activities in the local control program.

(1) Key technical staff personnel shall have received training or experience in air quality management program procedures.

(2) At least one member of the technical staff shall be assigned full-time duty in the operation of the local control program.

27.4(2) Financial support. Each local control program considered for a certificate of acceptance shall have adequate financial support for the operation of effective program activities.

27.4(3) Physical facilities. Each local control program considered for a certificate of acceptance must have the physical facilities necessary for the operation of effective program activities, including those listed below.

a. Office space. Sufficient office space and equipment to accommodate the members of the technical and clerical staff.

b. Laboratory facilities. The laboratory space and equipment shall be adequate for the effective exercise of the specific functions required in the operation of the local control program.

c. Transportation facilities. These facilities shall include provisions for transportation of personnel to service air monitoring equipment, visits to sources of emissions for investigative purposes and other appropriate program activities.

[ARC 7956C, IAB 5/15/24, effective 6/19/24]

567—27.5(455B) Program activities. Each local control program considered for a certificate of acceptance must conduct air pollution control activities adequate to provide adequate control of air pollution within the jurisdiction of the local control program, including but not limited to those listed below. In conducting these program activities, the local control agency shall make every effort to meet the specified ambient air quality objectives applicable to the state of Iowa.

27.5(1) *Evaluation of problems.* Conduct activities to determine the actual and potential air pollution problems within the jurisdiction of the local control agency, and compare the present air quality in that jurisdiction with the air quality standards and objectives promulgated for this state. The air quality within the jurisdiction shall be determined by an air monitoring program, using sampling techniques and laboratory determinations compatible with those used in the air pollution control program of this state. The air monitoring program of the local control agency shall give attention to the air contaminants considered to be indices of pollution in this state.

27.5(2) *Control activities.* Conduct activities to abate or control emissions of air contaminants from existing equipment or from new or altered equipment located within the jurisdiction of the local control agency.

a. A program of plant inspections shall be conducted with respect to control of emissions from existing equipment. These activities should include the collection of data related to the types of emissions and the rate of discharge of emissions from each source involved, along with stack sampling when deemed appropriate.

b. Procedures for plan review and the issuing of permits relating to the installation or alteration such that the emission of air contaminants is significantly altered shall be conducted with respect to control of emissions from new or altered sources. These procedures may include provisions for permits relating to the use of the equipment involved.

[ARC 7956C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code sections 455B.133, 455B.143, and 455B.145.

[Filed 5/2/72; amended 12/11/73]

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CHAPTER 28
AMBIENT AIR QUALITY STANDARDS

[Prior to 7/1/83, DEQ Ch 10]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded **ARC 7957C**, IAB 5/15/24, effective 6/19/24

CHAPTER 29
QUALIFICATION IN VISUAL DETERMINATION OF THE OPACITY OF EMISSIONS

[Prior to 7/1/83, DEQ Ch 11]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded **ARC 7958C**, IAB 5/15/24, effective 6/19/24

CHAPTER 30 FEES

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—30.1(455B) Purpose. This chapter sets forth requirements to pay fees for specified activities. The department shall not initiate review and processing of an application submittal from a minor source until all required fees have been paid to the department. Fees are nonrefundable, except as provided in 30.1(4).

30.1(1) Definition. For purposes of this chapter, the following definition shall apply:

“Application submittal” means one or more applications required under 567—22.1(455B) and submitted at the same time or required to be submitted under 567—22.4(455B), 567—22.5(455B), 567—Chapter 31 or 567—Chapter 33.

30.1(2) Duty to correct errors. If an owner, an operator, or the department finds an error in a fee assessed or collected under this chapter, the owner or operator shall submit to the department revised forms making the necessary corrections to the fee and shall submit the correct fee. Corrected forms shall be submitted as soon as possible after the error is discovered or upon notification by the department. If the error correction results in a determination by the department that a fee was overpaid or that a duplicate fee was submitted, the department will return the overpaid balance of the fee to the applicant.

30.1(3) Exemption to fee requirements for administrative amendments. A fee shall not be required for any of the following:

- a. Corrections of typographical errors;
- b. Corrections of word processing errors;
- c. Changes in the name, address, or telephone number of any person identified in a permit, or similar minor administrative changes at the source; and
- d. Changes in ownership or operational control of a source where the department determines that no other change in the permit is necessary, provided that a written agreement that contains a specific date for transfer of permit responsibility and coverage, and liability between the current permittee and the new permittee has been submitted to the department.

30.1(4) Refund of application fee minus administrative cost for permit applications at minor sources. The department may refund the application fee minus administrative costs if the owner or operator requests to withdraw the application prior to commencement of the technical review of the application.

[ARC 7959C, IAB 5/15/24, effective 6/19/24]

567—30.2(455B) Fees associated with new source review applications. Each owner or operator required to provide an application submittal, including air quality modeling as applicable; registration; permit by rule; and template under 567—subrule 22.1(1), 567—22.4(455B), 567—22.5(455B), 567—22.8(455B), 567—22.10(455B), 567—Chapter 31 or 567—Chapter 33, shall pay fees as specified in the fee schedule approved by the commission and posted on the department’s website. Fees shall be submitted with forms supplied by the department.

30.2(1) Payment of regulatory applicability determination fee. Each owner or operator requesting a regulatory applicability determination, as specified in 567—paragraph 22.1(3)“a,” shall pay fees as specified in the fee schedule approved by the commission and posted on the department’s website. Fees shall be submitted with forms provided by the department.

30.2(2) Reserved.

[ARC 7959C, IAB 5/15/24, effective 6/19/24]

567—30.3(455B) Fees associated with asbestos demolition or renovation notification.

30.3(1) Payment of fees established. The owner or operator of a site subject to the national emission standard for hazardous air pollutants (NESHAP) for asbestos notifications, adopted by reference in 567—paragraph 23.1(3)“a,” shall submit a fee with each required original or each annual notification for each demolition or renovation, including abatement. Fees shall be paid as specified in the fee schedule approved by the commission and posted on the department’s website. Fees shall be submitted with the notification forms provided by the department.

30.3(2) *Fee not required.* A fee shall not be required for the following:

- a. Notifications when the total amount of asbestos to be removed or disturbed is less than 260 linear feet, less than 160 square feet, and less than 35 cubic feet of facility components and is below the reporting thresholds as defined in 40 CFR 61.145 as amended on January 16, 1991;
- b. Notifications of training fires as required in 567—paragraph 23.2(3) “g”;
- c. Controlled burning of demolished buildings as required in 567—paragraph 23.2(3) “j”;
- d. Revised, canceled, and courtesy notifications. A revision to a previously submitted courtesy notification due to applicability of the notification requirements in 567—paragraph 23.1(3) “a” is considered an original notification and is subject to the fee requirements of 30.3(1).

[ARC 7959C, IAB 5/15/24, effective 6/19/24]

567—30.4(455B) Fees associated with Title V operating permits.

30.4(1) *Payment of Title V application fee.* Each owner or operator required to apply for a Title V permit, or a renewal of a Title V permit, shall pay fees as specified in the fee schedule approved by the commission and posted on the department’s website. Fees shall be submitted with forms supplied by the department.

30.4(2) *Payment of Title V annual emissions fee.*

a. *Fee required.* Any person required to obtain a Title V permit shall pay an annual fee based on the first 4,000 tons of each regulated air pollutant and shall be paid on or before July 1 of each year. The Title V emissions fee shall be based on actual emissions required to be included in the Title V operating permit application and the annual emissions statement for the previous calendar year. The commission shall not set the fee higher than \$70 per ton without adopting the change pursuant to formal rulemaking.

b. *Fee and documentation due dates.* The fee shall be submitted annually by July 1 with forms specified by the department.

c. *Operation in Iowa.* The fee for a portable emissions unit or stationary source that operates both in Iowa and out of state shall be calculated only for emissions from the source while it is operating in Iowa.

d. *Title V exempted stationary sources.* No fee shall be required for emissions until the year in which sources exempted under 567—subrules 24.102(1) and 24.102(2) are required to apply for a Title V permit. Fees shall be paid for the emission year preceding the year in which the application is due and thereafter.

e. *Insignificant activities.* No fee shall be required for insignificant activities as defined in 567—24.103(455B).

[ARC 7959C, IAB 5/15/24, effective 6/19/24]

567—30.5(455B) Fee stakeholder meetings. Prior to each March commission meeting, the director shall convene fee stakeholder meetings as specified in Iowa Code sections 455B.133B and 455B.133C for the purposes of reviewing a draft budget and providing recommendations to the department regarding establishing or adjusting fees. Any stakeholder may attend the fee stakeholder meetings. The meetings will be open to the public. The date of each meeting shall be posted on the department’s website 14 days prior to the meeting.

[ARC 7959C, IAB 5/15/24, effective 6/19/24]

567—30.6(455B) Process to establish or adjust fees and notification of fee rates.

30.6(1) *Setting the fees.* The department shall submit the proposed budget and fees for major and minor source construction permit programs, the Title V operating permit program, and the asbestos NESHAP program for the following fiscal year to the commission no later than the March commission meeting of each year, at which time the proposal will be available for public comment until such time as the commission acts on the proposal or until the May commission meeting, whichever occurs first. The department’s calculated estimate for each fee shall not produce total revenues in excess of limits specified in Iowa Code sections 455B.133B and 455B.133C during any fiscal year. If an established fee amount must be adjusted, the commission shall set the fees no later than the May commission meeting of each year.

Adjusted or established fees shall become effective on July 1. A fee not adjusted by the commission shall remain in effect as previously established until the fee is adjusted by the commission.

30.6(2) *Fee types and dollar caps on fee types.* The commission may set fees for the fee types and activities specified in this subrule and shall not set a fee in the fee schedule higher than the levels specified in this subrule without adopting the change pursuant to formal rulemaking:

- a. New source review applications from major sources, which may include:
 - (1) Review of each application for a construction permit: \$115 per hour;
 - (2) Review of each application for a prevention of significant deterioration permit: \$115 per hour;
 - (3) Review of each plantwide applicability limit request, renewal, or reopening: \$115 per hour;
 - (4) Review of each regulatory applicability determination: \$115 per hour; and
 - (5) Air quality modeling review: \$90 per hour.
- b. New source review applications from minor sources, which may include:
 - (1) Each application for a construction permit: \$385;
 - (2) Each application for a registration permit: \$100;
 - (3) Each application for a permit by rule: \$100; and
 - (4) Each application for a permit template: \$100.
- c. Asbestos notifications: \$100.
- d. Review of each initial or renewal Title V operating permit application: \$100 per hour.
- e. Title V annual emissions: \$70 per ton.

30.6(3) *Notification of fee schedule.* Following the initial setting of any fee by the commission, the department shall make available to the public a fee schedule at least 30 days prior to its effective date. If any established fee amount is adjusted, the department shall make available to the public a revised fee schedule at least 30 days prior to its effective date. The fee schedule shall be posted on the department's website.

[ARC 7959C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code sections 455B.133, 455B.133B, and 455B.133C.

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[Filed ARC 7959C (Notice ARC 7219C, IAB 12/27/23), IAB 5/15/24, effective 6/19/24]

CHAPTER 31 NONATTAINMENT NEW SOURCE REVIEW

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—31.1(455B) Permit requirements relating to nonattainment areas.

31.1(1) This chapter implements the nonattainment new source review (NNSR) program contained in Part D of Title I of the federal Clean Air Act and as promulgated under 40 CFR §51.165 as amended through March 30, 2011, and 40 CFR Part 51, Appendix S, as amended through July 1, 2011.

31.1(2) The NNSR program is a preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under Part D of Title I of the federal Clean Air Act as amended through November 15, 1990. The NNSR program applies only in areas that do not meet the national ambient air quality standards (NAAQS).

31.1(3) Section 107(d) of the federal Clean Air Act, 42 U.S.C. §7457(d), requires each state to submit to the Administrator of the federal Environmental Protection Agency a list of areas that exceed the NAAQS, that are lower than those standards, or that cannot be classified on the basis of current data.

31.1(4) A list of Iowa's nonattainment area designations is found at 40 CFR §81.316. An owner or operator required to apply for a construction permit under this chapter or requesting a plantwide applicability limit (PAL) shall submit fees as required in 567—Chapter 30.

[ARC 7960C, IAB 5/15/24, effective 6/19/24]

567—31.2 Reserved.

567—31.3(455B) Nonattainment new source review (NNSR) requirements for areas designated nonattainment.

31.3(1) Definitions. For the purpose of NNSR, the following definitions shall apply:

“Act” means the Clean Air Act, 42 U.S.C. §7401, et seq., as amended through November 15, 1990.

“Actual emissions” means:

1. The actual rate of emissions of a regulated new source review (NSR) pollutant from an emissions unit, as determined in accordance with paragraphs “2” through “4,” except that this definition shall not apply for calculating whether a significant emissions increase has occurred, or for establishing a PAL under 567—31.9(455B). Instead, the definitions of projected actual emissions and baseline actual emissions shall apply for those purposes.

2. In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period that precedes the particular date and that is representative of normal source operation. The department shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

3. The department may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.

4. For any emissions unit that has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

“Administrator” means the administrator for the U.S. Environmental Protection Agency (EPA) or designee.

“Allowable emissions” means the emissions rate of a stationary source calculated using the maximum rated capacity of the source (unless the source is subject to federally enforceable limits that restrict the operating rate, or hours of operation, or both) and the most stringent of the following:

1. The applicable standards as set forth in 567—subrules 23.1(2) through 23.1(5) (new source performance standards, emissions standards for hazardous air pollutants, and federal emissions guidelines) or an applicable federal standard not adopted by the state, as set forth in 40 CFR Parts 60, 61 and 63;

2. The state implementation plan (SIP) emissions limitation, including those with a future compliance date; or

3. The emissions rate specified as an enforceable permit condition, including those with a future compliance date.

“Baseline actual emissions,” for the purposes of this rule, means the rate of emissions, in tons per year, of a regulated NSR pollutant, as determined in accordance with paragraphs “1” through “4.”

1. For any existing electric utility steam generating unit, baseline actual emissions means the average rate, in tons per year, at which the unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the five-year period immediately preceding when the owner or operator begins actual construction of the project. The department shall allow the use of a different time period upon a determination that it is more representative of normal source operation.

(a) The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.

(b) The average rate shall be adjusted downward to exclude any noncompliant emissions that occurred while the source was operating above an emissions limitation that was legally enforceable during the consecutive 24-month period.

(c) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period must be used to determine the baseline actual emissions for the emissions units being changed. A different consecutive 24-month period can be used for each regulated NSR pollutant.

(d) The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by paragraph “1”(b) of this definition.

2. For an existing emissions unit (other than an electric utility steam generating unit), baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the ten-year period immediately preceding either the date the owner or operator begins actual construction of the project, or the date on which a complete permit application is received by the department for a permit required either under this rule or under a plan approved by the Administrator, whichever is earlier, except that the ten-year period shall not include any period earlier than November 15, 1990.

(a) The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.

(b) The average rate shall be adjusted downward to exclude any noncompliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24-month period.

(c) The average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply, had such major stationary source been required to comply with such limitations during the consecutive 24-month period. However, if an emission limitation is part of a maximum achievable control technology standard that the Administrator proposed or promulgated under 40 CFR Part 63, the baseline actual emissions need only be adjusted if the state has taken credit for such emissions reductions in an attainment demonstration or maintenance plan consistent with the requirements of 31.3(3)“b”(7).

(d) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period must be used to determine the baseline actual emissions for the emissions units being changed. A different consecutive 24-month period can be used for each regulated NSR pollutant.

(e) The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by paragraphs “2”(b) and “2”(c) of this definition.

3. For a new emissions unit, the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero, and thereafter, for all other purposes, shall equal the unit’s potential to emit.

4. For a PAL for a major stationary source, the baseline actual emissions shall be calculated for existing electric utility steam generating units in accordance with the procedures contained in paragraph

“1,” for other existing emissions units in accordance with the procedures contained in paragraph “2,” and for a new emissions unit in accordance with the procedures contained in paragraph “3.”

“*Begin actual construction*” means, in general, initiation of physical on-site construction activities on an emissions unit that are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures. With respect to a change in method of operating, this term refers to those on-site activities other than preparatory activities that mark the initiation of the change.

“*Best available control technology*” or “*BACT*” means an emissions limitation, including a visible emissions standard, based on the maximum degree of reduction for each regulated NSR pollutant that would be emitted from any proposed major stationary source or major modification that the department, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant that would exceed the emissions allowed by any applicable standard under 567—subrules 23.1(2) through 23.1(5) (standards for new stationary sources, federal standards for hazardous air pollutants, and federal emissions guidelines), or federal regulations as set forth in 40 CFR Parts 60, 61, and 63 but not yet adopted by the state. If the department determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, or operational standard or combination thereof may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means that achieve equivalent results.

“*Building, structure, facility, or installation*” means all of the pollutant-emitting activities that belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same major group (i.e., that have the same two-digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement (U.S. Government Printing Office stock numbers 4101-0065 and 003-005-00176-0, respectively).

“*CFR*” means the Code of Federal Regulations, with standard references in this chapter by title and part, so that “40 CFR 51” or “40 CFR Part 51” means “Title 40 Code of Federal Regulations, Part 51.”

“*Clean coal technology*” means any technology, including technologies applied at the precombustion, combustion, or post-combustion stage, at a new or existing facility that will achieve significant reductions in air emissions of sulfur dioxide or oxides of nitrogen associated with the utilization of coal in the generation of electricity, or process steam that was not in widespread use as of November 15, 1990.

“*Clean coal technology demonstration project*” means a project using funds appropriated under the heading “Department of Energy—Clean Coal Technology,” up to a total amount of \$2,500,000,000 for commercial demonstration of clean coal technology, or similar projects funded through appropriations for the EPA. The federal contribution for a qualifying project shall be at least 20 percent of the total cost of the demonstration project.

“*Commence*,” as applied to construction of a major stationary source or major modification, means that the owner or operator has all necessary preconstruction approvals or permits and either has:

1. Begun, or caused to begin, a continuous program of actual on-site construction of the source, to be completed within a reasonable time; or
2. Entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable time.

“*Construction*” means any physical change or change in the method of operation, including fabrication, erection, installation, demolition, or modification of an emissions unit, that would result in a change in emissions.

“Continuous emissions monitoring system” or *“CEMS”* means all of the equipment that may be required to meet the data acquisition and availability requirements of this rule, to sample, to condition (if applicable), to analyze, and to provide a record of emissions on a continuous basis.

“Continuous emissions rate monitoring system” or *“CERMS”* means the total equipment required for the determination and recording of the pollutant mass emissions rate (in terms of mass per unit of time).

“Continuous parameter monitoring system” or *“CPMS”* means all of the equipment necessary to meet the data acquisition and availability requirements of this rule, to monitor process and control device operational parameters (for example, control device secondary voltages and electric currents) and other information (for example, gas flow rate, O₂ or CO₂ concentrations), and to record average operational parameter value(s) on a continuous basis.

“Electric utility steam generating unit” means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

“Emissions unit” means any part of a stationary source that emits or would have the potential to emit any regulated NSR pollutant and includes an electric steam generating unit. For purposes of this rule, there are two types of emissions units as described in paragraphs “1” and “2.”

1. A new emissions unit is any emissions unit that is (or will be) newly constructed and that has existed for less than two years from the date such emissions unit first operated.

2. An existing emissions unit is any emissions unit that does not meet the requirements in paragraph “1” of this definition. A replacement unit is an existing emissions unit.

“Federal land manager” means, with respect to any lands in the United States, the secretary of the department with authority over such lands.

“Federally enforceable” means all limitations and conditions that are enforceable by the Administrator and the department, including those federal requirements not yet adopted by the state, developed pursuant to 40 CFR Parts 60, 61, and 63; requirements within 567—subrules 23.1(2) through 23.1(5); requirements within the SIP; any permit requirements established pursuant to 40 CFR §52.21 or under regulations approved pursuant to 40 CFR Part 51, Subpart I, as amended through October 20, 2010, including operating permits issued under an EPA-approved program that is incorporated into the SIP and expressly requires adherence to any permit issued under such program.

“Fugitive emissions” means those emissions that could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening.

“Lowest achievable emissions rate” or *“LAER”* means, for any source, the more stringent rate of emissions based on the following:

1. The most stringent emissions limitation that is contained in the implementation plan of any state for such class or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or

2. The most stringent emissions limitation that is achieved in practice by such class or category of stationary sources. This limitation, when applied to a modification, means the lowest achievable emissions rate for the new or modified emissions units within a stationary source. In no event shall the application of the term permit a proposed new or modified stationary source to emit any pollutant in excess of the amount allowable under an applicable new source standard of performance.

“Major modification” means any physical change in, or change in the method of, operation of a major stationary source that would result in a significant emissions increase of a regulated NSR pollutant and a significant net emissions increase of that pollutant from the major stationary source.

1. Any significant emissions increase from any emissions units or net emissions increase at a major stationary source that is significant for volatile organic compounds shall be considered significant for ozone.

2. A physical change or change in the method of operation shall not include:

(a) Routine maintenance, repair, and replacement;

(b) Use of an alternative fuel or raw material by reason of an order under Sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plan pursuant to the Federal Power Act;

(c) Use of an alternative fuel by reason of an order or rule Section 125 of the Act;

(d) Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste;

(e) Use of an alternative fuel or raw material by a stationary source that the source was capable of accommodating before December 21, 1976, unless such change would be prohibited under any federally enforceable permit condition that was established after December 12, 1976, pursuant to 40 CFR §52.21 or under regulations approved pursuant to 40 CFR Subpart I or §51.166; or the source is approved to use under any permit issued under regulations approved pursuant to this rule;

(f) An increase in the hours of operation or in the production rate, unless such change is prohibited under any federally enforceable permit condition that was established after December 21, 1976, pursuant to 40 CFR §52.21 or regulations approved pursuant to 40 CFR Part 51, Subpart I, or 40 CFR §51.166;

(g) Any change in ownership at a stationary source;

(h) Reserved.

(i) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project, provided that the project complies with the SIP, and other requirements necessary to attain and maintain the national ambient air quality standard during the project and after it is terminated.

3. This definition shall not apply with respect to a particular regulated NSR pollutant when the major stationary source is complying with the requirements under 567—31.9(455B) for a PAL for that pollutant. Instead, the definition in 567—31.9(455B) shall apply.

4. For the purpose of applying the requirements of 31.3(8) to modifications at major stationary sources of nitrogen oxides located in ozone nonattainment areas or in ozone transport regions, whether or not subject to Subpart 2, Part D, Title I of the Act, any significant net emissions increase of nitrogen oxides is considered significant for ozone.

5. Any physical change in, or change in the method of operation of, a major stationary source of volatile organic compounds that results in any increase in emissions of volatile organic compounds from any discrete operation, emissions unit, or other pollutant emitting activity at the source shall be considered a significant net emissions increase and a major modification for ozone, if the major stationary source is located in an extreme ozone nonattainment area that is subject to Subpart 2, Part D, Title I of the Act.

“Major stationary source” means:

1. Any stationary source of air pollutants that emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant, except that lower emissions thresholds shall apply in areas subject to Subpart 2, Subpart 3, or Subpart 4 of Part D, Title I of the Act, according to definitions in 31.3(1).

(a) 50 tons per year of volatile organic compounds in any serious ozone nonattainment area.

(b) 50 tons per year of volatile organic compounds in an area within an ozone transport region, except for any severe or extreme ozone nonattainment area.

(c) 25 tons per year of volatile organic compounds in any severe ozone nonattainment area.

(d) 10 tons per year of volatile organic compounds in any extreme ozone nonattainment area.

(e) 50 tons per year of carbon monoxide in any serious nonattainment area for carbon monoxide, where stationary sources contribute significantly to carbon monoxide levels in the area (as determined under rules issued by the Administrator).

(f) 70 tons per year of PM₁₀ in any serious nonattainment area for PM₁₀.

2. For the purposes of applying the requirements of 31.3(8) to stationary sources of nitrogen oxides located in an ozone nonattainment area or in an ozone transport region, any stationary source that emits, or has the potential to emit, 100 tons per year or more of nitrogen oxides emissions, except that the following emission thresholds apply in areas subject to Subpart 2 of Part D, Title I of the Act:

(a) 100 tons per year or more of nitrogen oxides in any ozone nonattainment area classified as marginal or moderate.

(b) 100 tons per year or more of nitrogen oxides in any ozone nonattainment area classified as a transitional, submarginal, or incomplete or no data area, when such area is located in an ozone transport region.

(c) 100 tons per year or more of nitrogen oxides in any area designated under Section 107(d) of the Act as attainment or unclassifiable for ozone that is located in an ozone transport region.

(d) 50 tons per year or more of nitrogen oxides in any serious nonattainment area for ozone.

(e) 25 tons per year or more of nitrogen oxides in any severe nonattainment area for ozone.

(f) 10 tons per year or more of nitrogen oxides in any extreme nonattainment area for ozone.

3. Any physical change that would occur at a stationary source not qualifying under 31.3(1) as a major stationary source, if the change would constitute a major stationary source by itself.

4. A major stationary source that is major for volatile organic compounds shall be considered major for ozone.

5. The fugitive emissions of a stationary source shall not be included in determining for any of the purposes of this rule whether it is a major stationary source, unless the source belongs to one of the following categories of stationary sources: coal cleaning plants (with thermal dryers); kraft pulp mills; Portland cement plants; primary zinc smelters; iron and steel mills; primary aluminum ore reduction plants; primary copper smelters; municipal incinerators capable of charging more than 250 tons of refuse per day; hydrofluoric, sulfuric, or nitric acid plants; petroleum refineries; lime plants; phosphate rock processing plants; coke oven batteries; sulfur recovery plants; carbon black plants (furnace process); primary lead smelters; fuel conversion plants; sintering plants; secondary metal production plants; chemical process plants (the term chemical processing plant shall not include ethanol production facilities that produce ethanol by natural fermentation included in North American Industry Classification System (NAICS) codes 325193 or 312140); fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input; petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels; taconite ore processing plants; glass fiber processing plants; charcoal production plants; fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input; and any other stationary source category that, as of August 7, 1980, is being regulated under Section 111 or 112 of the Act.

“Necessary preconstruction approvals or permits” means those permits or approvals required under federal air quality control laws and regulations and those air quality control laws and regulations that are part of the SIP.

“Net emissions increase” means, with respect to any regulated NSR pollutant emitted by a major stationary source, the amount by which the sum of the following exceeds zero: the increase in emissions from a particular physical change or change in the method of operation at a stationary source as calculated according to the applicability requirements of 31.3(2) “b,” and any other increases and decreases in actual emissions at the major stationary source that are contemporaneous with the particular change and are otherwise creditable. Baseline actual emissions for calculating increases and decreases shall be determined as provided in the definition of “baseline actual emissions,” except that paragraphs “1”(c) and “2”(d) shall not apply.

1. An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if the increase or decrease in actual emissions occurs between the date five years before construction on the particular change commences and the date that the increase from the particular change occurs.

2. An increase or decrease in actual emissions is creditable only if:

(a) The increase or decrease in actual emissions occurs within the contemporaneous time period, as noted in paragraph “1” of this definition; and

(b) The department has not relied on the increase or decrease in actual emissions in issuing a permit for the source under this rule, which permit is in effect when the increase in actual emissions from the particular change occurs.

(c) Reserved.

3. An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.

4. A decrease in actual emissions is creditable only to the extent that:
 - (a) The old level of actual emission or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions;
 - (b) It is enforceable as a practical matter at and after the time that actual construction on the particular change begins;
 - (c) The department has not relied on a decrease in actual emissions in issuing any permit under regulations approved pursuant to 40 CFR Part 51, Subpart I, or has not relied on a decrease in actual emissions in demonstrating attainment or reasonable further progress; and
 - (d) The decrease in actual emissions has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change.
5. An increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.
6. Actual emissions shall not apply for determining creditable increases and decreases or after a change.

“Nonattainment new source review program” or “NNSR program” means a major source preconstruction permit program that has been approved by the Administrator and incorporated into the plan to implement the requirements of this rule, or a program that implements 40 CFR Part 51, Appendix S, Sections I through VI, as amended through October 25, 2012. Any permit issued under such a program is a major NSR permit.

“Pollution prevention” means any activity that, through process changes, product reformulation or redesign, or substitution of less polluting raw materials, eliminates or reduces the release of air pollutants (including fugitive emissions) and other pollutants to the environment prior to recycling, treatment, or disposal. “Pollution prevention” does not mean recycling (other than certain in-process recycling practices), energy recovery, treatment, or disposal.

“Potential to emit” means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

“Predictive emissions monitoring system” or “PEMS” means all of the equipment necessary to monitor process and control device operational parameters (for example, control device secondary voltages and electric currents) and other information (for example, gas flow rate, O₂ or CO₂ concentrations), and calculate and record the mass emissions rate (for example, lb/hr) on a continuous basis.

“Prevention of significant deterioration permit” or “PSD permit” means any permit that is issued under a major source preconstruction permit program that has been approved by the Administrator and incorporated into the plan to implement the requirements of 40 CFR §51.166, or under the program in 40 CFR §52.21.

“Project” means a physical change in, or change in the method of operation of, an existing major stationary source.

“Projected actual emissions” means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the five years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the ten years following that date, if the project involves increasing the emissions unit’s design capacity or its potential to emit of that regulated NSR pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major stationary source. In determining the projected actual emissions before beginning actual construction, the owner or operator of the major stationary source:

1. Shall consider all relevant information including, but not limited to, historical operational data, the company’s own representations, the company’s expected business activity and the company’s highest

projections of business activity, the company's filings with the state or federal regulatory authorities, and compliance plans under the approved plan; and

2. Shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions; and

3. Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project, including any increased utilization due to product demand growth; or

4. In lieu of using the method set out in paragraphs "1" through "3," may elect to use the emissions unit's potential to emit, in tons per year.

"Reasonable period" means an increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if the increase or decrease in actual emissions occurs between the date five years before construction on the particular change commences and the date that the increase from the particular change occurs.

"Regulated NSR pollutant" means the following:

1. Nitrogen oxides or any volatile organic compounds;
2. Any pollutant for which a national ambient air quality standard has been promulgated;
3. Any pollutant that is identified as a constituent or precursor of a general pollutant listed under paragraph "1" or "2," provided that such constituent or precursor pollutant may only be regulated under NSR as part of regulation of the general pollutant. Precursors identified by the Administrator for purposes of NSR are the following:

(a) Volatile organic compounds and nitrogen oxides are precursors to ozone in all ozone nonattainment areas.

(b) Sulfur dioxide is a precursor to PM_{2.5} in all PM_{2.5} nonattainment areas.

(c) Nitrogen oxides are presumed to be precursors to PM_{2.5} in all PM_{2.5} nonattainment areas, unless the department demonstrates to the EPA's satisfaction or the EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to the area's ambient PM_{2.5} concentrations.

(d) Volatile organic compounds and ammonia are presumed not to be precursors to PM_{2.5} in any PM_{2.5} nonattainment area, unless the department demonstrates to the EPA's satisfaction or the EPA demonstrates that emissions of volatile organic compounds or ammonia from sources in a specific area are a significant contributor to that area's ambient PM_{2.5} concentrations; or

4. PM_{2.5} emissions and PM₁₀ emissions shall include gaseous emissions from a source or activity that condense to form particulate matter at ambient temperatures.

"Replacement unit" means an emissions unit for which all the criteria listed in paragraphs "1" through "4" of this definition are met. No creditable emission reductions shall be generated from shutting down the existing emissions unit that is replaced.

1. The emissions unit is a reconstructed unit within the meaning of 40 CFR §60.15(b)(1) as amended through December 16, 1975, or the emissions unit completely takes the place of an existing emissions unit.

2. The emissions unit is identical to or functionally equivalent to the replaced emissions unit.

3. The replacement does not alter the basic design parameters of the process unit.

4. The replaced emissions unit is permanently removed from the major stationary source, otherwise permanently disabled, or permanently barred from operation by a permit that is enforceable as a practical matter. If the replaced emissions unit is brought back into operation, it shall constitute a new emissions unit.

"Reviewing authority" means the department of natural resources.

"Secondary emissions" means emissions that would occur as a result of the construction or operation of a major stationary source or major modification but do not come from the major stationary source or major modification itself. For the purpose of this rule, "secondary emissions" must be specific, be well defined, be quantifiable, and impact the same general area as the stationary source or modification that causes the secondary emissions. "Secondary emissions" includes emissions from any offsite support facility that would not be constructed or increase its emissions except as a result of the construction or operation of the

major stationary source of major modification. “Secondary emissions” does not include any emissions that come directly from a mobile source such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel.

“Significant” means:

1. In reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

Pollutant Emission Rate

- (a) Carbon monoxide: 100 tons per year (tpy)
- (b) Nitrogen oxides: 40 tpy
- (c) Sulfur dioxide: 40 tpy
- (d) Ozone: 40 tpy of volatile organic compounds or nitrogen oxides
- (e) Lead: 0.6 tpy
- (f) PM₁₀: 15 tpy
- (g) PM_{2.5}: 10 tpy of direct PM_{2.5} emissions, 40 tpy of sulfur dioxide emissions, or 40 tpy of nitrogen oxide emissions unless the department demonstrates to the EPA’s satisfaction that the emissions of nitrogen oxides from sources in a specific area are not a significant contributor to the area’s ambient PM_{2.5} concentrations.

2. Notwithstanding the significant emissions rate for ozone, “significant” means, in reference to an emissions increase or a net emissions increase, any increase in actual emissions of volatile organic compounds that would result from any physical change in, or change in the method of operation of, a major stationary source locating in a serious or severe ozone nonattainment area that is subject to Subpart 2, Part D, Title I of the Act, if such emissions increase of volatile organic compounds exceeds 25 tons per year.

3. For the purposes of applying the requirements of 31.3(8) to modifications at major stationary sources of nitrogen oxides located in an ozone nonattainment area or in an ozone transport region, the significant emission rates and other requirements for volatile organic compounds in paragraphs “1,” “2,” and “5” shall apply to nitrogen oxides emissions.

4. Notwithstanding the significant emissions rate for carbon monoxide, “significant” means, in reference to an emissions increase or a net emissions increase, any increase in actual emissions of carbon monoxide that would result from any physical change in, or change in the method of operation of, a major stationary source in a serious nonattainment area for carbon monoxide if such increase equals or exceeds 50 tons per year, provided the department has determined that stationary sources contribute significantly to carbon monoxide levels in that area.

5. Notwithstanding the significant emissions rates for ozone under paragraphs “1” and “2,” any increase in actual emissions of volatile organic compounds from any emissions unit at a major stationary source of volatile organic compounds located in an extreme ozone nonattainment area that is subject to Subpart 2, Part D, Title I of the Act shall be considered a significant net emissions increase.

“Significant emissions increase” means, for a regulated NSR pollutant, an increase in emissions that is significant for that pollutant.

“Stationary source” means any building, structure, facility, or installation that emits or may emit a regulated NSR pollutant.

“Temporary clean coal technology demonstration project” means a clean coal technology demonstration project that is operated for a period of five years or less and that complies with the SIP and other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.

“Volatile organic compounds” or “VOC” means any compound included in the definition of “volatile organic compounds” found at 40 CFR §51.100(s) as amended through February 8, 2023.

31.3(2) Applicability procedures.

a. This subrule adopts a preconstruction review program to satisfy the requirements of Sections 172(c)(5) and 173 of the Act for any area designated nonattainment for any national ambient air quality standard under Subpart C of 40 CFR Part 81 as amended through August 5, 2013, and shall apply to any new major stationary source or major modification that is major for the pollutant for which the area is

designated nonattainment under Section 107(d)(1)(A)(i) of the Act, if the stationary source or modification would locate anywhere in the designated nonattainment area.

b. Each plan shall use the specific provisions of subparagraphs (1) through (6) of this paragraph. Deviations from these provisions will be approved only if the submitted provisions are more stringent than or at least as stringent in all respects as the corresponding provisions in subparagraphs (1) through (6) of this paragraph.

(1) Except as otherwise provided in 31.3(2)“c,” and consistent with the definition of major modification, a project is a major modification for a regulated NSR pollutant if it causes two types of emissions increases—a significant emissions increase and a significant net emissions increase. The project is not a major modification if it does not cause a significant emissions increase. If the project causes a significant emissions increase, then the project is a major modification only if it also results in a significant net emissions increase.

(2) The procedure for calculating (before beginning actual construction) whether a significant emissions increase (i.e., the first step of the process) will occur depends upon the type of emissions units being modified, according to subparagraphs (3) through (6) of this paragraph. The procedure for calculating (before beginning actual construction) whether a significant net emissions increase will occur at the major stationary source. Regardless of any such preconstruction projections, a major modification results if the project causes a significant emissions increase and a significant net emissions increase.

(3) Actual-to-projected-actual applicability test for projects that only involve existing emissions units. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions and the baseline actual emissions, for each existing emissions unit, equals or exceeds the significant amount for that pollutant.

(4) Actual-to-potential test for projects that only involve construction of a new emissions unit(s). A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the potential to emit from each new emissions unit following completion of the project and the baseline actual emissions of these units before the project equals or exceeds the significant amount for that pollutant.

(5) Reserved.

(6) Hybrid test for projects that involve multiple types of emissions units. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each emissions unit, using the method specified in subparagraphs (3) and (4) of this paragraph as applicable with respect to each emissions unit, for each type of emissions unit equals or exceeds the significant amount for that pollutant.

c. The plan shall require that for any major stationary source for a PAL for a regulated NSR pollutant, the major stationary source shall comply with requirements under 567—31.9(455B).

31.3(3) Creditable offsets.

a. For sources and modifications subject to any preconstruction review program, the baseline for determining credit for emissions reductions is the emissions limit in effect at the time the application to construct is filed, except that the offset baseline shall be the actual emissions of the source from which offset credit is obtained where:

(1) The demonstration of reasonable further progress and attainment of ambient air quality standards is based upon the actual emissions of sources located within a designated nonattainment area for which the preconstruction review program was adopted; or

(2) The SIP does not contain an emissions limitation for that source or source category.

b. Providing that:

(1) Where the emissions limit under the SIP allows greater emissions than the potential to emit of the source, emissions offset credit will be allowed only for control below this potential;

(2) For an existing fuel combustion source, credit shall be based on the allowable emissions under the SIP for the type of fuel being burned at the time the application to construct is filed. If the existing source commits to switch to a cleaner fuel at some future date, emissions offset credit based on the allowable (or actual) emissions for the fuels involved is not acceptable, unless the permit is conditioned to require the use of a specified alternative control measure that would achieve the same degree of emissions reduction

should the source switch back to a dirtier fuel at some later date. The department should ensure that adequate long-term supplies of the new fuel are available before granting emissions offset credit for fuel switches;

(3) Emissions reductions achieved by shutting down an existing emissions unit or curtailing production or operating hours may be generally credited for offsets if such reductions are surplus, permanent, quantifiable, and federally enforceable; and the shutdown or curtailment occurred after the last day of the base year for the SIP planning process. For purposes of this subparagraph, the department may choose to consider a prior shutdown or curtailment to have occurred after the last day of the base year if the projected emissions inventory used to develop the attainment demonstration explicitly includes the emissions from such previously shutdown or curtailed emissions units. However, in no event may credit be given for shutdowns that occurred before August 7, 1977.

Emissions reductions achieved by shutting down an existing emissions unit or curtailing production or operating hours and that do not meet the requirements above may be generally credited only if the shutdown or curtailment occurred on or after the date the construction permit application is filed; or the applicant can establish that the proposed new emissions unit is a replacement for the shutdown or curtailed emissions unit, and the emissions reductions achieved by the shutdown or curtailment met the requirements of this subparagraph;

(4) No emissions credit may be allowed for replacing one hydrocarbon compound with another of lesser reactivity, except for those compounds listed in Table 1 of the EPA's "Recommended Policy on Control of Volatile Organic Compounds" (42 FR 35314, July 8, 1977);

(5) All emission reductions claimed as offset credit shall be federally enforceable;

(6) Procedures relating to the permissible location of offsetting emissions shall be followed that are at least as stringent as those set out in 40 CFR Part 51, Appendix S, Section IV.D, as amended on October 25, 2012;

(7) Credit for an emissions reduction can be claimed to the extent that the department has not relied on it in issuing any permit under regulations approved pursuant to 40 CFR Part 51, Subpart I, or the state has not relied on it in demonstration attainment or reasonable further progress;

(8) and (9) Reserved.

(10) The total tonnage of increased emissions, in tons per year, resulting from a major modification that must be offset in accordance with Section 173 of the Act shall be determined by summing the difference between the allowable emissions after the modification and the actual emissions before the modification for each emissions unit.

31.3(4) *Fugitive emissions.* The department may provide that the provisions of this subrule do not apply to a source or modification that would be a major stationary source or major modification only if fugitive emissions, to the extent quantifiable, are considered in calculating the potential to emit of the stationary source or modification and the source does not belong to any of the following categories: coal cleaning plants (with thermal dryers); kraft pulp mills; Portland cement plants; primary zinc smelters; iron and steel mills; primary aluminum ore reduction plants; primary copper smelters; municipal incinerators capable of charging more than 250 tons of refuse per day; hydrofluoric, sulfuric, or nitric acid plants; petroleum refineries; lime plants; phosphate rock processing plants; coke oven batteries; sulfur recovery plants; carbon black plants (furnace process); primary lead smelters; fuel conversion plants; sintering plants; secondary metal production plants; chemical process plants (the term chemical processing plant shall not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140); fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input; petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels; taconite ore processing plants; glass fiber processing plants; charcoal production plants; fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input; and any other stationary source category that, as of August 7, 1980, is being regulated under Section 111 or 112 of the Act.

31.3(5) *Enforceable procedures.*

a. Approval to construct shall not relieve any owner or operator of the responsibility to comply fully with applicable provision of the plan and any other requirements under local, state, or federal law.

b. At such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforcement limitation that was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of this rule shall apply to the source or modification as though construction had not yet commenced on the source or modification.

31.3(6) Reasonable possibility. Except as otherwise provided in 31.3(6)“f,” the following specific provisions apply with respect to any regulated NSR pollutant emitted from projects at existing emissions units at a major stationary source (other than projects at a source with a PAL) in circumstances where there is a reasonable possibility, within the meaning of 31.3(6)“f,” that a project that is not a part of a major modification may result in a significant emissions increase of such pollutant, and the owner or operator elects to use the method specified in paragraphs “1” through “3” of the definition of “projected actual emissions” for calculating projected actual emissions. Deviations from these provisions will be approved only if the state specifically demonstrates that the submitted provisions are more stringent than or at least as stringent in all respects as the corresponding provisions in 31.3(6)“a” through “f.”

a. Before beginning actual construction of the project, the owner or operator shall document and maintain a record of the following information:

- (1) A description of the project;
- (2) Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the project; and
- (3) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under paragraph “3” of the definition of “projected actual emissions” and an explanation for why such amount was excluded, and any netting calculations, if applicable.

b. If the emissions unit is an existing electric utility steam generating unit, before beginning actual construction, the owner or operator shall provide a copy of the information set out in 31.3(6)“a” to the department. Nothing in 31.3(6)“b” shall be construed to require the owner or operator of such a unit to obtain any determination from the reviewing authority before beginning actual construction.

c. The owner or operator shall monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any emissions units identified in 31.3(6)“a”(2); and calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five years following resumption of regular operations after the change, or for a period of ten years following resumption of regular operations after the change if the project increases the design capacity or potential to emit of that regulated NSR pollutant at such emissions unit.

d. If the unit is an existing electric utility steam generating unit, the owner or operator shall submit a report to the department within 60 days after the end of each year during which records must be generated under 31.3(6)“c” setting out the unit’s annual emissions during the year that preceded submission of the report.

e. If the unit is an existing unit other than an electric utility steam generating unit, the owner or operator shall submit a report to the department if the annual emissions, in tons per year, from the project identified in 31.3(6)“a,” exceed the baseline actual emissions (as documented and maintained under 31.3(6)“a”(3)), by a significant amount for that regulated NSR pollutant, and if such emissions differ from the preconstruction projection as documented and maintained under 31.3(6)“a”(3). Such report shall be submitted to the department within 60 days after the end of such year. The report shall contain the following:

- (1) The name, address, and telephone number of the major stationary source;
- (2) The annual emissions as calculated pursuant to 31.3(6)“c”; and
- (3) Any other information that the owner or operator wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection).

f. A reasonable possibility under this subrule occurs when the owner or operator calculates the project to result in either:

(1) A projected actual emissions increase of at least 50 percent of the amount that is a significant emissions increase (without reference to the amount that is a significant net emissions increase) for the regulated NSR pollutant; or

(2) A projected actual emissions increase that, added to the amount of emissions excluded under paragraph “3” of the definition of “projected actual emissions,” sums to at least 50 percent of the amount that is a significant emissions increase (without reference to the amount that is a significant net emissions increase) for the regulated NSR pollutant. For a project for which a reasonable possibility occurs only within the meaning of this subparagraph, and not also within the meaning of 31.3(6) “f”(1), then 31.3(6) “b” through “e” do not apply to the project.

31.3(7) *Availability of records.* The owner or operator of the source shall make the information required to be documented and maintained pursuant to this subrule available for review upon a request for inspection by the department or the general public pursuant to the requirements contained in 40 CFR §70.4(b)(3)(viii) as amended through October 6, 2009.

31.3(8) *Applicability to nitrogen oxides emissions.* The requirements of this subrule applicable to major stationary sources and major modifications of volatile organic compounds shall apply to nitrogen oxides emissions from major stationary sources and major modifications of nitrogen oxides in an ozone transport region or in any ozone nonattainment area, except in ozone nonattainment areas or in portions of an ozone transport region where the Administrator has granted a NOX waiver applying the standards set forth under Section 182(f) of the Act and the waiver continues to apply.

31.3(9) *Offset ratios.*

a. In meeting the emissions offset requirements of 31.3(3), the ratio of total actual emissions reductions to the emissions increase shall be at least 1:1 unless an alternative ratio is provided for the applicable nonattainment area in 31.3(9) “b” through “d.”

b. The plan shall require that in meeting the emissions offset requirements of 31.3(3) for ozone nonattainment areas that are subject to Subpart 2, Part D, Title I of the Act, the ratio of total actual emissions reductions of VOC to the emissions increase of VOC shall be as follows:

- (1) In any marginal nonattainment area for ozone—at least 1.1:1;
- (2) In any moderate nonattainment area for ozone—at least 1.15:1;
- (3) In any serious nonattainment area for ozone—at least 1.2:1;
- (4) In any severe nonattainment area for ozone—at least 1.3:1 (except that the ratio may be at least 1.2:1 if the approved plan also requires all existing major sources in such nonattainment area to use BACT for the control of VOC); and
- (5) In any extreme nonattainment area for ozone—at least 1.5:1 (except that the ratio may be at least 1.2:1 if the approved plan also requires all existing major sources in such nonattainment area to use BACT for the control of VOC).

c. Notwithstanding the requirements of 31.3(9) for meeting the requirements of 31.3(3), the ratio of total actual emissions reductions of VOC to the emissions increase of VOC shall be at least 1.15:1 for all areas within an ozone transport region that is subject to Subpart 2, Part D, Title I of the Act, except for serious, severe, and extreme ozone nonattainment areas that are subject to Subpart 2, Part D, Title I of the Act.

d. In meeting the emissions offset requirements of 31.3(3) for ozone nonattainment areas that are subject to Subpart 1, Part D, Title I of the Act (but are not subject to Subpart 2, Part D, Title I of the Act, including eight-hour ozone nonattainment areas subject to 40 CFR §51.902(b)), the ratio of total actual emissions reductions of VOC to the emissions increase of VOC shall be at least 1:1.

31.3(10) *Applicability to PM₁₀ precursors.* The requirements of this rule applicable to major stationary sources and major modifications of PM₁₀ shall also apply to major stationary sources and major modifications of PM₁₀ precursors.

31.3(11) *Specifications for emissions offsets.* In meeting the emissions offset requirements of 31.3(3), the emissions offsets obtained shall be for the same regulated NSR pollutant unless interprecursor offsetting is permitted for a particular pollutant as specified in this subrule. The offset requirements in 31.3(3) for direct PM_{2.5} emissions or emissions of precursors of PM_{2.5} may be satisfied by offsetting reductions in direct PM_{2.5} emissions or emissions of any PM_{2.5} precursor if such offsets comply with the

interprecursor trading hierarchy and ratio established in the approved plan for a particular nonattainment area.

[ARC 7960C, IAB 5/15/24, effective 6/19/24]

567—31.4(455B) Preconstruction review permit program.

31.4(1) Sources shall comply with the requirements of Section 110(a)(2)(D)(i) of the Act for any new major stationary source or major modification as defined in 31.3(1). The definitions in 31.3(1) for “major stationary source” and “major modification” planning to locate in any area designated as attainment or unclassifiable for any national ambient air quality standard pursuant to Section 107 of the Act, apply when that source or modification would cause or contribute to a violation of any national ambient air quality standard.

31.4(2) A major source or major modification will be considered to cause or contribute to a violation of a national ambient air quality standard when such source or modification would, at a minimum, exceed the following significance levels at any locality that does not or would not meet the applicable national standard:

Pollutant	Annual	Averaging time (hours)			
		24	8	3	1
SO ₂	1.0 µg/m ³	5 µg/m ³		25 µg/m ³	
PM ₁₀	1.0 µg/m ³	5 µg/m ³			
PM _{2.5}	0.3 µg/m ³	1.2 µg/m ³			
NO ₂	1.0 µg/m ³				
CO			0.5 mg/m ³		2 mg/m ³

31.4(3) A proposed major source or major modification subject to this rule may reduce the impact of its emissions upon air quality by obtaining sufficient emission reductions to, at a minimum, compensate for its adverse ambient impact where the major source or major modification would otherwise cause or contribute to a violation of any national ambient air quality standard. In the absence of such emission reductions, the proposed construction permit application shall be denied.

31.4(4) The requirements of this rule shall not apply to a major stationary source or major modification with respect to a particular pollutant if the owner or operator demonstrates that, as to that pollutant, the source or modification is located in an area designated as nonattainment pursuant to Section 107 of the Act.

[ARC 7960C, IAB 5/15/24, effective 6/19/24]

567—31.5 to 31.8 Reserved.

567—31.9(455B) Actuals PALs. Except as provided in 31.9(1), the provisions for actuals PALs as specified in 40 CFR §51.165(f) as amended through March 30, 2011, are adopted by reference.

31.9(1) The following portions of actuals PALs in 40 CFR §51.165(f) are modified to read as follows:

a. 40 CFR §51.165(f)(2): Definitions. The definitions in paragraphs (f)(2)(i) through (xi) of this section shall be applicable to actuals PALs for purposes of paragraphs (f)(1) through (15) of this section. Any terms not defined in paragraphs (f)(2)(i) through (xi) shall have the meaning prescribed by 567—31.3(455B) or the meaning prescribed by the Act.

b. 40 CFR §51.165(f)(8)(ii)(B): The reviewing authority shall have discretion to reopen the PAL permit for the following:

c. 40 CFR §51.165(f)(10)(ii): Application deadline. A major stationary source owner or operator shall submit a timely application to the reviewing authority to request renewal of a PAL. In order to be considered timely, the application shall be submitted at least 6 months prior to, but not earlier than 18 months prior to, the date of permit expiration. This deadline for application submittal is to ensure that the permit will not expire before the permit is renewed. If the owner or operator of a major stationary source submits a complete application to renew the PAL within this time period, then the PAL shall continue to be effective until the revised permit with the renewed PAL is issued.

d. 40 CFR §51.165(f)(15)(i): Each PAL shall comply with the requirements contained in paragraphs (f)(1) through (15) of this section.

e. 40 CFR §51.165(f)(15)(ii): Any PAL issued prior to January 15, 2014, may be superseded with a PAL that complies with the requirements of paragraphs (f)(1) through (15) of this section.

31.9(2) Reserved.

[ARC 7960C, IAB 5/15/24, effective 6/19/24]

567—31.10(455B) Validity of rules. If any provision of 567—31.3(455B) through 567—31.9(455B), or the application of such provision to any person or circumstance, is held invalid, the remainder of these rules, or the application of such provision to persons or circumstances other than those as to which it is held invalid, shall not be affected thereby.

[ARC 7960C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code section 455B.133.

[Filed 12/30/94, Notice 10/12/94—published 1/18/95, effective 2/22/95]

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[Filed Emergency After Notice ARC 2352C (Notice ARC 2222C, IAB 10/28/15), IAB 1/6/16,
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CHAPTER 32
ANIMAL FEEDING OPERATIONS FIELD STUDY
Rescinded **ARC 7961C**, IAB 5/15/24, effective 6/19/24

CHAPTER 33
CONSTRUCTION PERMIT REQUIREMENTS FOR MAJOR STATIONARY SOURCES—
PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/19/29

567—33.1(455B) Purpose. This chapter implements the major new source review (NSR) program contained in Part C of Title I of the federal Clean Air Act as amended on November 15, 1990, and as promulgated under 40 CFR 51.166 and 52.21. This is a preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under Part C of the Clean Air Act as amended on November 15, 1990. In areas that do not meet the national ambient air quality standards (NAAQS), the nonattainment new source review (NNSR) program applies. The rules for the NNSR program are set forth in 567—Chapter 31. In areas that meet the NAAQS, the prevention of significant deterioration (PSD) program applies. Collectively, the NNSR and PSD programs are referred to as the major NSR program. An owner or operator required to apply for a construction permit under 567—Chapter 33 shall submit fees as specified in 567—Chapter 30.

Rule 567—33.2(455B) is reserved.

Rule 567—33.3(455B) sets forth the definitions, standards and permitting requirements that are specific to the PSD program.

Rules 567—33.4(455B) through 567—33.8(455B) are reserved.

Rule 567—33.9(455B) includes the conditions under which a source subject to PSD may obtain a plantwide applicability limitation (PAL) on emissions. An owner or operator requesting a PAL under 567—33.9(455B) shall submit fees as required in 567—Chapter 30.

In addition to the requirements in this chapter, stationary sources may also be subject to the permitting requirements in 567—Chapter 22 and the rules for Title V operating permits in 567—Chapter 24.

[ARC 7962C, IAB 5/15/24, effective 6/19/24]

567—33.2 Reserved.

567—33.3(455B) PSD construction permit requirements for major stationary sources.

33.3(1) Definitions. Definitions included in this subrule apply to the provisions set forth in this rule (PSD program requirements). For purposes of this rule and unless otherwise noted, the definitions herein apply. Definitions that are adopted by reference from 40 CFR 51.166 or 52.21 are as amended through July 19, 2021, unless otherwise noted. The following phrases contained in 40 CFR 51.166 are not adopted by reference: “it shall also provide that,” “mechanism whereby,” “the plan may provide that,” “the plan provides that,” “the plan shall provide,” and “the plan shall provide that.” Additionally, the term “the plan” shall mean “State Implementation Plan” or “SIP.”

For purposes of this rule, the following terms have the meanings indicated in this subrule:

“*Act*” means the Clean Air Act, 42 U.S.C. Sections 7401, et seq., as amended through November 15, 1990.

“*Actual emissions*” means:

1. The actual rate of emissions of a regulated NSR pollutant from an emissions unit, as determined in accordance with paragraphs “2” through “4,” except that this definition shall not apply for calculating whether a significant emissions increase has occurred, or for establishing a PAL under 567—33.9(455B). Instead, the requirements specified under the definitions for “projected actual emissions” and “baseline actual emissions” shall apply for those purposes.

2. In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period that precedes the particular date and that is representative of normal source operation. The department shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit’s actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

3. The department may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.

4. For any emissions unit that has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

“Administrator” means the administrator for the United States Environmental Protection Agency (EPA) or designee.

“Allowable emissions” means the emissions rate of a stationary source calculated using the maximum rated capacity of the source (unless the source is subject to federally enforceable limits or enforceable permit conditions that restrict the operating rate, or hours of operation, or both) and the most stringent of the following:

1. The applicable standards as set forth in 567—subrules 23.1(2) through 23.1(5) (new source performance standards, emissions standards for hazardous air pollutants, and federal emissions guidelines) or an applicable federal standard not adopted by the state, as set forth in 40 CFR Parts 60, 61 and 63;

2. The applicable SIP emissions limitation, including those with a future compliance date; or

3. The emissions rate specified as an enforceable permit condition, including those with a future compliance date.

“Baseline actual emissions,” for the purposes of this chapter, means the rate of emissions, in tons per year, of a regulated NSR pollutant, as “regulated NSR pollutant” is defined in this subrule, and as determined in accordance with paragraphs “1” through “4.”

1. For any existing electric utility steam generating unit, “baseline actual emissions” means the average rate, in tons per year, at which the unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the five-year period immediately preceding the date on which the owner or operator begins actual construction of the project. The department shall allow the use of a different time period upon a determination that it is more representative of normal source operation.

(a) The average rate shall include fugitive emissions to the extent quantifiable and emissions associated with startups, shutdowns, and malfunctions.

(b) The average rate shall be adjusted downward to exclude any noncompliant emissions that occurred while the source was operating above an emissions limitation that was legally enforceable during the consecutive 24-month period.

(c) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period must be used to determine the baseline actual emissions for the emissions units being changed. A different consecutive 24-month period may be used for each regulated NSR pollutant.

(d) The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by paragraph “1”(b).

2. For an existing emissions unit, other than an electric utility steam generating unit, “baseline actual emissions” means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the ten-year period immediately preceding either the date on which the owner or operator begins actual construction of the project, or the date on which a complete permit application is received by the department for a permit required either under this chapter or under a SIP approved by the Administrator, whichever is earlier, except that the ten-year period shall not include any period earlier than November 15, 1990.

(a) The average rate shall include fugitive emissions to the extent quantifiable and emissions associated with startups, shutdowns, and malfunctions.

(b) The average rate shall be adjusted downward to exclude any noncompliant emissions that occurred while the source was operating above an emissions limitation that was legally enforceable during the consecutive 24-month period.

(c) The average rate shall be adjusted downward to exclude any emissions that would have exceeded an emissions limitation with which the major stationary source must currently comply, had such major stationary source been required to comply with such limitations during the consecutive 24-month period.

However, if an emissions limitation is part of a maximum achievable control technology standard that the Administrator proposed or promulgated under 40 CFR Part 63, the baseline actual emissions need only be adjusted if the state has taken credit for such emissions reductions in an attainment demonstration or maintenance plan consistent with the requirements of 40 CFR 51.165(a)(3)(ii)(G) as amended through November 29, 2005.

(d) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period must be used to determine the baseline actual emissions for the emissions units being changed. A different consecutive 24-month period may be used for each regulated NSR pollutant.

(e) The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by paragraphs “2”(b) and “2”(c).

3. For a new emissions unit, the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero; and thereafter, for all other purposes, shall equal the unit’s potential to emit.

4. For a PAL for a stationary source, the baseline actual emissions shall be calculated for existing electric utility steam generating units in accordance with the procedures contained in paragraph “1,” for other existing emissions units in accordance with the procedures contained in paragraph “2,” and for a new emissions unit in accordance with the procedures contained in paragraph “3.”

“Baseline area” means:

1. Any intrastate area (and every part thereof) designated as attainment or unclassifiable under Section 107(d)(1)(A)(ii) or (iii) of the Act in which the major source or major modification establishing the minor source baseline date would construct or would have an air quality impact for the pollutant for which the baseline date is established, as follows: equal to or greater than 1 µg/m³ (annual average) for sulfur dioxide (SO₂), nitrogen dioxide (NO₂) or PM₁₀; or equal to or greater than 0.3 µg/m³ (annual average) for PM_{2.5}.

2. Area redesignations under Section 107(d)(1)(A)(ii) or (iii) of the Act cannot intersect or be smaller than the area of impact of any major stationary source or major modification that establishes a minor source baseline date or is subject to regulations specified in this rule, in 40 CFR 52.21 (PSD requirements), or in department rules approved by EPA and published in 40 CFR Part 51, Subpart I, as amended through October 20, 2010, and would be constructed in the same state as the state proposing the redesignation.

3. Any baseline area established originally for the total suspended particulate increments shall remain in effect and shall apply for purposes of determining the amount of available PM₁₀ increments, except that such baseline area shall not remain in effect if the permitting authority rescinds the corresponding minor source baseline date in accordance with the definition of “baseline date” specified in this subrule.

“Baseline concentration” means:

1. The ambient concentration level that exists in the baseline area at the time of the applicable minor source baseline date. A baseline concentration is determined for each pollutant for which a minor source baseline date is established and shall include:

(a) The actual emissions representative of sources in existence on the applicable minor source baseline date, except as provided in paragraph “2”;

(b) The allowable emissions of major stationary sources that commenced construction before the major source baseline date but were not in operation by the applicable minor source baseline date.

2. The following will not be included in the baseline concentration and will affect the applicable maximum allowable increase(s):

(a) Actual emissions from any major stationary source on which construction commenced after the major source baseline date; and

(b) Actual emissions increases and decreases at any stationary source occurring after the minor source baseline date.

“Baseline date” means:

1. Either “major source baseline date” or “minor source baseline date” as follows:

(a) The “major source baseline date” means, in the case of PM₁₀ and sulfur dioxide, January 6, 1975; in the case of nitrogen dioxide, February 8, 1988; and in the case of PM_{2.5}, October 20, 2010.

(b) The “minor source baseline date” means the earliest date after the trigger date on which a major stationary source or a major modification subject to 40 CFR 52.21 as amended through October 20, 2010, or subject to this rule (PSD program requirements), or subject to a department rule approved by EPA and published in 40 CFR Part 51, Subpart I, as amended through October 20, 2010, submits a complete application under the relevant regulations. The trigger date for PM₁₀ and sulfur dioxide is August 7, 1977. For nitrogen dioxide, the trigger date is February 8, 1988. For PM_{2.5}, the trigger date is October 20, 2011.

2. The “baseline date” is established for each pollutant for which increments or other equivalent measures have been established if:

(a) The area in which the proposed source or modification would construct is designated as attainment or unclassifiable under Section 107(d)(1)(A)(ii) or (iii) of the Act for the pollutant on the date of its complete application under 40 CFR 52.21 as amended through October 20, 2010, or under regulations specified in this rule (PSD program requirements); and

(b) In the case of a major stationary source, the pollutant would be emitted in significant amounts, or in the case of a major modification, there would be a significant net emissions increase of the pollutant.

Any minor source baseline date established originally for the total suspended particulate increments shall remain in effect and shall apply for purposes of determining the amount of available PM₁₀ increments, except that the reviewing authority may rescind any such minor source baseline date where it can be shown, to the satisfaction of the reviewing authority, that the emissions increase from the major stationary source, or the net emissions increase from the major modification, responsible for triggering that date did not result in a significant amount of PM₁₀ emissions.

“*Begin actual construction*” means, in general, initiation of physical on-site construction activities on an emissions unit that are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures. With respect to a change in method of operation, this term refers to those on-site activities, other than preparatory activities, that mark the initiation of the change.

“*Best available control technology*” or “*BACT*” means an emissions limitation, including a visible emissions standard, based on the maximum degree of reduction for each regulated NSR pollutant that would be emitted from any proposed major stationary source or major modification that the reviewing authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combination techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant that would exceed the emissions allowed by any applicable standard under 567—subrules 23.1(2) through 23.1(5) (standards for new stationary sources, federal standards for hazardous air pollutants, and federal emissions guidelines), or federal regulations as set forth in 40 CFR Parts 60, 61 and 63 but not adopted by the state. If the department determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard or combination thereof may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means that achieve equivalent results.

“*Building, structure, facility, or installation*” means all of the pollutant-emitting activities that belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same major group (i.e., that have the same two-digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement (U.S. Government Printing Office stock numbers 4101-0066 and 003-005-00176-0, respectively).

“*CFR*” means the Code of Federal Regulations, with standard references in this chapter by title and part, so that “40 CFR 51” or “40 CFR Part 51” means “Title 40 Code of Federal Regulations, Part 51.”

“*Clean coal technology*” means the definition of “clean coal technology” set forth in 40 CFR 52.21(b)(34) and is adopted by reference.

“*Clean coal technology demonstration project*” means the definition of “clean coal technology demonstration project” set forth in 40 CFR 52.21(b)(35) and is adopted by reference.

“*Commence*,” as applied to construction of a major stationary source or major modification, means that the owner or operator has all necessary preconstruction approvals or permits and either has:

1. Begun, or caused to begin, a continuous program of actual on-site construction of the source, to be completed within a reasonable time; or

2. Entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable time.

“*Complete*” means, in reference to an application for a permit, that the application contains all the information necessary for processing the application. Designating an application complete for purposes of permit processing does not preclude the department from requesting or accepting any additional information.

“*Construction*” means any physical change or change in the method of operation, including fabrication, erection, installation, demolition, or modification of an emissions unit, that would result in a change in emissions.

“*Continuous emissions monitoring system*” or “*CEMS*” means the definition of “continuous emissions monitoring system” set forth in 40 CFR 52.21(b)(44) and is adopted by reference.

“*Continuous emissions rate monitoring system*” or “*CERMS*” means the definition of “continuous emissions rate monitoring system” set forth in 40 CFR 52.21(b)(47) and is adopted by reference.

“*Continuous parameter monitoring system*” or “*CPMS*” means the definition of “continuous parameter monitoring system” set forth in 40 CFR 52.21(b)(46) and is adopted by reference.

“*Electric utility steam generating unit*” means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

“*Emissions unit*” means any part of a stationary source that emits or would have the potential to emit any regulated NSR pollutant and includes an electric utility steam generating unit. For purposes of this chapter, there are two types of emissions units:

1. A new emissions unit is any emissions unit that is (or will be) newly constructed and that has existed for less than two years from the date such emissions unit first operated.

2. An existing emissions unit is any emissions unit that does not meet the requirements in paragraph “1.” A replacement unit is an existing emissions unit.

“*Enforceable permit condition*,” for the purpose of this chapter, means any of the following limitations and conditions: requirements developed pursuant to new source performance standards, prevention of significant deterioration standards, emissions standards for hazardous air pollutants, requirements within the SIP, and any permit requirements established pursuant to this chapter, any permit requirements established pursuant to 40 CFR 52.21 or Part 51, Subpart I, as amended through October 20, 2010, or under construction or Title V operating permit rules.

“*Federal land manager*” means, with respect to any lands in the United States, the secretary of the department with authority over such lands.

“*Federally enforceable*” means all limitations and conditions that are enforceable by the Administrator and the department, including those federal requirements not adopted by the state, developed pursuant to 40 CFR Parts 60, 61 and 63; requirements within 567—subrules 23.1(2) through 23.1(5); requirements within the SIP; any permit requirements established pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR Part 51, Subpart I, as amended through October 20, 2010, including operating permits

issued under an EPA-approved program, that are incorporated into the SIP and expressly require adherence to any permit issued under such program.

“Fugitive emissions” means those emissions that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

“High terrain” means any area having an elevation 900 feet or more above the base of the stack of a source.

“Indian governing body” means the governing body of any tribe, band, or group of Indians subject to the jurisdiction of the United States and recognized by the United States as possessing power of self-government.

“Indian reservation” means any federally recognized reservation established by treaty, agreement, executive order, or Act of Congress.

“Innovative control technology” means the definition of “innovative control technology” set forth in 40 CFR 52.21(b)(19) and is adopted by reference.

“Lowest achievable emissions rate” or *“LAER”* means the definition of “lowest achievable emissions rate” or “LAER” set forth in 40 CFR 52.21(b)(53) and is adopted by reference.

“Low terrain” means any area other than high terrain.

“Major modification” means any physical change in or change in the method of operation of a major stationary source that would result in a significant emissions increase of a regulated NSR pollutant and a significant net emissions increase of that pollutant from the major stationary source.

1. Any significant emissions increase from any emissions units or net emissions increase at a major stationary source that is significant for volatile organic compounds or NO_x shall be considered significant for ozone.

2. A physical change or change in the method of operation shall not include:

(a) Routine maintenance, repair and replacement;

(b) Use of an alternative fuel or raw material by reason of any order under Section 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 or by reason of a natural gas curtailment plan pursuant to the Federal Power Act;

(c) Use of an alternative fuel by reason of an order or rule under Section 125 of the Act;

(d) Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste;

(e) Use of an alternative fuel or raw material by a stationary source that the source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition, or that the source is approved to use under any federally enforceable permit condition;

(f) An increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition that was established after January 6, 1975;

(g) Any change in ownership at a stationary source;

(h) Reserved.

(i) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project, provided that the project complies with the requirements within the SIP; and other requirements necessary to attain and maintain the national ambient air quality standards during the project and after the project is terminated;

(j) The installation or operation of a permanent clean coal technology demonstration project that constitutes repowering, provided that the project does not result in an increase in the potential to emit of any regulated pollutant emitted by the unit. This exemption shall apply on a pollutant-by-pollutant basis;

(k) The reactivation of a very clean coal-fired electric utility steam generating unit.

3. This definition shall not apply with respect to a particular regulated NSR pollutant when the major stationary source is complying with the requirements under 567—33.9(455B) for a PAL for that pollutant. Instead, the definition under 567—33.9(455B) shall apply.

“Major source baseline date” is defined under the definition of “baseline date.”

“Major stationary source” means:

1. (a) Any one of the following stationary sources of air pollutants that emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant:

- Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input;

- Coal cleaning plants (with thermal dryers);
- Kraft pulp mills;
- Portland cement plants;
- Primary zinc smelters;
- Iron and steel mill plants;
- Primary aluminum ore reduction plants;
- Primary copper smelters;
- Municipal incinerators capable of charging more than 50 tons of refuse per day;
- Hydrofluoric, sulfuric, and nitric acid plants;
- Petroleum refineries;
- Lime plants;
- Phosphate rock processing plants;
- Coke oven batteries;
- Sulfur recovery plants;
- Carbon black plants (furnace process);
- Primary lead smelters;
- Fuel conversion plants;
- Sintering plants;
- Secondary metal production plants;
- Chemical process plants (which does not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS code 325193 or 312140);

- Fossil-fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input;

- Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- Taconite ore processing plants;
- Glass fiber processing plants; and
- Charcoal production plants.

(b) Notwithstanding the stationary source size specified in paragraph “1”(a), any stationary source that emits, or has the potential to emit, 250 tons per year or more of a regulated NSR pollutant; or

(c) Any physical change that would occur at a stationary source not otherwise qualifying under this definition as a major stationary source if the change would constitute a major stationary source by itself.

2. A major source that is major for volatile organic compounds or NO_x shall be considered major for ozone.

3. The fugitive emissions of a stationary source shall not be included in determining for any of the purposes of this rule whether it is a major stationary source, unless the source belongs to one of the categories of stationary sources listed in paragraph “1”(a) or to any other stationary source category that, as of August 7, 1980, is being regulated under Section 111 or 112 of the Act.

“*Minor source baseline date*” is defined under the definition of “baseline date.”

“*Necessary preconstruction approvals or permits*” means those permits or approvals required under federal air quality control laws and regulations and those air quality control laws and regulations that are part of the SIP.

“*Net emissions increase*” means, with respect to any regulated NSR pollutant emitted by a major stationary source, the amount by which the following exceeds zero:

- The increase in emissions from a particular physical change or change in the method of operation at a stationary source as calculated according to the applicability requirements under 33.3(2); and

- Any other increases and decreases in actual emissions at the major stationary source that are contemporaneous with the particular change and are otherwise creditable. Baseline actual emissions for calculating increases and decreases under this definition of “net emissions increase” shall be determined as

provided for under the definition of “baseline actual emissions,” except that paragraphs “1”(c) and “2”(d) of the definition of “baseline actual emissions,” which describe provisions for multiple emissions units, shall not apply.

1. An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if the increase or decrease in actual emissions occurs between the date five years before construction on the particular change commences and the date that the increase from the particular change occurs.

2. An increase or decrease in actual emissions is creditable only if:

(a) The increase or decrease in actual emissions occurs within the contemporaneous time period, as noted in paragraph “1” of this definition; and

(b) The department has not relied on the increase or decrease in actual emissions in issuing a permit for the source under this rule, which permit is in effect when the increase in actual emissions from the particular change occurs.

3. An increase or decrease in actual emissions of sulfur dioxide, particulate matter, or nitrogen oxides that occurs before the applicable minor source baseline date is creditable only if the increase or decrease in actual emissions is required to be considered in calculating the amount of maximum allowable increases remaining available.

4. An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.

5. A decrease in actual emissions is creditable only to the extent that:

(a) The old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions;

(b) The decrease in actual emissions is enforceable as a practical matter at and after the time that actual construction on the particular change begins; and

(c) The decrease in actual emissions has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change.

6. An increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.

7. The definition of “actual emissions,” paragraph “2,” shall not apply for determining creditable increases and decreases.

“*Nonattainment area*” means an area so designated by the Administrator, acting pursuant to Section 107 of the Act.

“*Permitting authority*” means the Iowa department of natural resources or the director thereof.

“*Pollution prevention*” means any activity that, through process changes, product reformulation or redesign, or substitution of less polluting raw materials, eliminates or reduces the release of air pollutants (including fugitive emissions) and other pollutants to the environment prior to recycling, treatment, or disposal. “Pollution prevention” does not mean recycling (other than certain “in-process recycling” practices), energy recovery, treatment, or disposal.

“*Potential to emit*” means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

“*Predictive emissions monitoring system*” or “*PEMS*” means the definition of “predictive emissions monitoring system” set forth in 40 CFR 52.21(b)(45) and is adopted by reference.

“*Prevention of significant deterioration (PSD) program*” means a major source preconstruction permit program that has been approved by the Administrator and incorporated into the SIP or means the program in 40 CFR 52.21. Any permit issued under such a program is a major NSR permit.

“*Project*” means a physical change in, or change in method of operation of, an existing major stationary source.

“*Projected actual emissions*,” for the purposes of this chapter, means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the five years (12-month period) beginning on the first day of the month following the date when the unit resumes regular operation after the project, or in any one of the ten years following that date, if the project involves increasing the emissions unit’s design capacity or its potential to emit that regulated NSR pollutant, and full utilization of the unit would result in a significant emissions increase, or a significant net emissions increase at the major stationary source. For purposes of this definition, “regular” shall be determined by the department on a case-by-case basis.

In determining the projected actual emissions before beginning actual construction, the owner or operator of the major stationary source:

1. Shall consider all relevant information including, but not limited to, historical operational data, the company’s own representations, the company’s expected business activity and the company’s highest projections of business activity, the company’s filings with the state or federal regulatory authorities, and compliance plans under the approved plan; and
2. Shall include fugitive emissions to the extent quantifiable and emissions associated with startups, shutdowns, and malfunctions; and
3. Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit’s emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project, including any increased utilization due to product demand growth; or
4. In lieu of using the method set out in paragraphs “1” through “3,” may elect to use the emissions unit’s potential to emit, in tons per year.

“*Reactivation of a very clean coal-fired electric utility steam generating unit*” means the definition of “reactivation of a very clean coal-fired electric utility steam generating unit” set forth in 40 CFR 52.21(b) (38) and is adopted by reference.

“*Regulated NSR pollutant*” means the following:

1. Any pollutant for which a national ambient air quality standard has been promulgated and any constituents or precursors for such pollutants identified by the Administrator:
 - (a) Volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas;
 - (b) Sulfur dioxide is a precursor to PM_{2.5} in all attainment and unclassifiable areas;
 - (c) Nitrogen oxides are presumed to be precursors to PM_{2.5} in all attainment and unclassifiable areas, unless the department demonstrates to EPA’s satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to the area’s ambient PM_{2.5} concentrations;
 - (d) Volatile organic compounds are presumed not to be precursors to PM_{2.5} in any attainment and unclassifiable areas, unless the department demonstrates to EPA’s satisfaction or EPA demonstrates that emissions of volatile organic compounds from sources in a specific area are a significant contributor to that area’s ambient PM_{2.5} concentrations;
2. Any pollutant that is subject to any standard promulgated under Section 111 of the Act;
3. Any Class I or Class II substance subject to a standard promulgated under or established by Title VI of the Act; or
4. Any pollutant that otherwise is subject to regulation under the Act as defined in 33.3(1), definition of “subject to regulation.”
5. Notwithstanding paragraphs “1” through “4,” the definition of “regulated NSR pollutant” shall not include any or all hazardous air pollutants that are either listed in Section 112 of the Act or added to the list pursuant to Section 112(b)(2) of the Act and that have not been delisted pursuant to Section 112(b)(3) of the Act, unless the listed hazardous air pollutant is also regulated as a constituent or precursor of a general pollutant listed under Section 108 of the Act.

6. Particulate matter (PM) emissions, PM_{2.5} emissions and PM₁₀ emissions shall include gaseous emissions from a source or activity that condense to form particulate matter at ambient temperatures.

“Replacement unit” means an emissions unit for which all the criteria listed in paragraphs “1” through “4” are met. No creditable emissions reductions shall be generated from shutting down the existing emissions unit that is replaced.

1. The emissions unit is a reconstructed unit within the meaning of 40 CFR 60.15(b)(1) as amended through December 16, 1975, or the emissions unit completely takes the place of an existing emissions unit.

2. The emissions unit is identical to or functionally equivalent to the replaced emissions unit.

3. The replacement does not change the basic design parameter(s) of the process unit.

4. The replaced emissions unit is permanently removed from the major stationary source, otherwise permanently disabled, or permanently barred from operation by a permit that is enforceable as a practical matter. If the replaced emissions unit is brought back into operation, it shall constitute a new emissions unit.

“Repowering” means the definition of “repowering” set forth in 40 CFR 52.21(b)(37) and is adopted by reference.

“Reviewing authority” means the department, or the Administrator in the case of EPA-implemented permit programs under 40 CFR 52.21.

“Secondary emissions” means emissions that occur as a result of the construction or operation of a major stationary source or major modification but do not come from the major stationary source or major modification itself. For the purposes of this chapter, “secondary emissions” must be specific, well-defined, and quantifiable, and must impact the same general areas as the stationary source modification that causes the secondary emissions. “Secondary emissions” includes emissions from any offsite support facility that would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. “Secondary emissions” does not include any emissions that come directly from a mobile source, such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel.

“Significant” means:

1. In reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

Pollutant and Emissions Rate

- Carbon monoxide: 100 tons per year (tpy)
- Nitrogen oxides: 40 tpy
- Sulfur dioxide: 40 tpy
- Particulate matter: 25 tpy of particulate matter emissions
- PM₁₀: 15 tpy
- PM_{2.5}: 10 tpy of direct PM_{2.5} emissions; 40 tpy of sulfur dioxide emissions; 40 tpy of nitrogen oxide emissions (unless the department demonstrates to EPA’s satisfaction that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to the area’s ambient PM_{2.5} concentrations)
- Ozone: 40 tpy of volatile organic compounds or NO_x
- Lead: 0.6 tpy
- Fluorides: 3 tpy
- Sulfuric acid mist: 7 tpy
- Hydrogen sulfide (H₂S): 10 tpy
- Total reduced sulfur (including H₂S): 10 tpy
- Reduced sulfur compounds (including H₂S): 10 tpy
- Municipal waste combustor organics (measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans): 3.2×10^{-6} megagrams per year (3.5×10^{-6} tons per year)
- Municipal waste combustor metals (measured as particulate matter): 14 megagrams per year (15 tons per year)
- Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride): 36 megagrams per year (40 tons per year)

- Municipal solid waste landfill emissions (measured as nonmethane organic compounds): 45 megagrams per year (50 tons per year)

2. “Significant” means, for purposes of this rule and in reference to a net emissions increase or the potential of a source to emit a regulated NSR pollutant not listed in paragraph “1,” any emissions rate.

3. Notwithstanding paragraph “1,” “significant,” for purposes of this rule, means any emissions rate or any net emissions increase associated with a major stationary source or major modification that would construct within ten kilometers of a Class I area and have an impact on such area equal to or greater than 1 µg/m³ (24-hour average).

“Significant emissions increase” means, for a regulated NSR pollutant, an increase in emissions that is significant for that pollutant.

“State implementation plan” or “SIP” means the plan adopted by the state of Iowa and approved by the Administrator that provides for implementation, maintenance, and enforcement of such primary and secondary ambient air quality standards as they are adopted by the Administrator, pursuant to the Act.

“Stationary source” means any building, structure, facility, or installation that emits or may emit a regulated NSR pollutant.

“Subject to regulation” means, for any air pollutant, that the pollutant is subject to either a provision in the Act, or a nationally applicable regulation codified by the Administrator and published in 40 CFR Subchapter C (Air Programs) that requires actual control of the quantity of emissions of that pollutant, and that such a control requirement has taken effect and is operative to control, limit or restrict the quantity of emissions of that pollutant released from the regulated activity, except that:

1. Greenhouse gases (GHGs), the air pollutant defined in 40 CFR 86.1818-12(a) (as amended through September 15, 2011) as the aggregate group of six greenhouse gases that includes carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, shall not be subject to regulation except as provided in paragraph “4,” and shall not be subject to regulation if the stationary source maintains its total sourcewide emissions below the GHG PAL level, meets the requirements in 567—33.9(455B), and complies with the PAL permit containing the GHG PAL.

2. For purposes of paragraphs “3” and “4,” the term “tpy CO₂ equivalent emissions (CO₂e)” shall represent an amount of GHGs emitted and shall be computed as follows:

(a) Multiply the mass amount of emissions (tpy) for each of the six greenhouse gases in the pollutant GHGs by the associated global warming potential of the gas published at 40 CFR Part 98, Subpart A, Table A-1, “Global Warming Potentials,” (as amended through December 24, 2014). For purposes of this definition, prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or microorganisms (including products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).

(b) Sum the resultant value from paragraph (a) for each gas to compute a tpy CO₂e.

3. The term “emissions increase,” as used in this paragraph and in paragraph “4,” shall mean that both a significant emissions increase (as calculated using the procedures specified in 33.3(2)“c” through “h”) and a significant net emissions increase (as specified in 33.3(1), in the definitions of “net emissions increase” and “significant”) occur. For the pollutant GHGs, an emissions increase shall be based on tpy CO₂e and shall be calculated assuming the pollutant GHGs are a regulated NSR pollutant, and “significant” is defined as 75,000 tpy CO₂e rather than calculated by applying the value specified in 33.3(1), in paragraph “2” of the definition of “significant.”

4. Beginning January 2, 2011, the pollutant GHGs are subject to regulation if:

(a) The stationary source is a new major stationary source for a regulated NSR pollutant that is not a GHG, and also will emit or will have the potential to emit 75,000 tpy CO₂e or more, or

(b) The stationary source is an existing major stationary source for a regulated NSR pollutant that is not a GHG, and also will have an emissions increase of a regulated NSR pollutant and an emissions increase of 75,000 tpy CO₂e or more.

“Temporary clean coal technology demonstration project” means the definition of “temporary clean coal technology demonstration project” set forth in 40 CFR 52.21(b)(36) and is adopted by reference.

“Title V permit” means an operating permit under Title V of the Act.

“Volatile organic compounds” or *“VOC”* means any compound included in the definition of “volatile organic compounds” found at 40 CFR 51.100(s) as amended through February 8, 2023.

33.3(2) Applicability. The requirements of this rule (PSD program requirements) apply to the construction of any new “major stationary source” as defined in 33.3(1) or any project at an existing major stationary source in an area designated as attainment or unclassifiable under Section 107(d)(1)(A)(ii) or (iii) of the Act.

In addition to the provisions set forth in 567—33.3(455B) through 567—33.9(455B), the provisions of 40 CFR Part 51, Appendix W (Guideline on Air Quality Models) as amended through January 17, 2017, are adopted by reference. Provisions set forth in 567—33.3(455B) through 567—33.9(455B) that are adopted by reference from 40 CFR 51.166 or 52.21 are as amended through July 19, 2021, unless otherwise noted. The following phrases contained in 40 CFR 51.166 are not adopted by reference: “it shall also provide that,” “mechanism whereby,” “the plan may provide that,” “the plan provides that,” “the plan shall provide,” and “the plan shall provide that.” Additionally, the term “the plan” shall mean “State Implementation Plan” or “SIP.”

a. The requirements of 33.3(10) through 33.3(18) apply to the construction of any new major stationary source or the major modification of any existing major stationary source, except as this rule (PSD program requirements) otherwise provides.

b. No new major stationary source or major modification to which the requirements of 33.3(10) through 33.3(18) “e” apply shall begin actual construction without a permit that states that the major stationary source or major modification will meet those requirements.

c. Except as otherwise provided in 33.3(2) “i” and “j,” and consistent with the definition of “major modification” contained in 33.3(1), a project is a major modification for a “regulated NSR pollutant” if it causes two types of emissions increases: a “significant emissions increase” and a “net emissions increase” that is “significant.” The project is not a major modification if it does not cause a significant emissions increase. If the project causes a significant emissions increase, then the project is a major modification only if it also results in a significant net emissions increase.

d. The procedure for calculating (before beginning actual construction) whether a significant emissions increase (i.e., the first step of the process) will occur depends upon the type of emissions units being modified, according to paragraphs 33.3(2) “e” through “h” of this subrule. The procedure for calculating (before beginning actual construction) whether a significant net emissions increase will occur at the major stationary source (i.e., the second step of the process) is contained in the definition of “net emissions increase.” Regardless of any such preconstruction projections, a major modification results if the project causes a significant emissions increase and a significant net emissions increase.

e. Actual-to-projected-actual applicability test for projects that only involve existing emissions units. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the “projected actual emissions” and the “baseline actual emissions” for each existing emissions unit equals or exceeds the significant amount for that pollutant.

f. Actual-to-potential test for projects that involve only construction of a new emissions unit(s). A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the “potential to emit” from each new emissions unit following completion of the project and the “baseline actual emissions” for a new emissions unit before the project equals or exceeds the significant amount for that pollutant.

g. Reserved.

h. Hybrid test for projects that involve multiple types of emissions units. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each emissions unit, using the method specified in paragraphs 33.3(2) “e” through “g” of this subrule, as applicable with respect to each emissions unit, for each type of emissions unit equals or exceeds the significant amount for that pollutant.

i. For any major stationary source with a PAL for a regulated NSR pollutant, the major stationary source shall comply with rule requirements under 567—33.9(455B).

33.3(3) *Ambient air increments.* The provisions for ambient air increments as specified in 40 CFR 52.21(c) as amended through October 20, 2010, are adopted by reference.

33.3(4) *Ambient air ceilings.* The provisions for ambient air ceilings as specified in 40 CFR 52.21(d) are adopted by reference.

33.3(5) *Restrictions on area classifications.* The provisions for restrictions on area classifications as specified in 40 CFR 52.21(e) are adopted by reference.

33.3(6) *Exclusions from increment consumption.* The provisions by which the SIP may provide for exclusions from increment consumption as specified in 40 CFR 51.166(f) are adopted by reference.

33.3(7) *Redesignation.* The provisions for redesignation as specified in 40 CFR 52.21(g) are adopted by reference.

33.3(8) *Stack heights.* The provisions for stack heights as specified in 40 CFR 52.21(h) are adopted by reference.

33.3(9) *Exemptions.* The provisions for allowing exemptions from certain requirements for PSD-subject sources as specified in 40 CFR 52.21(i) are adopted by reference.

33.3(10) *Control technology review.* The provisions for control technology review as specified in 40 CFR 52.21(j) are adopted by reference.

33.3(11) *Source impact analysis.* The provisions for a source impact analysis as specified in 40 CFR 52.21(k) are adopted by reference.

33.3(12) *Air quality models.* The provisions for air quality models as specified in 40 CFR 52.21(l) are adopted by reference.

33.3(13) *Air quality analysis.* The provisions for an air quality analysis as specified in 40 CFR 52.21(m) are adopted by reference.

33.3(14) *Source information.* The provisions for providing source information as specified in 40 CFR 52.21(n) are adopted by reference.

33.3(15) *Additional impact analyses.* The provisions for an additional impact analysis as specified in 40 CFR 52.21(o) are adopted by reference.

33.3(16) *Sources impacting federal Class I areas—additional requirements.* The provisions for sources impacting federal Class I areas as specified in 40 CFR 51.166(p) are adopted by reference.

33.3(17) *Public participation.*

a. The department shall notify all applicants within 30 days as to the completeness of the application or any deficiency in the application or information submitted. In the event of such a deficiency, the date of receipt of the application shall be the date on which the department received all required information.

b. Within one year after receipt of a complete application, the department shall:

(1) Make a preliminary determination whether construction should be approved, approved with conditions, or disapproved.

(2) Make available in at least one location in each region in which the proposed source would be constructed a copy of all materials the applicant submitted, a copy of the preliminary determination, and a copy or summary of other materials, if any, considered in making the preliminary determination.

(3) Notify the public, by posting on a publicly available website identified by the department, of the application, of the preliminary determination, of the degree of increment consumption that is expected from the source or modification, and of the opportunity for comment at a public hearing as well as written public comment. The electronic notice shall be available for the duration of the public comment period and shall include the notice of public comment, the draft permit(s), information on how to access the administrative record for the draft permit(s) and how to request or attend a public hearing on the draft permit(s). The department may use other means if necessary to ensure adequate notice to the affected public. At least 30 days shall be provided for public comment and for notification of any public hearing.

(4) Send a copy of the notice of public comment to the applicant, to the Administrator and to officials and agencies having cognizance over the location where the proposed construction would occur as follows: any other state or local air pollution control agencies; the chief executives of the city and county where the source would be located; any comprehensive regional land use planning agency; and any state, federal land

manager, or Indian governing body whose lands may be affected by emissions from the source or modification.

(5) Provide opportunity for a public hearing for interested persons to appear and submit written or oral comments on the air quality impact of the source, alternatives to the proposed source or modification, the control technology required, and other appropriate considerations. At least 30 days' notice shall be provided for any public hearing.

(6) Consider all written comments submitted within a time specified in the notice of public comment and all comments received at any public hearing(s) in making a final decision on the approvability of the application. The department shall make all comments available for public inspection at the same locations where the department made available preconstruction information relating to the proposed source or modification.

(7) Make a final determination whether construction should be approved, approved with conditions, or disapproved.

(8) Notify the applicant in writing of the final determination and make such notification available for public inspection at the same locations where the department made available preconstruction information and public comments relating to the proposed source or modification.

c. Reopening of the public comment period.

(1) If comments submitted during the public comment period raise substantial new issues concerning the permit, the department may, at its discretion, take one or more of the following actions:

1. Prepare a new draft permit, appropriately modified;
2. Prepare a revised fact sheet;
3. Prepare a revised fact sheet and reopen the public comment period; or
4. Reopen or extend the public comment period to provide interested persons an opportunity to comment on the comments submitted.

(2) The public notice provided by the department pursuant to this rule shall define the scope of the reopening. Department review of any comments filed during a reopened comment period shall be limited to comments pertaining to the substantial new issues causing the reopening.

33.3(18) Source obligation.

a. Approval to construct shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions of the plan and any other requirements under local, state or federal law.

b. At such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation that was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, the requirements of 33.3(10) through 33.3(19) shall apply to the source or modification as though construction had not yet commenced on the source or modification.

c. Any owner or operator who constructs or operates a source or modification not in accordance with the application pursuant to the provisions in 567—33.3(455B) or with the terms of any approval to construct, or any owner or operator of a source or modification subject to the provisions in 567—33.3(455B) who commences construction after April 15, 1987 (the effective date of Iowa's PSD program), without applying for and receiving department approval, shall be subject to appropriate enforcement action.

d. Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The department may extend the 18-month period upon a satisfactory showing that an extension is justified. These provisions do not apply to the time between construction of the approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date.

e. Reserved.

f. Except as otherwise provided in subparagraph (8), the following specific provisions shall apply with respect to any regulated NSR pollutant emitted from projects at existing emissions units at a major stationary source, other than projects at a source with a PAL, in circumstances where there is a "reasonable possibility," within the meaning of subparagraph (8), that a project that is not part of a major modification

may result in a significant emissions increase of such pollutant, and the owner or operator elects to use the method for calculating projected actual emissions as specified in 33.3(1), paragraphs “1” through “3” of the definition of “projected actual emissions.”

(1) Before beginning actual construction of the project, the owner or operator shall document and maintain a record of the following information:

1. A description of the project;
2. Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the project; and
3. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under paragraph “3” of the definition of “projected actual emissions” in 33.3(1), an explanation describing why such amount was excluded, and any netting calculations, if applicable.

(2) No less than 30 days before beginning actual construction, the owner or operator shall meet with the department to discuss the owner’s or operator’s determination of projected actual emissions for the project and shall provide to the department a copy of the information specified in 33.3(18)“f.” The owner or operator is not required to obtain a determination from the department regarding the project’s projected actual emissions prior to beginning actual construction.

(3) If the emissions unit is an existing electric utility steam generating unit, before beginning actual construction, the owner or operator shall provide a copy of the information set out in subparagraph (1) to the department. The requirements in subparagraphs (1), (2) and (3) shall not be construed to require the owner or operator of such a unit to obtain any determination from the department before beginning actual construction.

(4) The owner or operator shall:

1. Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any emissions unit identified in subparagraph (1);

2. Calculate the annual emissions, in tons per year on a calendar-year basis, for a period of five years following resumption of regular operations and maintain a record of regular operations after the change, or for a period of ten years following resumption of regular operations after the change if the project increases the design capacity or potential to emit of that regulated NSR pollutant at such emissions unit (for purposes of this requirement, “regular” shall be determined by the department on a case-by-case basis); and

3. Maintain a written record containing the information required in this subparagraph.

(5) The written record containing the information required in subparagraph (4) shall be retained by the owner or operator for a period of ten years after the project is completed.

(6) If the unit is an existing electric utility steam generating unit, the owner or operator shall submit a report to the department within 60 days after the end of each year during which records must be generated under subparagraph (4) setting out the unit’s annual emissions during the calendar year that preceded submission of the report.

(7) If the unit is an existing unit other than an electric utility steam generating unit, the owner or operator shall submit a report to the department if the annual emissions, in tons per year, from the project identified in subparagraph (1), exceed the baseline actual emissions, as documented and maintained pursuant to subparagraph (4), by an amount that is “significant” as defined in 33.3(1) for that regulated NSR pollutant, and if such emissions differ from the preconstruction projection as documented and maintained pursuant to subparagraph (4). Such report shall be submitted to the department within 60 days after the end of such year. The report shall contain the following:

1. The name, address and telephone number of the major stationary source;
2. The annual emissions as calculated pursuant to subparagraph (4); and
3. Any other information that the owner or operator wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection).

(8) A “reasonable possibility” under this paragraph (33.3(18)“f”) occurs when the owner or operator calculates the project to result in either:

1. A projected actual emissions increase of at least 50 percent of the amount that is a “significant emissions increase,” as defined under 33.3(1) (without reference to the amount that is a significant net emissions increase), for the regulated NSR pollutant; or

2. A projected actual emissions increase that, when added to the amount of emissions excluded under 33.3(1), paragraph “3” of the definition of “projected actual emissions,” equals at least 50 percent of the amount that is a “significant emissions increase,” as defined under 33.3(1) (without reference to the amount that is a significant net emissions increase), for the regulated NSR pollutant. For a project for which a reasonable possibility occurs only within the meaning of this numbered paragraph, and not also within the meaning of numbered paragraph “1” of this subparagraph (subparagraph (8)), then the provisions of subparagraphs (3) through (7) do not apply to the project.

g. The owner or operator of the source shall make the information required to be documented and maintained pursuant to paragraph 33.3(18) “f” available for review upon request for inspection by the department or the general public pursuant to the requirements for Title V operating permits contained in 567—subrule 22.107(6).

33.3(19) Innovative control technology. The provisions for innovative control technology as specified in 40 CFR 51.166(s) are adopted by reference.

33.3(20) Conditions for permit issuance. Except as explained below, a permit may not be issued to any new “major stationary source” or “major modification” as defined in 33.3(1) that would locate in any area designated as attainment or unclassifiable for any national ambient air quality standard pursuant to Section 107 of the Act, when the source or modification would cause or contribute to a violation of any national ambient air quality standard. A major stationary source or major modification will be considered to cause or contribute to a violation of a national ambient air quality standard when such source or modification would, at a minimum, exceed the following significance levels at any locality that does not or would not meet the applicable national standard:

	Averaging Time				
	Annual	24 hrs.	8 hrs.	3 hrs.	1 hr.
Pollutant	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
SO ₂	1.0	5	—	25	—
PM ₁₀	1.0	5	—	—	—
PM _{2.5}	0.3	1.2	—	—	—
NO ₂	1.0	—	—	—	—
CO	—	—	500	—	2,000

A permit may be granted to a major stationary source or major modification as identified above if the major stationary source or major modification reduces the impact of its emissions upon air quality by obtaining sufficient emissions reductions to compensate for its adverse ambient air impact where the major stationary source or major modification would otherwise contribute to a violation of any national ambient air quality standard. This subrule shall not apply to a major stationary source or major modification with respect to a particular pollutant if the owner or operator demonstrates that the source is located in an area designated under Section 107 of the Act as nonattainment for that pollutant.

33.3(21) Administrative amendments.

a. Upon request for an administrative amendment, the department may take final action on any such request and may incorporate the requested changes without providing notice to the public or to affected states, provided that the department designates any such permit revisions as having been made pursuant to 33.3(21).

b. An administrative amendment is a permit revision that does any of the following:

- (1) Corrects typographical errors;
- (2) Corrects word processing errors;
- (3) Identifies a change in name, address or telephone number of any person identified in the permit or provides a similar minor administrative change at the source; or
- (4) Allows for a change in ownership or operational control of a source where the department determines that no other change in the permit is necessary, provided that a written agreement that contains a

specific date for transfer of permit responsibility, coverage, and liability between the current permittee and the new permittee has been submitted to the department.

33.3(22) Permit rescission. Any permit issued under 40 CFR 52.21 or this chapter or any permit issued under 567—22.4(455B) shall remain in effect unless and until it expires or is rescinded under 40 CFR 52.21(w) or this chapter. The provisions for permit rescission as set forth in 40 CFR 52.21(w) are adopted by reference. The department will consider requests for rescission that meet the conditions specified in this subrule. If the department rescinds a permit or a condition in a permit issued under 40 CFR 52.21, this chapter, or 567—22.4(455B), the public shall be given adequate notice of the proposed rescission. Posting of an announcement of rescission on a publicly available website identified by the department 60 days prior to the proposed date for rescission shall be considered adequate notice.

[ARC 7962C, IAB 5/15/24, effective 6/19/24]

567—33.4 to 33.8 Reserved.

567—33.9(455B) Plantwide applicability limitations (PALs). This rule provides an existing major source the option of establishing a PAL on emissions, provided the conditions in this rule are met. The provisions for a PAL as set forth in 40 CFR 52.21(aa) are adopted by reference, except that the term “Administrator” shall mean “the department of natural resources.”

[ARC 7962C, IAB 5/15/24, effective 6/19/24]

567—33.10(455B) Exceptions to adoption by reference. All references to Clean Units and Pollution Control Projects set forth in 40 CFR 51.166 and 52.21 are not adopted by reference.

[ARC 7962C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code section 455B.133.

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[Filed ARC 7962C (Notice ARC 7223C, IAB 12/27/23), IAB 5/15/24, effective 6/19/24]

CHAPTER 34
PROVISIONS FOR AIR QUALITY EMISSIONS TRADING PROGRAMS
Rescinded **ARC 7963C**, IAB 5/15/24, effective 6/19/24

CHAPTER 35
AIR EMISSIONS REDUCTION ASSISTANCE PROGRAM
Rescinded **ARC 7964C**, IAB 5/15/24, effective 6/19/24

CHAPTERS 36 and 37
Reserved
[Editorial change: IAC Supplement 4/20/22]

TITLE III
WITHDRAWAL DIVERSION, STORAGE AND USE OF WATER

DIVISION A
WATER WELL CONSTRUCTION: GENERAL STANDARDS AND REGISTRATION OF CONTRACTORS

CHAPTER 38
PRIVATE WATER WELL CONSTRUCTION PERMITS
Rescinded **ARC 9196C**, IAB 5/14/25, effective 6/18/25

CHAPTER 39
REQUIREMENTS FOR PROPERLY PLUGGING ABANDONED WELLS

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—39.1(455B) Purpose and applicability. This chapter implements Iowa Code section 455B.190 by providing a schedule and required procedures for the proper plugging of abandoned wells to protect the groundwater by permanently sealing off contamination to individual aquifers.

39.1(1) Wells covered by these rules are those accessing groundwater (withdrawing water from or injecting water into the groundwater) and can include but are not limited to public and nonpublic water wells, test wells, observation wells, monitoring wells, agricultural drainage wells, heat pump recirculation wells, and cooling water wells.

39.1(2) Wells or subsurface structures not covered by these rules include small-diameter (2-inch or less) test holes, observation wells or monitoring wells installed for a limited time that can be sealed by withdrawing the casing and allowing the hole to collapse; soil borings; septic tanks; underground storage tanks; and cisterns, if not used for accessing groundwater.

39.1(3) For additional guidance and background information, refer to “Guidelines for Plugging Abandoned Water Wells,” Technical Information Series 15, Geological Survey Bureau, Iowa DNR, 1988, available on the department’s website at www.iowadnr.gov.

[ARC 9197C, IAB 5/14/25, effective 6/18/25]

567—39.2(455B) Definitions. In addition to the definitions in 567—Chapter 40, 567—Chapter 49, 567—Chapter 82, and Iowa Code sections 455B.101, 455B.171, 455B.190 and 455B.190A, the following definitions shall apply to this chapter:

“Agricultural lime” means all calcium and magnesium products sold for agricultural purposes in the carbonate form, not including quicklime or hydrated lime, of a size comparable with that of crushed stone, gravel, or pea gravel.

“Approved” means accepted or acceptable under an applicable specification stated or cited in these rules.

“Aquifer” means a water-bearing geologic formation capable of yielding a usable quantity of water to a well or spring.

“Bentonite” means a naturally occurring, highly plastic, colloidal clay composed largely of the mineral montmorillonite that expands upon wetting.

“Bentonite grout” or *“slurry”* means a mixture of 10 percent processed bentonite (by weight) and water that is free of contaminants, turbidity, and settleable solids.

“Bentonite pellets” means a form of processed bentonite that can be used directly for sealing applications in well plugging operations.

“Bentonite products” means the forms of bentonite that can be used for sealing material in wells, including graded bentonite, bentonite pellets, and bentonite grout.

“Capped” means the application of a layer of sealing material at the top of the well casing.

“Casing” means a tubular retaining structure installed in an excavated hole to maintain the well opening.

“Concrete” means a mixture of one sack (94 pounds) of Portland cement, up to but not exceeding an equal amount by volume of sand and up to but not exceeding an equal amount by volume of gravel or crushed stone and not more than six gallons of water that is free of contaminants, turbidity, and settleable solids.

“Confined aquifer” means an aquifer in which the groundwater is under pressure greater than atmospheric pressure. The static water level in a well tapping a confined aquifer rises to a level above the top of the aquifer.

“Crushed stone” means stone (predominantly limestone), crushed and well graded, with 100 percent passing a 1-inch sieve, in accordance with the 1984 edition of Iowa Department of Transportation (DOT) specification No. 4120.04 for Class A crushed stone.

“Frost pit” means a sunken area located directly over or within four feet of a well and used to house the equipment for discharging water from a well into the water system.

“Graded bentonite” means bentonite that is crushed and sized for pouring and easy handling. Like processed bentonite, it swells when hydrated with water and will form a plastic, essentially impermeable mass.

“Gravel” means stone screened from river sand or quarried, with 100 percent passing a ¾-inch sieve, in accordance with the 1984 edition of the Iowa DOT specification No. 4120.02 for Class B gravel.

“Groundwater” means any water beneath the surface of the earth.

“Grout” means a material used to seal the annular space between the casing and borehole or between casings, or to seal wells during plugging. Approved grouts include bentonite products, concrete, neat cement, or sand cement grout.

“Limestone” means sedimentary rock that contains greater than 50 percent calcium carbonate and has a strong reaction with hydrochloric acid (HCL).

“Neat cement” means a mixture of one sack (94 pounds) of Portland cement to not more than six gallons of water that is free from contaminants, turbidity, or settleable solids. Bentonite up to 2 percent by weight of cement may be added to reduce shrinkage.

“Pea gravel” means gravel sized from ⅛ inch to ⅜ inch in diameter.

“Processed bentonite” means bentonite that has been kiln-dried and processed into pellets for direct use in well sealing applications or into powder or coarse granules for use in bentonite grout for sealing.

“Rock” means stone screened from river sand or quarried, free of debris, foreign matter, and any toxic or agricultural chemical residue, up to 2½ inches in diameter.

“Sand” means clean, medium-textured quartz (concrete sand), at least 25 percent with diameters between 0.25 and 2.0 mm, less than 35 percent with diameters between 0.05 and 0.25 mm, and less than 5 percent with diameters between 0.002 and 0.05 mm.

“Sand cement grout” means a mixture of one sack (94 pounds) of Portland cement, an equal amount by volume of sand and not more than six gallons of water that is free from contaminants, turbidity, and settleable solids.

“Sandpoint well” means a small-diameter water well constructed by joining a screened drive point with lengths of pipe and driving the assembly into a shallow sand and gravel aquifer.

“Sealing” means the proper placement of sealing materials into an abandoned well to seal off flow into, out of, or between aquifers.

“Standby well” means a water well that is temporarily taken out of service with the expectation of being returned to service at a future date.

“Static water level” means the water level in a water well or aquifer when the well is not flowing or being pumped, sometimes referred to as the water line. The static water level for an abandoned well is determined just prior to commencing plugging operations.

“Tremie pipe” means a device, usually a small-diameter pipe, that carries grouting materials to the bottom of the hole and that allows pressure grouting from the bottom up without introduction of air pockets.

“Unconfined aquifer” means an aquifer in which the static water level does not rise above the top of the aquifer (i.e., the pressure of the water in the aquifer is approximately equal to that of the atmosphere).

[ARC 9197C, IAB 5/14/25, effective 6/18/25]

567—39.3(455B) Abandoned well plugging schedule. All classes of wells that are abandoned must be properly plugged within 90 days of the date of abandonment.

[ARC 9197C, IAB 5/14/25, effective 6/18/25]

567—39.4(455B) Abandoned well owner responsibilities.

39.4(1) Plugging requirements. The well owner is responsible for ensuring an abandoned well is plugged pursuant to this chapter.

39.4(2) Record. It is the responsibility of the owner to complete, certify, and submit to the department, or the local county health department when seeking private well grant funds, the well plugging form documenting that an abandoned well has been plugged in accordance with the requirements in this

chapter, within 30 calendar days of the completed plugging. The well plugging form shall include confirmation of the well plugging by the designated agent for the county or a certified well contractor. The form is available on the department's website at www.iowadnr.gov.

[ARC 9197C, IAB 5/14/25, effective 6/18/25]

567—39.5(455B) Abandoned well plugging materials.

39.5(1) *Sealing materials.* Approved sealing materials are bentonite products (graded bentonite, bentonite pellets, and bentonite grout), neat cement, sand cement grout, and concrete. If graded bentonite or bentonite pellets are used, they may be added by pouring in place and agitating to avoid bridging.

39.5(2) *Filling materials.* Approved filling materials include agricultural lime, sand, pea gravel, gravel, and crushed stone. Soil may only be used to backfill the top four feet above the final sealing cap. The filling materials shall be free of debris, foreign matter, and any toxic or agricultural chemical residue. Filling materials are not required for well plugging.

[ARC 9197C, IAB 5/14/25, effective 6/18/25]

567—39.6(455B) Abandoned well plugging procedures.

39.6(1) *Freedom from obstructions.* Abandoned wells must be checked before they are plugged in order to ensure there are no obstructions that may interfere with plugging operations. Drop pipes, check valves, pumps, and other obstructions shall be removed if practical.

39.6(2) *Removal of casing and housing for all wells.* Casing pipe and any curbing, frost pit, or pump house structure shall be removed to a depth of four feet below the ground surface. The remaining depth shall be sealed, as specified based on well type, backfilled with soil, and graded so that surface water is directed away from the abandoned well location.

39.6(3) *Class 1 wells.*

a. Class 1 wells may be plugged by pouring filling and sealing materials from the top of the well or by using tremie pipes or dump bailers. Sand cement grout or concrete placed below the static water level shall be placed by tremie pipe or dump bailer.

b. Filling materials shall be placed up to one foot below the static water level. A minimum of one foot of sealing materials shall be placed on top of the filling material up to the static water level as a seal. Filling material may then be added up to four feet below the ground surface.

c. A minimum of one foot of sealing materials shall be placed where the casing, curbing, frost pit, or pump house structure is removed. The sealing materials shall extend six or more inches beyond the outside diameter of the top of the remaining well casing and shall terminate three feet below the ground surface. The remaining three feet (below the ground surface) shall then be backfilled with soil and graded so that surface water is directed away from the abandoned well location.

39.6(4) *Class 2 wells other than bedrock wells.*

a. If the details of well construction are unknown or obstructions that may interfere with well plugging cannot be removed, the well shall be tremied full of neat cement or bentonite grout up to four feet below the ground surface. If bentonite grout is used from the static water level to the top of the well, it should be capped by neat cement, sand cement grout, or concrete terminating four feet below the ground surface.

b. Filling material shall be placed in the bottom of the well up to four feet below the static water level. Sealing materials consisting of any bentonite products or neat cement shall be added above the filling material up to four feet below ground surface. If bentonite grout or neat cement is used, it shall be placed by tremie pipe. Concrete and sand cement grout are permissible starting at the static water level.

39.6(5) *Class 2 bedrock wells.* If the details of well construction are unknown or obstructions that may interfere with well plugging cannot be removed, the well shall be tremied full of neat cement or bentonite grout up to four feet below the ground surface. If bentonite grout is used from the static water level to the top of the well, it should be capped by neat cement, sand cement grout, or concrete terminating four feet below the ground surface.

a. Bedrock wells completed in a single confined aquifer.

(1) Before the well is plugged, a bridge plug or packer shall be placed at or below the bottom of the casing to stop the flow of water where the pressure in the confined aquifer causes the water to flow from

the well to the surface. In such cases, filling materials shall be placed in the lower portion of the well before the bridge plug or packer is set.

(2) Filling material shall be placed from the bottom of the well up to ten feet below the bottom of the casing or uncased confining layer, whichever is lower. Sealing materials consisting of any bentonite products, sand cement grout, or neat cement shall be placed from either the top of the filling material to at least ten feet above the bottom of the casing or uncased confining layer or to the static water level, whichever is higher.

1. If bentonite grout, neat cement, or sand cement grout is used, it shall be placed by tremie pipe. The casing shall then be filled up to four feet below the ground surface with sealing materials.

2. If bentonite grout is used from the static water level to the top of the well, it should be capped by neat cement, sand cement grout, or concrete terminating four feet below the ground surface.

(3) It is preferable to omit filling materials and use approved sealing materials to fill the entire well up to four feet below the ground surface.

b. Bedrock wells completed in a single unconfined aquifer. The plugging procedure for these wells is the same as for bedrock wells completed in a single confined aquifer, except that a bridge plug or packer is not required to stop the flow of water since this problem will not exist in this type of well.

c. Bedrock wells completed in multiple aquifers.

(1) For the lowest aquifer, filling material shall be placed from either the bottom of the well up to ten feet below the bottom of the casing or uncased confining layer, whichever is lower. Neat cement tremied in place shall then be placed as a sealing material on top of the fill and extend upward at least 20 feet. Sealing materials shall then be placed in at least the top ten feet of each subsequent aquifer and extend at least ten feet into either the confining layer or casing above, whichever is higher. The same type of filling materials and sealing procedures shall apply for each subsequent aquifer.

(2) Filling material may be placed from the top of the uppermost aquifer seal up to the static water level of the well. The casing shall then be filled with sealing materials to four feet below the ground surface. If bentonite grout is used from the static water level to the top of the well, it should be capped by neat cement, sand cement grout, or concrete terminating four feet below the ground surface.

(3) It is preferable to omit filling materials and use approved sealing materials to fill the entire well up to four feet below the ground surface. Sand cement grout or concrete shall be applied with a tremie pipe or dump bailer when applied below the static water level.

39.6(6) Class 3 wells. The preferred method of plugging a sandpoint well is to pull the casing and sandpoint out of the ground, allowing the hole to collapse and fill. If the sandpoint and casing cannot be extracted, they shall be tremied full of neat cement or completely sealed with bentonite products.

[ARC 9197C, IAB 5/14/25, effective 6/18/25]

567—39.7(455B) Designation of standby wells.

39.7(1) Standby wells. All standby wells shall:

a. Be disinfected prior to being taken out of use for a long period of time and when placed back in service, in accordance with rule 567—49.24(455B);

b. Be checked for bacteria and nitrates, as a minimum, when placed back in service;

c. Not be subject to contamination by surface drainage or from other causes;

d. Be provided with an airtight well casing cover when the well is not in use; and

e. Be repaired so that there is no degradation of groundwater and it is suitable for use prior to being classified as a standby well.

39.7(2) Caveat. Nothing in these rules shall be construed as exempting public water supply wells from any other requirements set forth in state rules.

[ARC 9197C, IAB 5/14/25, effective 6/18/25]

567—39.8(455B) Waivers. A waiver to these rules may be granted by the department provided sufficient information substantiating the need for a waiver is submitted in accordance with the department's waiver procedures in 561—Chapter 10. When satisfactory justification has been submitted to the director demonstrating that a waiver to these rules will result in equivalent or improved effectiveness and equivalent

protection of all aquifers penetrated by the affected well, a waiver to these rules may be granted by the director. A waiver denial may be appealed to the commission pursuant to 567—Chapter 7.

[ARC 9197C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.172 and 455B.190.

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¹ Effective date (11/23/88) delayed until adjournment of the 1989 Session of the General Assembly pursuant to Iowa Code section 17A.8(9) by the Administrative Rules Review Committee at its November 15, 1988 meeting.

² Effective date of 39.8(3), second paragraph, first sentence, and 39.8(4)“a,” second paragraph, first sentence, delayed 70 days from 4/25/90 by the Administrative Rules Review Committee at its 4/12/90 meeting.

DIVISION B
DRINKING WATER

CHAPTER 40

SCOPE OF DIVISION—DEFINITIONS—FORMS—RULES OF PRACTICE

[Prior to 12/3/86, Water, Air and Waste Management [900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—40.1(455B) Scope of division. The department conducts the public water supply program and establishes minimum standards for the construction of private water supply systems. The public water supply program includes the following: the establishment of drinking water standards, including maximum contaminant levels, treatment techniques, maximum residual disinfectant levels, action levels, monitoring, viability assessment, consumer confidence reporting, public notice requirements, public water supply system operator certification standards, environmental drinking water laboratory certification program, and a state revolving loan program consistent with the federal Safe Drinking Water Act, and the establishment of construction standards. The construction, modification and operation of any public water supply system requires a specific permit from the department. Certain construction permits are issued upon certification by a licensed professional engineer that a project meets standards, and, in certain instances, permits are issued by local authorities pursuant to 567—Chapter 9. Private water supplies are regulated by local boards of health.

Chapter 38 contains requirements for private water well construction permits, including test wells and monitoring wells.

Chapter 39 contains requirements for the proper closure or abandonment of wells.

Chapter 40 includes rules of practice, including designation of forms, applicable to the public in the department's administration of the subject matter of this division.

Chapter 41 contains the drinking water standards and specific monitoring requirements for the public water supply program.

Chapter 42 contains the public notification, public education, consumer confidence reporting, and record-keeping requirements for the public water supply program.

Chapter 43 contains specific design, construction, fee, operating, and operation permit requirements for the public water supply program.

Chapter 44 contains the drinking water state revolving fund program for the public water supply program.

Chapter 49 contains the nonpublic water supply well requirements.

Chapters 50 to 52 contain the provisions for water withdrawal and allocation.

Chapter 55 contains the provisions for public water supply aquifer storage and recovery.

Chapter 81 contains the provisions for the certification of public water supply system operators.

Chapter 82 contains the provisions for the certification of water well contractors.

Chapter 83 contains the provisions for the certification of laboratories to provide environmental testing of drinking water supplies.

[ARC 9915B, IAB 12/14/11, effective 1/18/12]

567—40.2(455B) Definitions.

"Act" means the Safe Drinking Water Act as amended (42 U.S.C. 300f et seq.).

"Action level" is the concentration of lead or copper in water which determines, in some cases, the treatment requirements that a water system is required to complete.

"Acute health effect" means the health effect of a contaminant which is an immediate rather than a long-term risk to health.

"Animal confinement" means a lot, yard, corral, or similar structure in which the concentration of livestock or poultry is such that a vegetative cover is not maintained.

"Animal pasturage" means a fenced area where vegetative cover is maintained and in which animals are enclosed.

“Animal waste” means animal wastes consisting of excreta, leachings, feed losses, litter, washwaters or other associated wastes.

“Animal waste stockpiles” means the stacking, composting or containment of animal wastes.

“Animal waste storage basin or lagoon” means a fully or partially excavated or diked earthen structure used for containing animal waste, including earthen sideslopes or floor.

“Animal waste storage tank” means a completely fabricated structure, with or without a cover, either formed in place or transported to the site, used for containing animal wastes.

“Antisiphon device” means a device which will prevent back siphonage by means of a relief valve which automatically opens to the atmosphere, preventing the creation of subatmospheric pressure within a pipe, thereby preventing water from reversing its flow.

“Authority” means the Iowa finance authority (IFA) as established by Iowa Code chapter 16.

“Backflow” means the flow of water or other liquids, mixtures, or substances into the distribution system of a potable water supply from any source other than its permitted source.

“Backflow preventer” is a device or means to prevent backflow into a potable water system.

“Back siphon” means the flowing back of used, contaminated, or polluted water, from a plumbing fixture or vessel as a result of negative or subatmospheric pressure within the distribution system.

“Bag filters” means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to the outside.

“Bank filtration” means a water treatment process that uses a well to recover surface water that has naturally infiltrated into groundwater through a river bed or bank(s). Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well(s).

“Best available technology” or *“BAT”* means the best technology, treatment techniques, or other means which the state finds, after examination, for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration).

“Cartridge filters” means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

“Cistern” means a tank in which rainwater from roof drains is stored.

“Clean compliance history” means, for the purposes of 567—paragraph 41.2(1)“e”(4)“2,” a record of no monitoring violations and no coliform treatment technique trigger exceedances or treatment technique violations under 567—subrule 41.2(1).

“Coagulation” means a process using coagulation chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.

“Combined distribution system (CDS)” means the interconnected distribution system consisting of the distribution systems of wholesale systems and of the consecutive systems that receive finished water.

“Commission” means the environmental protection commission of the state of Iowa.

“Community water system (CWS)” means a public water supply system which has at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

“Compliance cycle” means the nine-year (calendar year) cycle during which public water systems must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar year cycle begins January 1, 1993, and ends December 31, 2001; the second begins January 1, 2002, and ends December 31, 2010; the third begins January 1, 2011, and ends December 31, 2019, and continues every nine years thereafter.

“Compliance period” means a three-year (calendar year) period within a compliance cycle. Each compliance cycle has three three-year compliance periods. Within the first compliance cycle, the first compliance period runs from January 1, 1993, to December 31, 1995; the second from January 1, 1996, to December 31, 1998; the third from January 1, 1999, to December 31, 2001, and continues every three years thereafter.

“*Composite correction program (CCP)*” is a systematic, comprehensive procedure that identifies and corrects the unique combination of factors, in the areas of design, operation, maintenance, and administration, that limit the performance of a filtration plant. The CCP is comprised of two elements: comprehensive performance evaluation, which is the evaluation phase, and comprehensive technical assistance, which is the performance improvement phase.

“*Comprehensive performance evaluation (CPE)*” is a thorough review and analysis of a treatment plant’s performance-based capabilities and associated administrative, operation and maintenance practices. The CPE is conducted to identify factors that may be adversely impacting a plant’s capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. For purposes of compliance with surface water or influenced groundwater treatment plant requirements pursuant to 567—Chapters 41, 42, and 43, the comprehensive performance evaluation must consist of at least the following components: assessment of plant performance; evaluation of major unit processes; identification and prioritization of performance limiting factors; assessment of the applicability of comprehensive technical assistance; and preparation of a CPE report.

“*Comprehensive technical assistance (CTA)*” is the performance improvement phase of the composite correction plan that is implemented if the comprehensive performance evaluation results indicate improved performance potential by a filtration plant, in which the system must identify and systematically address plant-specific factors.

“*Confluent growth*” means a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

“*Consecutive public water supply*” means an active public water supply which purchases or obtains all or a portion of its water from another, separate public water supply, also called a wholesale system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

“*Conservation easements*” means an interest in land that entitles a person to use the land possessed by another (affirmative easement), or to restrict uses of the land subject to the easement (negative easement). A conservation easement restricts the landowner to uses that are compatible with resource conservation.

“*Contaminant*” means any physical, chemical, biological, or radiological substance or matter in water.

“*Contiguous*” means directly adjacent or touching along all or most of one side of a legally defined piece of property. Tracts of land involved in the same operation or water supply and separated only by roads, railroads, or bike trails are deemed contiguous tracts.

“*Conventional filtration treatment*” means a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.

“*Corrosion inhibitor*” means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

“*Corrosive water*” means a water which due to its physical and chemical characteristics may cause leaching or dissolving of the constituents of the transporting system in which it is contained.

“*Cross connection*” means any actual or potential connection between a potable water supply and any other source or system through which it is possible to introduce into the potable system any used water, industrial fluid, gas, or other substance other than the intended potable water with which the system is supplied.

“*Customers*” in consumer confidence reports are defined as billing units or service connections to which water is delivered by a community water system.

“*Deep well*” means a well located and constructed in such a manner that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

“*Department*” means the Iowa department of natural resources, which has jurisdiction over all nontribal public water systems in Iowa.

“*Diatomaceous earth filtration*” means a process resulting in substantial particulate removal in which (1) a precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum), and (2)

while the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

“Direct filtration” means a series of processes including coagulation and filtration but excluding sedimentation resulting in substantial particulate removal.

“Director” means the director of the Iowa department of natural resources or a designee.

“Disinfectant” means any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment process or distribution process, that is intended to kill or inactivate pathogenic microorganisms.

“Disinfection” means a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

“Disinfection profile” is a summary of *Giardia lamblia* inactivation through the treatment plant. The procedure for developing a disinfection profile is contained in 567—paragraph 43.9(2)“b”and 567—subrule 43.10(2).

“Dose equivalent” means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).

“Drinking water state revolving fund” or *“DWSRF”* means the department-administered fund intended to develop drinking water revolving loans to help finance drinking water infrastructure improvements, source water protection, system technical assistance, and other activities intended to encourage and facilitate public water supply system rule compliance and public health protection established by Iowa Code sections 455B.291 to 455B.299.

“DWSRF funds” means the combination of a particular fiscal year’s federal capitalization grant appropriation plus the 20 percent state of Iowa match and any additional funds made available through the program.

“Effective corrosion inhibitor residual” means a concentration of corrosion inhibitor sufficient to form a passivating film on the interior walls of a pipe.

“Eligible cost” means the cost of all labor, material, machinery, equipment, loan initiation and loan service fees, project planning, design and construction engineering services, legal fees and expenses directly related to the project, capitalized interest during construction of the project, and all other expansion, construction, and rehabilitation of all or part of a project included in the funding request placed on the draft intended use plan as a fundable project, subject to approval by the commission.

“Enhanced coagulation” means the addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment.

“Enhanced softening” means the improved removal of disinfection byproduct precursors by precipitative softening.

“Federal cross-cutters” means the federal laws and authorities that apply to projects funded through the DWSRF.

“Filter profile” is a graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

“Filtration” means a process for removing particulate matter from water by passage through a porous media.

“Finished water” means water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion chemicals).

“First draw sample” means a one-liter sample of tap water, collected in accordance with 567—paragraph 41.4(1)“c” that has been standing in plumbing pipes at least six hours and is collected without flushing the tap.

“Fiscal year” means the federal fiscal year starting October 1 and ending September 30.

“Flocculation” means a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.

“Flowing stream” means a course of running water flowing in a definite channel.

“GAC10” means granular activated carbon filter beds with an empty-bed contact time of ten minutes based on average daily flow and a carbon reactivation frequency of every 180 days, except that the reactivation frequency for GAC10 is 120 days when used as a best available technology for compliance with the maximum contaminant level locational running annual average for total trihalomethanes and haloacetic acids.

“GAC20” means granular activated carbon filter beds with an empty-bed contact time of 20 minutes based on average daily flow and a carbon reactivation frequency of every 240 days.

“Gross alpha particle activity” means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

“Gross beta particle activity” means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

“Haloacetic acids (HAA5)” means the sum of the concentrations in milligrams per liter of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after addition.

“Halogen” means one of the chemical elements chlorine, bromine or iodine.

“Health advisory (HA)” means a group of levels set by EPA below which no harmful health effect is expected from a given contaminant in drinking water. The HAs used by the department are listed in the most current edition of the EPA “Drinking Water Regulations and Health Advisories” bulletin. The lifetime HA is the concentration of a chemical in drinking water that is not expected to cause any adverse noncarcinogenic effects over a lifetime of exposure, with a margin of safety. The long-term HA is the concentration of a chemical in drinking water that is not expected to cause any adverse noncarcinogenic effects up to approximately seven years (10 percent of an individual’s lifetime of exposure), with a margin of safety.

“Human consumption” means water used as part of or in connection with drinking; washing; food processing or incidental to commercial food preparation, such as: water used in beverages or other food items; ice used in drinks or in salad bars; water for washing of vegetables or other food items; water used for washing dishes; pans or utensils used in food preparation or service; water used for cleanup and washing of food preparation or service areas; water for bathing, showering, hand washing, or oral hygiene purposes. Human consumption does not include: water for production of packaged or bulk food products regulated by other state or federal regulatory agencies, such as livestock slaughtering or bottled or canned food and beverages; cooling water; industrial or commercial wash waters used for nonfood products; irrigation water; water used in toilets or urinals.

“Impoundment” means a reservoir, pond, or lake in which surface water is retained for a period of time, ranging from several months upward, created by constructing a barrier across a watercourse and used for storage, regulation or control of water.

“Influenced groundwater (IGW)” means any groundwater which is under the direct or indirect influence of surface water, as determined by the presence of (1) significant occurrence of insects or other macroorganisms, algae or large-diameter pathogens such as *Giardia lamblia* or *Cryptosporidium*; or (2) significant and relatively rapid shifts in water characteristics such as turbidity (particulate content), temperature, conductivity, or pH which correlate to climatological or surface water conditions, or other parameters as specified in 567—43.5(455B).

“Initial compliance period” means the first full three-year compliance period of a compliance cycle.

“Intended use plan (IUP)” means a plan identifying the intended uses of funds available for loans in the DWSRF for each fiscal year as described in Section 1452 of the Safe Drinking Water Act.

“Lake or reservoir” means a natural or man-made basin or hollow on the Earth’s surface in which water collects or is stored that may or may not have a current or single direction of flow.

“Large water system” means a water system that serves more than 50,000 persons.

“Lead free,” when used with respect to solder and flux, refers to solders and flux containing not more than 0.2 percent lead; when used with respect to pipes and pipe fittings, refers to pipes and pipe fittings containing not more than 8.0 percent lead; and, when used with respect to plumbing fittings and fixtures

intended by the manufacturer to dispense water for human ingestion, refers to fittings and fixtures that are in compliance with standards established in accordance with 42 U.S.C. 300-g-6(e).

“Lead service line” means a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck, or other fitting which is connected to such lead line. A lead gooseneck is not considered a lead service line unless it exceeds 10 feet.

“Legionella” means a genus of bacteria, some species of which have caused a type of pneumonia called legionnaires’ disease.

“Level 1 assessment” means an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform bacteria monitoring practices, and (when possible) the likely reason that the system triggered the assessment. A Level 1 assessment is conducted by the system operator or owner. Minimum elements of the assessment include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., whether a groundwater system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The system owner or operator must conduct the assessment consistent with any department directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.

“Level 2 assessment” means an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform bacteria monitoring practices, and (when possible) the likely reason that the system triggered the assessment. A Level 2 assessment provides a more detailed examination of the system (including the system’s monitoring and operational practices) than does a Level 1 assessment through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices. A Level 2 assessment is conducted by a department water supply inspector and will typically include the system operator. Minimum elements of the assessment include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., whether a groundwater system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The department may tailor specific assessment elements with respect to the size and type of the system and the size, type and characteristics of the distribution system. The system must comply with any expedited actions or additional actions required by the department in the case of an *E. coli* MCL violation.

“Locational running annual average (LRAA)” means the average of the analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

“Maintenance” means the replacement of equipment or materials that are necessary to maintain the operation of the public water supply system but do not alter capacity, water quality or treatment method or effectiveness.

“Man-made beta particle and photon emitters” means all radionuclides emitting beta particles or photons or both listed in Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of thorium-232, uranium-235 and uranium-238.

“Maximum contaminant level” means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

“Maximum contaminant level goal (MCLG)” means the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MCLGs are nonenforceable health goals.

“Maximum residual disinfectant level (MRDL)” means a level of a disinfectant added for water treatment that may not be exceeded at the consumer’s tap without an unacceptable possibility of adverse health effects.

“Maximum residual disinfectant level goal (MRDLG)” means the maximum level of a disinfectant added for water treatment at which no known or anticipated adverse effect on the health of persons would

occur, and which allows an adequate margin of safety. MRDLGs are nonenforceable health goals and do not reflect the benefit of the addition of the chemical for control of waterborne microbial contaminants.

“Medium-size water system” means a water system that serves greater than 3,300 and less than or equal to 50,000 persons.

“Membrane filtration” means a pressure- or vacuum-driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

“Nonacute health effect” means the health effect of a contaminant which is a long-term rather than immediate risk to health.

“Noncommunity water system” means a public water system that is not a community water system. A noncommunity water system is either a “transient noncommunity water system (TNC)” or a “nontransient noncommunity water system (NTNC).”

“Nontransient noncommunity water system” or *“NTNC”* means a public water system other than a community water system which regularly serves at least 25 of the same persons four hours or more per day, for four or more days per week, for 26 or more weeks per year. Examples of NTNCs are schools, day-care centers, factories, offices and other public water systems which provide water to a fixed population of 25 or more people. In addition, other service areas, such as hotels, resorts, hospitals and restaurants, are considered as NTNCs if they regularly serve at least 25 or more of the same persons for four or more hours per day, for four or more days per week, for 26 or more weeks of the year.

“Optimal corrosion control treatment” means the corrosion control treatment that minimizes the lead and copper concentrations at users’ taps while ensuring that the treatment does not cause the water system to violate any drinking water standards (567—Chapters 40 to 43).

“Performance evaluation sample” means a reference sample provided to a laboratory for the purpose of demonstrating that a laboratory can successfully analyze the sample within limits of performance specified by the department. The true value of the concentration of the reference material is unknown to the laboratory at the time of analysis.

“Picocurie (pCi)” means that quantity of radioactive material producing 2.22 nuclear transformations per minute.

“Plant intake” means the works or structures at the head of a conduit through which water is diverted from a surface water source (e.g., river, reservoir, or lake) into the treatment plant.

“Point of disinfectant application” is the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff.

“Point-of-entry treatment device (POE)” is a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.

“Point-of-use treatment device (POU)” is a treatment device applied to a single tap or multiple taps used for the purpose of reducing contaminants in drinking water at those taps, but is not intended to treat all of the water in the facility.

“Population served” means the total number of persons served by a public water supply that provides water intended for human consumption. For municipalities which serve only the population within their incorporated boundaries, it is the last official U.S. census population (or officially amended census population). For all other community public water supply systems, it is either the actual population counted which is verifiable by the department, or population as calculated by multiplying the number of service connections by an occupancy factor of 2.5 persons per service connection. For municipalities which also serve outside their incorporated boundaries, the served population must be added to the official census population determined either by verifiable count or by the 2.5 persons per service connection occupancy factor. For nontransient noncommunity (NTNC) and transient noncommunity (TNC) systems, it is the average number of daily employees plus the average number of other persons served such as customers or visitors during the peak month of the year regardless if each person actually uses the water for human consumption. Where a system provides water to another public water supply system (consecutive public

water supply system) which is required to have an operation permit, the population of the recipient water supply shall not be counted as a part of the water system providing the water. Community and nontransient noncommunity public water supply systems will pay their operation permit fees based upon the population served.

“Presedimentation” means a preliminary treatment process used to remove gravel, sand, and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

“Privy” means a structure used for the deposition of human body wastes.

“Project” includes the planning, design, construction, alteration or extension of any public water supply system but does not include the maintenance of a system.

“Project priority list” means the list of projects in priority order that may qualify for DWSRF loan assistance contained in the IUP document prepared pursuant to rule 567—44.8(455B). The priority list shall identify all projects eligible for funding and the points assigned to each project pursuant to 567—subrule 44.7(7).

“Public water supply system control” is defined as one of the following forms of authority over a service line: authority to set standards for construction, repair, or maintenance of the service line; authority to replace, repair, or maintain the service line; or ownership of the line. Contaminants added to the water under circumstances controlled by the water consumer or user, with the exception of those contaminants resulting from the corrosion of piping and plumbing caused by water quality, are excluded from this definition of control.

“Public water supply system (PWS)” means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Such term includes: any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any “special irrigation district.” A public water system is either a “community water system” or a “noncommunity water system.”

“Regional water system” means a public water supply system in which the projected number of service connections in at least 50 percent of the length of the distribution system does not average more than eight service connections per linear mile of water main.

“Rem” means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A “millirem” (mrem) is 1/1000 of a rem.

“Repeat compliance period” means any subsequent compliance period after the initial compliance period.

“Residual disinfectant concentration” (“C” in CT calculations) means the concentration of disinfectant measured in mg/l in a representative sample of water.

“Sanitary defect” means a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place.

“Sanitary sewer pipe” means a sewer complying with the department’s standards for sewer construction.

“Sanitary survey” means a review and on-site inspection conducted by the department of the water source, facilities, equipment, operation and maintenance and records of a public water supply system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water and identifying improvements necessary to maintain or improve drinking water quality, pursuant to 567—subrule 43.1(7).

“SDWA” means the Safe Drinking Water Act.

“Seasonal system” means a noncommunity water system that is not operated as a public water system on a year-round basis and starts up and shuts down at the beginning and end of each operating season.

“Sedimentation” means a water treatment process for removal of solid particles from a suspension before filtration by gravity or separation.

“*Septic tank*” means a watertight structure into which wastewater is discharged for solids separation and digestion.

“*Service connections*” means the total number of active and inactive service lines originating from a water distribution main for the purpose of delivering water intended for human consumption. For municipalities, rural water districts, mobile home parks, housing developments, and similar facilities, this includes, but is not limited to, occupied and unoccupied residences and buildings, provided that there is a service line connected to the water main (or another service line), and running onto the property. For rental properties which are separate public water supply systems, this includes, but is not limited to, the number of rental units such as apartments. Connections to a system that delivers water by a constructed conveyance other than a pipe are excluded from the definition, if:

1. The water is used exclusively for purposes other than human consumption;
2. The department determines that alternative water to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulation is provided for human consumption; or
3. The department determines that the water provided for human consumption is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

“*Service line sample*” means a one-liter sample of water, collected in accordance with 567—paragraph 41.4(1)“c” for the purpose of determining the concentration of lead and copper which has been standing for at least six hours in a service line.

“*Shallow well*” means a well located and constructed in such a manner that there is not a continuous layer of low permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

“*Significant deficiency*” includes a defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department determines to be causing, or has the potential for causing the introduction of contamination into the water delivered to consumers.

“*Significant noncompliance*” means the failure to comply with any national primary drinking water standard as adopted by the state of Iowa according to criteria established by the administrator of the federal Environmental Protection Agency.

“*Single-family structure*” means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

“*Slow sand filtration*” means a process involving passage of raw water through a bed of sand at low velocity (generally less than 0.4 m/h (0.02 ft/min)) resulting in substantial particulate removal by physical and biological mechanisms.

“*Small water system*” means a water system that serves 3,300 persons or fewer.

“*Special irrigation district*” means an irrigation district in existence prior to May 18, 1994, that provides primarily agricultural service through a piped water system with only incidental residential or similar use where the system or the residential or similar users of the system comply with numbered paragraphs “2” and “3” in the definition of “service connections.”

“*Standard methods*” means “Standard Methods for the Examination of Water and Wastewater,” American Public Health Association, 1015 15th Street N.W., Washington, DC 20005.

“*Standard sample*” means the aliquot of finished drinking water that is examined for the presence of coliform bacteria.

“*Standard specifications*” means specifications submitted to the department for use as a reference in reviewing future plans for proposed water main construction.

“*Supplier of water*” means any person who owns or operates a public water supply system.

“*Surface water*” means all water which is open to the atmosphere and subject to surface runoff.

“*SUVA*” means Specific Ultraviolet Absorption at 254 nanometers (nm), an indicator of the humic content of water. It is a calculated parameter obtained by dividing a sample’s ultraviolet absorption at a wavelength of 254 nm (in m⁻¹) by its concentration of dissolved organic carbon (in mg/L).

“Ten States Standards” means the “Recommended Standards for Water Works,” 2012 edition as adopted by the Great Lakes—Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers.

“Too numerous to count” means that the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.

“Total organic carbon (TOC)” means total organic carbon in milligrams per liter, measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures.

“Total trihalomethanes (TTHM)” means the sum of the concentration in milligrams per liter of the trihalomethane compounds trichloromethane (chloroform), dibromochloromethane, bromodichloromethane and tribromomethane (bromoform), rounded to two significant figures.

“Transient noncommunity water system (TNC)” means a noncommunity water system that does not regularly serve at least 25 of the same persons over six months per calendar year.

“Treatment technique (TT)” means a treatment process required to minimize the level of a contaminant in drinking water. A treatment technique is specified in cases where it is not technically or economically feasible to establish an MCL, and it is an enforceable procedure or level of technological performance which public water systems must follow to ensure control of a contaminant.

“Trihalomethane (THM)” means one of the family of organic compounds, named as derivatives of methane, wherein three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure.

“Two-stage lime softening” means a process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration.

“Uncovered finished water storage facility” means a tank, reservoir, or other facility used to store water that will undergo no further treatment to reduce microbial pathogens except residual disinfection and is directly open to the atmosphere. Such facilities are prohibited.

“Unregulated contaminant” means a contaminant for which no MCL has been set, but which does have federal monitoring requirements for certain public water systems set forth in CFR Title 40, Part 141.40, and additional reporting requirements in rule 567—42.3(455B).

“Viability” means the technical, financial, and managerial ability to comply with applicable national primary drinking water standards as adopted by the state of Iowa. Viability is the ability of a system to remain in compliance insofar as the requirements of the SDWA.

“Virus” means a virus of fecal origin which is infectious to humans by waterborne transmission.

“Waterborne disease outbreak” means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by the Iowa department of public health.

“Water distribution system” means that portion of the water supply system in which water is conveyed from the water treatment plant or other supply point to the premises of the consumer, including any storage facilities and pumping stations.

“Water main pipe” means a water main complying with the department’s standards for water main construction.

“Wholesale system” means a public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18; ARC 6190C, IAB 2/9/22, effective 3/16/22]

567—40.3(17A,455B) Forms. The following forms are used by the public to apply for department approvals and to report on activities related to the public water supply program of the department. All forms may be obtained from the department’s website at www.iowadnr.gov (water supply pages) or from the Environmental Services Division, Administrative Support Station, Department of Natural Resources, Henry A. Wallace Building, 502 East Ninth Street, Des Moines, Iowa 50319-0034. Properly completed application forms shall be submitted to the Water Supply Section, Environmental Services Division. Water supply system monthly and other operation reporting forms shall be submitted to the appropriate field

office (see 567—subrule 42.4(3)). Properly completed laboratory forms (reference 567—Chapter 83) shall be submitted to the State Hygienic Laboratory or as otherwise designated by the department.

40.3(1) *Construction permit application forms.* Schedules “1a” through “16d” are required.

<u>Schedule No.</u>	<u>Name of Form</u>	<u>Form Number</u>
“1a”	General Information	542-3178
“1b”	Minor Water Main Construction Permit	542-3151
“1c”	Fee Schedule	542-3179
“2a”	Water Mains, General	542-3030
“2b”	Water Mains, Specifications	542-3031
“2c”	Notification of Minor Water Main Construction	542-3152
“3a”	Water System, Preliminary Data	542-3032
“3b”	Water Quality Data	542-3029
“3c”	Surface Water Quality Data	542-3028
“4”	Site Selection	542-3078
“5a”	Well Construction	542-1005
“5b”	Well Appurtenances	542-3026
“5c”	Well Profile	542-1006
“5d”	Surface Water Supply	542-3139
“6a”	Distribution Water Storage Facilities	542-3140
“7”	Schematic Flow Diagram	542-3142
“8”	Aeration	542-3143
“9”	Clarification/Sedimentation	542-3144
“10”	Suspended Solids Contact	542-3145
“11”	Cation Exchange Softening	542-3146
“12”	Filters	542-3147
“13a”	Chemical Addition	542-3241
“13b”	Dry Chemical Addition	542-3130
“13c”	Gas Chlorination	542-3131
“13d”	Fluoridation	542-3132
“13e”	Sampling and Tests	542-3133
“14”	Pumping Station	542-3134
“15”	Process Water Storage Facilities	542-3135
“16a”	Wastewater, General	542-3136
“16b”	Waste Treatment Ponds	542-3137
“16c”	Filtration and Mechanical	542-3138
“16d”	Discharge to Sewer	542-3103

40.3(2) *Operation permit application forms.*

- a. Form 13-2 — application for a new water supply 542-1300
- b. Form 13-3 — renewal application for an existing water supply 542-1301

40.3(3) *Water supply reporting forms.* The monthly water supply operation report forms are available from the department’s water supply operations section website. The laboratory analyses for compliance samples are reported via electronic means directly to the department by each certified laboratory.

40.3(4) *Laboratory certification application forms.* Reserved.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—40.4(17A,455B) Public water supply construction permit application procedures.

40.4(1) *General procedures.* Applications for written approval from the department for any new construction or for reconstruction pursuant to 567—Chapter 43 shall consist of complete plans and specifications, application fee, and appropriate water supply construction permit application schedules.

Upon review, the department will issue a construction permit for approval of a project if the review shows that the project meets all departmental design standards in accordance with 567—Chapter 43. Approval of a project which does not meet all department design standards will be denied unless a variance as provided by 567—paragraph 43.3(2) “b” is granted. A variance may be requested at the time plans and specifications are submitted or after the design discrepancy is pointed out to the applicant.

The department may review submitted project plans and specifications and provide comments and recommendations to the applicant. Departmental comments and recommendations are advisory, except when departmental review determines that a facility does not comply with the plans or specifications as approved by the department or comply with the design standards pursuant to the criteria for certification of project design. The owner of the system must correct the deficiency in a timely manner as set forth by the department.

40.4(2) *Public water sources and below-ground level water storage facilities—site survey.* For public water sources and for below-ground level finished water storage facilities, a site survey and approval must be made by the department. The manner and procedures for applying for and processing a site survey are the same as in 40.4(1) except that the following information must be submitted by the applicant’s engineer.

a. A preliminary engineering report or a cover letter which contains a brief description of the proposed source or storage facility and assurance that the project is in conformance with the long-range planning of the area.

b. Completed Schedule 1a — General Information

c. Completed Schedule 4 — Water Supply Facility Site Selection

d. A detailed map showing all potential sources of contamination (see 567—Chapter 43, Table A) within:

(1) 1,000 feet of a proposed well location. The scale shall not be smaller than 1 inch = 200 feet.

(2) 200 feet of a proposed below-ground level finished water storage facility.

(3) 2,500 feet from a proposed surface water source and a plat showing all facilities more than 2,500 feet from an impoundment (within the drainage area) that may be potential sources of contamination. The scale shall not be smaller than 1 inch = 660 feet.

(4) Six miles upstream of a proposed river intake.

40.4(3) *Modifications of an approved water supply construction project.* Persons seeking to make modifications to a water supply construction project after receiving a prior construction permit from the department shall submit an addendum to plans and specifications, a change order or revised plans and specifications at least 30 days prior to planned construction, and the appropriate fee. The department shall review the submitted material within 30 days of submission and shall issue a supplemental permit if the proposed modifications meet departmental standards.

40.4(4) *Certification of project design.* A permit shall be issued for the construction, installation or modification of a public water supply system or part of a system or for a water supply distribution system extension if a qualified, licensed professional engineer certifies that the plans and specifications comply with federal and state laws and regulations or that a variance to standards has been granted by the department. Refer to Schedule 1a.

567—40.5(17A,455B) Public water supply operation permit application procedures. A person requesting a water supply operation permit pursuant to 567—43.2(455B) must complete the appropriate application form, which will be provided by the department. Upon receipt of a completed application, the department will review the application and, if approved, will prepare and issue a water supply operation permit or draft permit, as applicable, and transmit it to the applicant. An annual operation fee pursuant to 567—subrule 43.2(1) is due by September 1 of each year. A permit or renewal will be denied when the applicant does not meet one or more requirements for issuance or renewal of this permit. An operation permit may be denied for any of the following reasons: system failed to pay the operation fee; system is not viable; system is not in compliance with the applicable maximum contaminant levels, treatment techniques, or action levels; system is in significant noncompliance with the provisions of 567—Chapter 41, 42, or 43.

567—40.6(455B) Drinking water state revolving fund loan application procedures. A person requesting a drinking water state revolving fund loan pursuant to 567—44.7(455B) must complete the

appropriate application form, which will be provided by the department. The department will review the application package pursuant to 567—44.9(455B). Eligible projects will be ranked according to priority, with the highest-ranked projects receiving funding priority.

567—40.7(455B) Viability assessment procedures. A person required to complete a viability assessment pursuant to 567—43.8(455B) must submit the appropriate information as outlined in 567—43.8(455B) to the department. Self-assessment worksheets which can be used to prepare the viability assessment are available from the Water Supply Section, Department of Natural Resources, Henry A. Wallace Building, 502 East Ninth Street, Des Moines, Iowa 50319-0034.

These rules are intended to implement Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192.

- [Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]
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[◇] Two or more ARCs

¹ Effective date of definitions “Population served” and “Service connections” and rule 40.5(17A,455B) delayed until adjournment of the 1995 General Assembly by the Administrative Rules Review Committee at its meeting held March 13, 1995.

CHAPTER 41 WATER SUPPLIES

[These rules transferred from Health Department, 1971 IDR (Title II, Chs 1 and 2)]

[Prior to 7/1/83, DEQ Ch 22]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—41.1(455B) Primary drinking water regulations—coverage. 567—Chapters 40 through 44 and 83 shall apply to each public water supply system, unless the public water supply system meets all of the following conditions:

1. Consists only of distribution and storage facilities (and does not have any collection and treatment facilities);
2. Obtains all of its water from, but is not owned or operated by, a public water supply system to which such regulations apply;
3. Does not sell water to any person; and
4. Is not a carrier which conveys passengers in interstate commerce.

567—41.2(455B) Biological maximum contaminant level (MCL), treatment technique (TT), and monitoring requirements.

41.2(1) *Coliform bacteria and E. coli.* The provisions of this subrule include both maximum contaminant level and treatment technique requirements. The provisions of this subrule apply to all public water systems. Failure to comply with the applicable requirements in this subrule is a violation of the national primary drinking water regulations.

a. Maximum contaminant level. A public water system must determine compliance with the MCL for *E. coli* for each month in which the system is required to monitor for total coliforms. A system is in compliance with the MCL for *E. coli* for samples taken under this subrule unless any of the following conditions occur. For purposes of the public notification requirements in 567—42.1(455B), violation of the MCL may pose an acute risk to health.

- (1) *E. coli*-positive repeat sample. The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample.
- (2) *E. coli*-positive routine sample. The system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample.
- (3) Failure to collect all required repeat samples following *E. coli*-positive routine samples. The system fails to take all required repeat samples following an *E. coli*-positive routine sample.
- (4) Failure to test for *E. coli* on any total coliform-positive repeat sample. The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.

b. Analytical methodology.

- (1) Sample volume. The standard sample volume required for analysis is 100 mL, regardless of the analytical method used.
- (2) Presence/absence required. Only the presence or absence of total coliforms and *E. coli* is required to be determined in any compliance sample; a determination of density is acceptable but is not required.
- (3) Holding time and temperature. The time from sample collection to initiation of test medium incubation may not exceed 30 hours. Systems are encouraged but not required to hold samples below 10° C during transit.
- (4) Dechlorinating agent required for chlorinated water. If water having a residual chlorine (measured as free, combined, or total chlorine) is to be analyzed, sufficient sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$) must be added to the sample bottle before sterilization to neutralize any residual chlorine in the water sample. Dechlorination procedures are addressed in Section 9060A.2 of Standard Methods for the Examination of Water and Wastewater (20th and 21st editions).

(5) Systems must conduct total coliform and *E. coli* analyses in accordance with one of the analytical methods in the following table.

Methodology Category	Method ¹	Citation ¹
Total Coliform Bacteria Methods:		
Lactose Fermentation Methods	Standard Total Coliform Fermentation Technique	Standard Methods 9221 B.1, B.2 (20th, 21st, and 22nd ed.) ^{2, 3} Standard Methods Online 9221 B.1, B.2-99, B-06 ^{2, 3}
	Presence-Absence (P-A) Coliform Test	Standard Methods 9221 D.1, D.2 (20th and 21st ed.) ^{2, 7} Standard Methods Online 9221 D.1, D.2-99 ^{2, 7}
Membrane Filtration Methods	Standard Total Coliform Membrane Filter Procedure	Standard Methods 9222 B, C (20th and 21st ed.) ^{2, 4} Standard Methods Online 9222 B-97 ^{2, 4} , 9222 C-97 ^{2, 4}
	Membrane Filtration using MI Medium	EPA Method 1604 ²
	m-ColiBlue24 Test ^{2, 4}	
	Chromocult ^{2, 4}	
Enzyme Substrate Methods	Colilert	Standard Methods 9223 B (20th, 21st and 22nd ed.) ^{2, 5} Standard Methods Online 9223 B-97, B-04 ^{2, 5}
	Colilert-18	Standard Methods 9223 B (21st and 22nd ed.) ^{2, 5} Standard Methods Online 9223 B-04 ^{2, 5}
	Colisure	Standard Methods 9223 B (20th, 21st and 22nd ed.) ^{2, 5, 6} Standard Methods Online 9223 B-97, B-04 ^{2, 5, 6}
	E*Colite Test ²	
	Readycult Test ²	
	modified Colitag Test ²	
	Tecta EC/TC Test ²	
<i>Escherichia coli</i> (E. coli) Methods:		
<i>Escherichia coli</i> Procedures (following Lactose Fermentation Methods)	EC-MUG Medium	Standard Methods 9221 F.1 (20th, 21st and 22nd ed.) ² Standard Methods Online 9221 F-06 ²
<i>Escherichia coli</i> Partition Method	EC broth with MUG (EC-MUG)	Standard Methods 9222 G.1c(2) (20th and 21st ed.) ^{2, 8}
	NA-MUG Medium	Standard Methods 9222 G.1c(1) (20th and 21st ed.) ²
Membrane Filtration Methods	Membrane Filtration using MI Medium	EPA Method 1604 ²
	m-ColiBlue24 Test ^{2, 4}	
	Chromocult ^{2, 4}	
Enzyme Substrate Methods	Colilert	Standard Methods 9223 B (20th, 21st and 22nd ed.) ^{2, 5} Standard Methods Online 9223 B-97, B-04 ^{2, 5, 6}
	Colilert-18	Standard Methods 9223 B (21st and 22nd ed.) ^{2, 5} Standard Methods Online 9223 B-04 ^{2, 5}
	Colisure	Standard Methods 9223 B (20th, 21st and 22nd ed.) ^{2, 5, 6} Standard Methods Online 9223 B-97, 04 ^{2, 5, 6}
	E*Colite Test ²	
	Readycult Test ²	
	modified Colitag Test ²	
	Tecta EC/TC Test ²	

¹The procedures must be done in accordance with the documents listed in 41.2(1)“a”(6). For Standard Methods, either the 20th (1998) or 21st (2005) edition may be used. For Standard Methods Online, the year in which each method was approved by the Standard Methods Committee is designated by the last two digits following the hyphen in the method number. The methods listed are the only online versions that may be used. For vendor methods, the date of the method listed in 41.2(1)“a”(6) is the date/version of the approved method. The methods listed are the only versions that may be used for compliance with this rule. Laboratories should be careful to use only the approved versions of the methods, as product package inserts may not be the same as the approved versions of the methods.

²Incorporated by reference. See 41.2(1) “a”(6).

³Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth if the system conducts at least 25 parallel tests between lactose broth and lauryl tryptose broth using the water normally tested and if the findings from this comparison demonstrate that the false-positive rate and the false-negative rate for total coliforms, using lactose broth, is less than 10 percent.

⁴All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is presterilized by the manufacturer (i.e., disposable funnel units) may be used.

⁵Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this subrule.

⁶Colisure results may be read after an incubation time of 24 hours.

⁷A multiple-tube enumerative format, as described in Standard Methods for the Examination of Water and Wastewater 9221, is approved for this method for use in presence-absence determination under this subrule.

⁸The following changes must be made to the EC broth with MUG (EC-MUG) formulation: Potassium dihydrogen phosphate, KH₂PO₄, must be 1.5 g, and 4-methylumbelliferyl-beta-D-glucuronide must be 0.05 g.

(6) Methods incorporated by reference. The standards required in this subrule are incorporated by reference with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR Part 51. All approved material is available for inspection either electronically at www.regulations.gov, in hard copy at the Water Docket, or from the sources indicated below. The Docket ID is EPA-HQ-OW-2008-0878. Hard copies of these documents may be viewed at the Water Docket in the EPA Docket Center, (EPA/DC) EPA West, Room 3334, 1301 Constitution Avenue, NW, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202)566-1744, and the telephone number for the Water Docket is (202)566-2426. Copyrighted materials are only available for viewing in hard copy. These documents are also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202)741-6030 or go to www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

1. American Public Health Association, 800 I Street, NW, Washington, DC 20001. Standard Methods for the Examination of Water and Wastewater, 20th edition (1998):

- Standard Methods 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” B.1, B.2, “Standard Total Coliform Fermentation Technique.”
- Standard Methods 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” D.1, D.2, “Presence-Absence (P-A) Coliform Test.”
- Standard Methods 9222, “Membrane Filter Technique for Members of the Coliform Group,” B, “Standard Total Coliform Membrane Filter Procedure.”
- Standard Methods 9222, “Membrane Filter Technique for Members of the Coliform Group,” C, “Delayed-Incubation Total Coliform Procedure.”
- Standard Methods 9223, “Enzyme Substrate Coliform Test,” B, “Enzyme Substrate Test,” Colilert and Colisure.
- Standard Methods 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” F.1, “*Escherichia coli* Procedure: EC-MUG Medium.”
- Standard Methods 9222, “Membrane Filter Technique for Members of the Coliform Group,” G.1c(2), “*Escherichia coli* Partition Method: EC Broth with MUG (EC-MUG).”
- Standard Methods 9222, “Membrane Filter Technique for Members of the Coliform Group,” G.1c(1), “*Escherichia coli* Partition Method: NA-MUG Medium.”

2. American Public Health Association, 800 I Street, NW, Washington, DC 20001. Standard Methods for the Examination of Water and Wastewater, 21st edition (2005):

- Standard Methods 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” B.1, B.2, “Standard Total Coliform Fermentation Technique.”
- Standard Methods 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” D.1, D.2, “Presence-Absence (P-A) Coliform Test.”
- Standard Methods 9221, “Membrane Filter Technique for Members of the Coliform Group,” B, “Standard Total Coliform Membrane Filter Procedure.”
- Standard Methods 9222, “Membrane Filter Technique for Members of the Coliform Group,” C, “Delayed-Incubation Total Coliform Procedure.”

- Standard Methods 9223, “Enzyme Substrate Coliform Test,” B, “Enzyme Substrate Test,” Colilert and Colisure.
 - Standard Methods 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” F.1, “*Escherichia coli* Procedure: EC-MUG Medium.”
 - Standard Methods 9222, “Membrane Filter Technique for Members of the Coliform Group,” G.1.c(2), “*Escherichia coli* Partition Method: EC Broth with MUG (EC-MUG).”
 - Standard Methods 9222, “Membrane Filter Technique for Members of the Coliform Group,” G.1.c(1), “*Escherichia coli* Partition Method: NA-MUG Medium.”
3. American Public Health Association, 800 I Street, NW, Washington, DC 20001. “Standard Methods Online” available at www.standardmethods.org:
 - Standard Methods Online 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group” (1999), B.1, B.2-99, B-06, “Standard Total Coliform Fermentation Technique.”
 - Standard Methods Online 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group” (1999), D.1, D.2-99, “Presence-Absence (P-A) Coliform Test.”
 - Standard Methods Online 9222, “Membrane Filter Technique for Members of the Coliform Group” (1997), B-97, “Standard Total Coliform Membrane Filter Procedure.”
 - Standard Methods Online 9222, “Membrane Filter Technique for Members of the Coliform Group” (1997), C-97, “Delayed-Incubation Total Coliform Procedure.”
 - Standard Methods Online 9223, “Enzyme Substrate Coliform Test” (1997), B-97, “Enzyme Substrate Test,” Colilert and Colisure.
 4. Charm Sciences, Inc., 659 Andover Street, Lawrence, MA 01843-1032; telephone (800)343-2170: E*Colite—“Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Drinking Water,” January 9, 1998.
 5. CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA 95403; telephone (800)878-7654: modified Colitag, ATP D05-0035—“Modified Colitag Test Method for the Simultaneous Detection of *E. coli* and other Total Coliforms in Water,” August 28, 2009.
 6. EMD Millipore (a division of Merck KGaA, Darmstadt, Germany), 290 Concord Road, Billerica, MA 01821; telephone (800)645-5476:
 - Chromocult—“Chromocult Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichia coli* for Finished Waters,” November 2000, Version 1.0.
 - ReadyCult—“ReadyCult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters,” January 2007, Version 1.1.
 7. EPA’s Water Resource Center (MC-4100T), 1200 Pennsylvania Avenue, NW, Washington, DC 20460; telephone (202)566-1729: EPA Method 1604, EPA 821-R-02-024—“EPA Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium),” September 2002, www.nemi.gov.
 8. Hach Company, P.O. Box 389, Loveland, CO 80539; telephone (800)604-3493: m-ColiBlue24—“Membrane Filtration Method m-ColiBlue24 Broth,” Revision 2, August 17, 1999.
 9. American Public Health Association, 800 I Street, NW, Washington, DC 20001. Standard Methods for the Examination of Water and Wastewater, 22nd edition (2012):
 - Standard Methods 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” B.1, B.2, “Standard Total Coliform Fermentation Technique.”
 - Standard Methods 9223, “Enzyme Substrate Coliform Test,” B, “Enzyme Substrate Test,” Colilert and Colisure.
 - Standard Methods 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” F.1, “*Escherichia coli* Procedure: EC-MUG Medium.”
 10. Veolia Water Solutions and Technologies, Suite 4697, Biosciences Complex, 116 Barrie Street, Kingston, Ontario, Canada K7L 3N6: Tecta EC/TC. “Presence/Absence Method for Simultaneous Detection of Total Coliforms and *Escherichia coli* in Drinking Water,” April 2014.
- (7) Laboratory certification. Systems must have all compliance samples required under this subrule analyzed by a laboratory certified by the department in accordance with 567—Chapter 83 to analyze

drinking water samples. The laboratory used by the system must be certified for each method and associated contaminant used for compliance monitoring analyses under this subrule.

c. Sampling plan.

(1) Written sampling plan required. Systems must collect total coliform samples according to the written sampling plan.

1. Systems must develop a written sampling plan that identifies sample locations and a sample collection schedule that are representative of water throughout the distribution system. Major elements of the plan shall include, but not be limited to, the following:

- Map of the distribution system served by the system;
- List of routine compliance sample locations for each sample period;
- List of repeat compliance sample locations for each routine compliance sample location;
- Any other sample locations necessary to meet the requirements of this subrule;
- Sample collection schedule;
- Proper sampling technique instructions;
- Log of samples taken; and
- For groundwater systems subject to 567—41.7(455B), triggered source water monitoring plan.

2. The system shall review the sampling plan every two years and update it as needed and shall retain the sampling plan on file at the facility. The plan must be made available to the department upon request and for review during sanitary surveys and must be revised by the system at the direction of the department.

3. Monitoring under this subrule may take place at a customer's premises, dedicated sampling station, or other designated compliance sampling location.

(2) Sampling schedule. Systems must collect routine samples at regular time intervals throughout the month. Systems that use only groundwater and serve 4,900 or fewer people, or regional water systems that use only groundwater and serve less than 121 miles of pipe, may collect all required routine samples on a single day if the samples are taken from different sites.

(3) Minimum number of required routine samples. Systems must take at least the minimum number of required routine samples even if the system has had an *E. coli* MCL violation or has exceeded the coliform treatment technique triggers in 41.2(1)“l.” Such samples must be designated as “routine” when submitted to the laboratory.

(4) Additional compliance monitoring samples. A system may conduct more compliance monitoring than is required to investigate potential problems in the distribution system and may use monitoring as a tool to assist in uncovering problems. A system may take more than the minimum number of required routine samples and must include the results when calculating whether the coliform treatment technique trigger in 41.2(1)“l”(1)“1” and “2” has been exceeded only if the samples are taken in accordance with the existing sampling plan and are representative of water throughout the distribution system. Such samples must be designated as “routine” when submitted to the laboratory.

(5) Repeat samples. Systems must identify repeat monitoring locations in the sampling plan. Repeat samples must be analyzed at the same laboratory as the corresponding original routine sample(s), unless written approval for use of a different laboratory is granted by the department. The system must collect at least one repeat sample from the sampling tap where the original routine total coliform-positive sample was taken, at least one repeat sample at a tap within five service connections upstream of the original sample location, and at least one repeat sample at a tap within five service connections downstream of the original sample location. Such samples must be designated as “repeat” when submitted to the laboratory.

1. If the sampling location of a total coliform-positive sample is at or within one service connection from the end of the distribution system, the system must still take all required repeat samples. However, the department may allow an alternative sampling location in lieu of one of the upstream or downstream sampling locations.

2. A groundwater system with two or more wells that is required to conduct triggered source water monitoring under subrule 41.7(3) must collect groundwater source sample(s) in addition to the required repeat samples.

3. A groundwater system with a single well that is required to conduct triggered source water monitoring may, with written department approval, collect one of its required repeat samples at the triggered source water sample monitoring location. The system must demonstrate to the department's satisfaction that the sampling plan remains representative of water quality in the distribution system. If approved, the sample result may be used to meet the requirements of subrule 41.7(3) and this subrule. If a repeat sample taken at the triggered source water monitoring location is *E. coli*-positive, the system has violated the *E. coli* MCL, and must also comply with the requirements for additional source water samples under 41.7(3) "a"(3).

4. The department may review, revise, and approve, as appropriate, repeat sampling proposed by the system under 41.2(1) "c"(5). The system must demonstrate that the sampling plan remains representative of the water quality in the distribution system.

(6) Special purpose samples. Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, must not be used to determine whether the coliform treatment technique trigger has been exceeded. Repeat samples are not considered special purpose samples and must be used to determine whether the coliform treatment technique trigger has been exceeded. Such samples must be designated as "special" when submitted to the laboratory and cannot be used for compliance.

(7) Residual disinfectant measurement. Any system adding a chemical disinfectant to the water must meet the requirements specified in 567—subparagraph 42.4(3) "b"(1). The minimum required residual disinfectant measurements are as follows, unless otherwise directed by the department in writing:

1. Groundwater systems. A system that uses only groundwater and adds a chemical disinfectant or provides water that contains a disinfectant must measure and record the free and total chlorine residual disinfectant concentration at least at the same points in the distribution system and at the same time as routine and repeat total coliform bacteria samples are collected, as specified in 41.2(1) "e" through 41.2(1) "j." The system shall report the residual disinfectant concentration to the laboratory with the bacteria sample and comply with the applicable reporting requirements of 567—subrule 42.4(3).

2. Surface water and influenced groundwater systems.

- Any surface water or IGW PWS must meet the requirements for minimum residual disinfectant entering the distribution system pursuant to 567—paragraph 43.5(4) "b"(2) "1"; and

- A system that uses surface water or IGW must comply with the requirements specified in 567—paragraph 43.5(4) "b"(2) "2" for daily distribution system residual disinfectant monitoring. The system must measure and record the free and total chlorine residual disinfectant concentration at least at the same points in the distribution system and at the same time as routine and repeat total coliform bacteria samples are collected, as specified in 41.2(1) "e" through 41.2(1) "j." The residual disinfectant measurements required as a part of this subrule may be used to satisfy the requirement in 567—paragraph 43.5(4) "b"(2) "2" on the day(s) when a routine or repeat total coliform bacteria sample(s) is collected, in lieu of separate samples. The system shall report the residual disinfectant concentration to the laboratory with the bacteria sample and comply with the applicable reporting requirements of 567—subrule 42.4(3).

d. *Invalidation of total coliform samples.* A total coliform-positive sample invalidated under this paragraph does not count toward meeting the minimum monitoring requirements of this subrule.

(1) The department may invalidate a total coliform-positive sample only if the following conditions are met:

1. The laboratory establishes that improper sample analysis caused the total coliform-positive result.

2. The department, on the basis of the results of the required repeat samples, determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. "Domestic or other non-distribution system plumbing problem" means a coliform contamination problem in a public water system with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken. The department cannot invalidate a sample on the basis of repeat sample results unless all repeat samples collected at the same tap as the original total coliform-positive sample are also total coliform-positive and all repeat samples collected at a location other than the original tap are total coliform-negative. The department cannot invalidate a total coliform-positive

sample on the basis of repeat samples if all the repeat samples are total coliform-negative or if the system has only one service connection.

3. The department has substantial grounds to believe that the total coliform-positive result is due to a circumstance or condition that does not reflect water quality in the distribution system. The system must still collect all repeat samples required under 41.2(1)“j” and use them to determine whether a coliform treatment technique trigger in 41.2(1)“l” has been exceeded.

The decision and supporting rationale for invalidating a total coliform-positive sample under 41.2(1)“d”(1) must be documented in writing, and approved and signed by the supervisor of the water supply operations section or water supply engineering section and the department official who recommended the decision. The department must make this document available to EPA and the public. The written documentation must state the specific cause of the total coliform-positive sample and what action the system has taken, or will take, to correct this problem. The department may not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative or because of poor sampling technique.

(2) Laboratory invalidation. A laboratory must invalidate a total coliform sample (unless total coliforms are detected, in which case the sample is valid) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., the multiple-tube fermentation technique), produces a turbid culture in the absence of an acid reaction in the presence-absence (P-A) coliform test, or exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g., membrane filter technique). If a laboratory invalidates a sample because of such interference, the system must collect another sample from the same location as that of the original sample within 24 hours of being notified of the interference problem and must have the sample analyzed for the presence of total coliforms. The system must continue to resample within 24 hours and have the samples analyzed until a valid result is obtained. The department may waive the 24-hour time limit on a case-by-case basis.

e. Routine monitoring for specific groundwater noncommunity water systems serving 1,000 or fewer people. This paragraph applies to noncommunity water systems using only groundwater (not IGW) as a source and serving 1,000 or fewer people. Groundwater noncommunity water systems that serve schools, preschools, and child care facilities, and all public water systems owned or managed by state agencies, such as parks and rest areas, must monitor at the same frequency as a like-sized community water system, in accordance with 41.2(1)“f,” 41.2(1)“g,” or 41.2(1)“h.”

(1) General. Following any total coliform-positive sample taken under 41.2(1)“e,” systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in 41.2(1)“j.” Once all monitoring required by 41.2(1)“e” and 41.2(1)“j” for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in 41.2(1)“l” have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by 41.2(1)“l.”

(2) Monitoring frequency for total coliforms. Systems must monitor each calendar quarter that the system provides water to the public, with the following exceptions:

1. A system on quarterly monitoring that experiences any of the following events must begin monthly monitoring in the month following the event. The system must continue on monthly monitoring until the system meets the requirements for returning to quarterly monitoring.

- The system has an *E. coli* MCL violation.
- The system triggers one Level 2 assessment under the provisions of 41.2(1)“l” in a rolling 12-month period.
- The system triggers two Level 1 assessments under the provisions of 41.2(1)“l” in a rolling 12-month period.
- The system has a coliform treatment technique violation.
- The system has two coliform monitoring violations in a rolling 12-month period.
- The system has one monitoring coliform violation and one Level 1 assessment under the provisions of 41.2(1)“l” in a rolling 12-month period.

2. A system on monthly monitoring for reasons other than those identified in 41.2(1)“e”(2)“1” is not considered to be on increased monitoring for the purposes of 41.2(1).

3. Seasonal systems must sample each month in which they are in operation. All seasonal systems must also demonstrate completion of a department-approved start-up procedure before serving water to the public, which includes a requirement for a coliform-negative start-up sample.

(3) Evaluation of sampling frequency during a sanitary survey. During each sanitary survey, the department must evaluate the status of the system including the distribution system, to determine whether the system is on an appropriate monitoring schedule. The department may modify the system's monitoring schedule, as necessary, or may allow the system to stay on its existing monitoring schedule, consistent with the provisions of 41.2(1) "e."

(4) Requirements for returning from monthly to quarterly sampling frequency for nonseasonal noncommunity systems. The department may reduce the monitoring frequency for a nonseasonal noncommunity system on monthly monitoring triggered under 41.2(1) "e"(2) "1" to quarterly monitoring if the system meets the following criteria. For the purposes of 41.2(1) "e"(4), "protected water source" means the well meets separation distances from sources of microbial contamination pursuant to 567—subrule 43.3(7), Table A; or the system has 4-log virus inactivation treatment that is approved by the department and is in continuous usage.

1. Within the previous 12 months, the system must have a completed sanitary survey or voluntary Level 2 assessment, be free of sanitary defects, and have a protected water source;

2. The system must have a clean compliance history for a minimum of the previous 12 months; and

3. The department must review the approved sampling plan, which must designate the time period(s) for monitoring based on site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). The system must collect compliance samples during these time periods.

(5) Additional routine monitoring for systems on quarterly sampling in the month following a total coliform-positive routine sample. Systems collecting samples on a quarterly frequency must conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger). Systems must collect at least three routine samples during the next month. Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform treatment technique trigger calculations under 41.2(1) "l."

f. Routine monitoring for groundwater community water systems serving 1,000 or fewer people. This paragraph applies to community water systems using only groundwater (not IGW) as a source and serving 1,000 or fewer people.

(1) General. Following any total coliform-positive sample taken under 41.2(1) "f," systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in 41.2(1) "j." Once all monitoring required by 41.2(1) "f" and 41.2(1) "j" for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in 41.2(1) "l" have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by 41.2(1) "l."

(2) Monitoring frequency for total coliforms. The routine monitoring frequency for total coliforms is one sample per month.

g. Routine monitoring requirements for SW/IGW public water systems serving 1,000 or fewer people. This paragraph applies to all public water supply systems serving 1,000 or fewer people that use surface water/influenced groundwater sources, including consecutive systems.

(1) General. Following any total coliform-positive sample taken under 41.2(1) "g," systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in 41.2(1) "j." Once all monitoring required by 41.2(1) "g" and 41.2(1) "j" for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in 41.2(1) "l" have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by 41.2(1) "l."

(2) Monitoring frequency for total coliforms. The routine monitoring frequency for total coliforms is one sample per month. Systems may not reduce monitoring frequency.

(3) Seasonal systems must sample each month in which they are in operation, and the monitoring frequency cannot be reduced. All seasonal systems must also demonstrate completion of a department-

approved start-up procedure before serving water to the public, which includes a requirement for a coliform-negative start-up sample.

h. Routine monitoring requirements for public water systems serving more than 1,000 people. The provisions of this paragraph apply to all public water systems serving more than 1,000 people except regional water systems. The requirements for regional water systems are listed in 41.2(1) “i.”

(1) General. Following any total coliform-positive sample taken under 41.2(1) “h,” systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in 41.2(1) “j.” Once all monitoring required by 41.2(1) “h” and 41.2(1) “l” for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in 41.2(1) “l” have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by 41.2(1) “l.”

(2) Monitoring frequency for total coliforms. The routine monitoring frequency for total coliforms is based upon the population served by the system, as follows:

Population Served	Minimum Number of Routine Samples per Month
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300

(3) Seasonal systems must sample each month in which they are in operation, and the monitoring frequency cannot be reduced. All seasonal systems must also demonstrate completion of a department-approved start-up procedure before serving water to the public, which includes a requirement for a coliform-negative start-up sample.

(4) Reduced monitoring. Community systems may not reduce the number of required routine samples.

(5) Increased monitoring. If the department, on the basis of a sanitary survey or monitoring results history, determines that some greater frequency of monitoring is more appropriate, that frequency shall be the frequency required under these rules. The increased frequency shall be confirmed or changed on the basis of subsequent surveys.

i. Routine monitoring requirements for regional public water systems. The provisions of 41.2(1)“i” apply to all regional water systems. The supplier of water for a regional water system as defined in 567—40.2(455B) shall sample for coliform bacteria at a frequency based upon the miles of pipe in its distribution system.

(1) General. Following any total coliform-positive sample taken under 41.2(1)“i,” systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in 41.2(1)“j.” Once all monitoring required by 41.2(1)“i” and 41.2(1)“j” for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in 41.2(1)“l” have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by 41.2(1)“l.”

(2) Monitoring frequency for total coliforms. The routine monitoring frequency for total coliforms is based upon the miles of pipe in the system’s distribution system, as indicated in the following chart. In no case shall the sampling frequency for a regional water system be less than as set forth in 41.2(1)“h” based upon the population equivalent served. The following chart represents sampling frequency per miles of pipe in the distribution system and is determined by calculating one-half the square root of the miles of pipe.

Miles of Pipe	Minimum Number of Routine Samples per Month
0 – 9	1
10 – 25	2
26 – 49	3
50 – 81	4
82 – 121	5
122 – 169	6
170 – 225	7
226 – 289	8
290 – 361	9
362 – 441	10
442 – 529	11
530 – 625	12
626 – 729	13
730 – 841	14
842 – 961	15
962 – 1,089	16
1,090 – 1,225	17
1,226 – 1,364	18
1,365 – 1,521	19
1,522 – 1,681	20
1,682 – 1,849	21
1,850 – 2,025	22
2,026 – 2,209	23
2,210 – 2,401	24
2,402 – 2,601	25
2,602 – 2,809	26
2,810 – 3,025	27
3,026 – 3,249	28
3,250 – 3,481	29
3,482 – 3,721	30
3,722 – 3,969	31
3,970 – 4,225	32

Miles of Pipe	Minimum Number of Routine Samples per Month
4,226 – 4,489	33
4,490 – 4,671	34
4,672 – 5,041	35
5,042 – 5,329	36
5,330 – 5,625	37
5,626 – 5,929	38
5,930 – 6,241	39
6,242 – 6,561	40
6,562 and greater	41

(3) Reduced monitoring. Regional water systems may not reduce the number of required routine samples.

(4) Increased monitoring. If the department, on the basis of a sanitary survey or monitoring results history, determines that some greater frequency of monitoring is more appropriate, that frequency shall be the frequency required under these rules. The increased frequency shall be confirmed or changed on the basis of subsequent surveys.

j. Repeat monitoring. If a routine sample taken under 41.2(1)“e” through 41.2(1)“i” is total coliform-positive, the system must collect a set of repeat samples. The department cannot waive the requirement for a system to collect repeat samples.

(1) The system must collect no fewer than three repeat samples for each total coliform-positive routine sample found.

(2) The system must collect the repeat samples within 24 hours of being notified of the positive routine sample result. The department may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. In the case of an extension, the department must specify how much time the system has to collect the repeat samples.

(3) The system must collect all repeat samples on the same day, except that the department may allow a system with a single service connection to collect the required set of repeat samples over a three-day period. “System with a single service connection” means a system which supplies drinking water to consumers through a single service line.

(4) The system must collect an additional set of repeat samples in the manner specified in 41.2(1)“j”(1) to (3) if one or more repeat samples in the current set of repeat samples is total coliform-positive. The system must collect the additional set of repeat samples within 24 hours of being notified of the positive result, unless the department extends the limit as provided in 41.2(1)“j”(2). The system must continue to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in 41.2(1)“l” has been exceeded as a result of a total coliform-positive repeat sample and notifies the department. If a trigger identified in 41.2(1)“l” is exceeded as a result of a total coliform-positive routine sample, systems are required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.

(5) Results of all routine and repeat samples taken under 41.2(1)“e” through 41.2(1)“i” that are not invalidated by the department must be used to determine whether a coliform treatment technique trigger specified in 41.2(1)“l” has been exceeded.

k. E. coli testing requirements.

(1) If any routine or repeat sample is total coliform-positive, the system must analyze that total coliform-positive culture medium to determine the presence of *E. coli*. If *E. coli* are present, the system must notify the department by the end of the same day when the system is notified of the test result. If the notification is outside of the department’s routine office hours, the system shall call the department’s Environmental Emergency Reporting Hotline at (515)725-8694.

(2) The department has the discretion to allow a system, on a case-by-case basis, to forgo *E. coli* testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is *E. coli*-positive. Accordingly, the system must notify the department as specified in 41.2(1)“k”(1), and the provisions of 41.2(1)“a” apply.

l. Coliform treatment technique triggers. Systems must conduct assessments in accordance with 41.2(1)“m” after exceeding any treatment technique trigger.

(1) Level 1 treatment technique triggers.

1. For systems taking 40 or more samples per month, the system exceeds 5.0 percent total coliform-positive samples for the month.

2. For systems taking fewer than 40 samples per month, the system has two or more total coliform-positive samples in the same month.

3. The system fails to take every required repeat sample after any single total coliform-positive sample.

(2) Level 2 treatment technique triggers.

1. An *E. coli* MCL violation, as specified in 41.2(1)“p”(1).

2. A second Level 1 trigger as defined in 41.2(1)“l”(1) within a rolling 12-month period, unless the department has determined a likely reason that the samples that caused the first Level 1 treatment technique trigger were total coliform-positive and has established that the system has corrected the problem.

m. Assessment requirements. Systems must ensure that Level 1 and 2 assessments are conducted in order to identify the possible presence of sanitary defects and defects in distribution system coliform monitoring practices. Level 1 assessments may be conducted by the system owner or operator. Level 2 assessments must be conducted by the department with the assistance of the system owner or operator.

(1) General. When conducting assessments, systems must ensure that the assessor evaluates minimum elements that include review and identification of inadequacies in sample sites; sampling protocol; sample processing; atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., small groundwater systems); and existing water quality monitoring data. The system must conduct the assessment consistent with any department directives that tailor specific assessment elements with respect to the size and type of the system, and the size type, and characteristics of the distribution system.

(2) Level 1 assessment. A system must conduct a Level 1 assessment consistent with the department requirements if the system exceeds one of the treatment technique triggers in 41.2(1)“l”(1).

1. The system must complete the Level 1 assessment as soon as practical after any trigger in 41.2(1)“l”(1). In the completed assessment form, the system must describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed. The system may also note on the assessment form that no sanitary defects were identified. The system must submit the completed Level 1 assessment form to the department within 30 days after the system learns that it has exceeded a trigger.

2. If the department reviews the completed Level 1 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the department must consult with the system. If the department requires revisions after consultation, the system must submit a revised assessment form to the department on an agreed-upon schedule not to exceed 30 days from the date of the consultation.

3. Upon completion and submission of the assessment form by the system, the department must determine if the system has identified the likely cause for the Level 1 trigger and, if so, establish that the system has corrected the problem or has included a schedule acceptable to the department for correction of the problem.

(3) Level 2 assessment. A system must ensure that a Level 2 assessment is conducted if the system exceeds one of the treatment technique triggers in 41.2(1)“l”(2). The system must comply with any expedited actions or additional actions required by the department in the case of an *E. coli* MCL violation.

1. The system must ensure that a Level 2 assessment is completed by the department as soon as practical after any trigger in 41.2(1)“l”(2). The system must submit a completed Level 2 assessment form to the department within 30 days after the system learns that it has exceeded a trigger. The assessment form must contain a description of the sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed. It may also be noted on the assessment form that no sanitary defects were identified.

2. If the department reviews the completed Level 2 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the department must consult with the system. If the department requires revisions after consultation, the system must submit a revised assessment form to the department on an agreed-upon schedule not to exceed 30 days.

3. Upon completion and submission of the assessment form by the system, the department must determine if the system has identified the likely cause for the Level 2 trigger and determine whether the system has corrected the problem or has included a schedule acceptable to the department for correction of the problem.

(4) Corrective actions. A system must correct sanitary defects found through either a Level 1 or 2 assessment conducted under 41.2(1)“l.” For corrections not completed by the time of submission of the assessment form, the system must complete the corrective action(s) in compliance with a timetable approved by the department in consultation with the system. The system must notify the department when each scheduled corrective action is completed.

(5) Consultation. At any time during the assessment or corrective actions phase, either the water system or the department may request a consultation with the other party to determine the appropriate actions to be taken. The system may consult with the department on all relevant information that may impact on its ability to comply with a requirement of this subrule, including the method of accomplishment, an appropriate time frame, and other relevant information.

n. Reporting requirements.

(1) *E. coli.*

1. The system must notify the department by the end of the same day when the system learns of an *E. coli*-positive violation. If the notification is outside of the department’s routine office hours, the system shall call the department’s Environmental Emergency Reporting Hotline at (515)725-8694.

2. The system must notify the department by the end of the same day when the system learns of the *E. coli*-positive routine sample. If the notification is outside of the department’s routine office hours, the system shall call the department’s Environmental Emergency Reporting Hotline at (515)725-8694.

(2) A system that has violated the treatment technique for coliforms in 41.2(1)“l” must report the violation to the department no later than the end of the next business day after it learns of the violation, and must notify the public in accordance with rule 567—42.1(455B).

(3) A system required to conduct an assessment under the provisions of 41.2(1)“l” must submit the assessment report within 30 days. The system must notify the department in accordance with 41.2(1)“m”(4) when each scheduled corrective action is completed for any corrections that were not completed by the time of submission of the assessment form.

(4) A system that has failed to comply with a coliform monitoring requirement must report the monitoring violation to the department within 10 days after the system discovers the violation, and must notify the public in accordance with rule 567—42.1(455B).

(5) A seasonal system must certify, prior to serving water to the public, that it has complied with the department-approved start-up procedure.

o. Record-keeping requirements. Additional record-keeping requirements are listed in 567—paragraph 42.5(1)“j.”

p. Violations.

(1) *E. coli* MCL violation. A system is in violation of the MCL for *E. coli* when any of the following occurs, and must conduct public notice in accordance with rule 567—42.1(455B):

1. The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample.

2. The system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample.

3. The system fails to take all required repeat samples following an *E. coli*-positive routine sample.

4. The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.

(2) Treatment technique violation. A system is in violation of a treatment technique trigger when any of the following occurs, and must conduct public notice in accordance with rule 567—42.1(455B):

1. A system exceeds a treatment technique trigger specified in 41.2(1) “l” and then fails to conduct the required assessment within the time frame specified in 41.2(1) “m.”

2. A system exceeds a treatment technique trigger specified in 41.2(1) “l” and then fails to conduct the required corrective actions within the time frame specified in 41.2(1) “m”(4).

3. A seasonal system fails to complete a department-approved start-up procedure prior to serving water to the public, including collection of a finished water sample that tests total coliform-negative.

(3) Monitoring violation. A system is in violation of monitoring requirements when any of the following occurs, and must conduct public notice in accordance with rule 567—42.1(455B):

1. Failure to take every required routine or additional routine sample in a compliance period.

2. Failure to analyze for *E. coli* following a total coliform-positive routine sample.

(4) Reporting violation. A system is in violation of reporting requirements when any of the following occurs, and must conduct public notice in accordance with rule 567—42.1(455B):

1. Failure to submit a monitoring report after a system properly conducts monitoring in a timely manner.

2. Failure to submit a completed assessment form after a system properly conducts an assessment in a timely manner.

3. Failure to notify the department following an *E. coli*-positive sample as required by 41.2(1) “k”(1) in a timely manner.

4. Failure to submit the certification of completion of department-approved start-up procedure by a seasonal system.

q. *Best available technology (BAT)*. The U.S. Environmental Protection Agency (EPA) identifies, and the department has adopted, the following as the best technology, treatment techniques, or other means available for all systems in achieving compliance with the maximum contaminant level for *E. coli* in 41.2(1) “a.” The following is also identified as affordable technology, treatment techniques, or other means available to systems serving 10,000 or fewer people for achieving compliance with the *E. coli* maximum contaminant level.

(1) Well protection. Protection of wells from fecal contamination by appropriate placement and construction.

(2) Disinfectant residual. Maintenance of a disinfectant residual throughout the distribution system.

(3) Distribution system maintenance. Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, cross-connection control, and continual maintenance of a minimum positive water pressure of 20 psi in all parts of the distribution system at all times.

(4) Filtration or disinfection. Filtration and disinfection of surface water or groundwater under the direct influence of surface water in accordance with 567—43.5(455B), 567—43.9(455B), and 567—43.10(455B), or disinfection of groundwater in accordance with rule 567—41.7(455B) using strong oxidants such as, but not limited to, chlorine, chlorine dioxide, or ozone.

(5) Wellhead protection program. For groundwater systems, compliance with the requirements of the department’s wellhead protection program.

41.2(2) *Giardia*. Reserved.

41.2(3) *Heterotrophic plate count bacteria (HPC)*.

a. *Applicability*. All public water systems that use a surface water source or source under the direct influence of surface water must provide treatment consisting of disinfection, as specified in 567—subrule 43.5(2), and filtration treatment which complies with 567—subrule 43.5(3). The heterotrophic plate count is an alternate method to demonstrate a detectable disinfectant residual in accordance with 567—paragraph 43.5(2) “d.”

- b. *Maximum contaminant levels.* Reserved.
- c. *Monitoring requirements.* Reserved.
- d. *BAT.* Reserved.
- e. *Analytical methodology.* Public water systems shall conduct heterotrophic plate count bacteria analysis in accordance with 567—subrule 43.5(2) and the following analytical method. Measurements for heterotrophic plate count bacteria must be conducted by a laboratory certified by the department to do such analysis, when heterotrophic plate count bacteria are being measured in lieu of a detectable residual disinfectant pursuant to 567—paragraph 43.5(2)“d.” In addition, the time from sample collection to initiation of analysis may not exceed eight hours, and the systems must hold the samples below 10 degrees Celsius during transit to the laboratory.

(1) Method. The heterotrophic plate count shall be performed in accordance with one of the following methods:

1. Method 9215B Pour Plate Method, Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992, 19th edition, 1995, 20th edition, 1998, 21st edition, 2005, and 22nd edition, 2012. The cited method in any of these editions may be used. Standard Methods Online method 9215 B-04 may be used.

2. SimPlate Method, “IDEXX SimPlate TM HPC Test Method for Heterotrophs in Water,” November 2000, IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, ME 04092, telephone (800)321-0207.

(2) Reporting. The public water system shall report the results of heterotrophic plate count in accordance with 567—subparagraph 42.4(3)“c”(2).

41.2(4) *Macroscopic organisms and algae.*

a. *Applicability.* These rules apply to both community and noncommunity public water supply systems using surface water or groundwater under direct influence of surface water as defined by 567—subrule 43.5(1).

b. *Maximum contaminant levels (MCLs) for macroscopic organisms and algae.* Finished water shall be free of any macroscopic organisms such as plankton, worms, or cysts. The finished water algal cell count shall not exceed 500 organisms per milliliter or 10 percent of the total cells found in the raw water, whichever is greater.

c. *Monitoring requirements.* Reserved.

d. *BAT.* Reserved.

e. *Analytical methodology.* Measurement of the algal cells shall be in accordance with Method 10200F: Phytoplankton Counting Techniques, Standard Methods for the Examination of Water and Wastewater, 18th edition, pp. 10-13 to 10-16. Such measurement shall be required only when the department determines on the basis of complaints or otherwise that excessive algal cells may be present.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—41.3(455B) Maximum contaminant levels (MCLs) and monitoring requirements for inorganic contaminants other than lead or copper.

41.3(1) *MCLs and other requirements for inorganic contaminants.*

a. *Applicability.* Maximum contaminant levels for inorganic contaminants (IOCs) specified in 41.3(1)“b” apply to community water systems and nontransient noncommunity water systems as specified herein. The maximum contaminant level specified for fluoride applies only to community water systems and nontransient noncommunity systems which primarily serve children (child care facilities and schools). The maximum contaminant levels specified for nitrate, nitrite, and total nitrate and nitrite apply to community, nontransient noncommunity, and transient noncommunity water systems. At the discretion of the department, nitrate levels not to exceed 20.0 mg/L may be allowed in a noncommunity water system if the supplier of water demonstrates to the satisfaction of the department that:

(1) Such water will not be available to children under 6 months of age; and

(2) The system is meeting the public notification requirements of rule 567—42.1(455B), including continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effects of exposure; and

(3) The following public health authorities will be notified annually of nitrate levels that exceed 10 mg/L, in addition to the reporting requirements of 567—Chapters 41 and 42: county board of health,

county health department, county sanitarian, county public health administrator, and Iowa department of public health; and

(4) No adverse health effects shall result.

The requirements also contain monitoring requirements, best available technology (BAT) identification, and analytical method requirements pursuant to 41.3(1)“c,” and 567—paragraphs 41.3(1)“e” and 43.3(10)“b,” respectively.

b. *Maximum contaminant levels for inorganic chemicals (IOCs).*

(1) IOC MCLs. The following table specifies the MCLs for IOCs:

Contaminant	EPA Contaminant Code	Maximum Contaminant Level (mg/L)
Antimony	1074	0.006
Arsenic*	1005	0.010
Asbestos	1094	7 million fibers/liter (longer than 10 micrometers in length)
Barium	1010	2
Beryllium	1075	0.004
Cadmium	1015	0.005
Chromium	1020	0.1
Cyanide (as free Cyanide)	1024	0.2
Fluoride**	1025	4.0
Mercury	1035	0.002
Nitrate	1040	10 (as nitrogen)
Nitrite	1041	1.0 (as nitrogen)
Total Nitrate and Nitrite	1038	10 (as nitrogen)
Selenium	1045	0.05
Thallium	1085	0.002

*The arsenic MCL changed from 0.05 mg/L to 0.010 mg/L on January 23, 2006.

**The recommended fluoride level is 0.7 milligrams per liter as published by the U.S. Department of Health and Human Services, Public Health Service (July-August 2015). At this optimum level in drinking water, fluoride has been shown to have beneficial effects in reducing the occurrence of tooth decay.

(2) Compliance calculations. Compliance with 41.3(1)“b”(1) shall be determined based on the analytical result(s) obtained at each source/entry point. When the department requires a system to collect nitrate or nitrite samples in its distribution system, compliance with 41.3(1)“b”(1) shall also be determined based on the analytical result(s) obtained at each discrete sampling point in the distribution system. Arsenic sampling results must be reported to the nearest 0.001 mg/L.

1. Sampling frequencies greater than annual (e.g., monthly or quarterly). For public water supply systems which are conducting monitoring at a frequency greater than annual, compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, selenium, and thallium is determined by a running annual average at any sampling point. If the average at any sampling point is greater than the MCL, then the system is out of compliance. If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately. Any sample below the method detection limit shall be calculated at zero for the purpose of determining the annual average. If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

2. Sampling frequencies of annual or less. For public water supply systems which are monitoring annually, or less frequently, the system is out of compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, selenium, and thallium if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is required by the department, it must be collected as soon as possible from the same sampling location, but not to exceed two weeks, and the determination of compliance will be based on the average of the two samples. If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

3. Compliance calculations for nitrate and nitrite. Compliance with the maximum contaminant levels for nitrate and nitrite is determined based on one sample if the level of these contaminants is below the MCLs. If the level of nitrate or nitrite exceeds the MCLs in the initial sample, a confirmation sample may be required in accordance with 41.3(1) "c"(7)"2," and compliance shall be determined based on the average of the initial and confirmation samples.

(3) Additional requirements. The department may assign additional requirements as deemed necessary to protect the public health, including public notification requirements and earlier compliance dates than indicated in rule. When a system is not in compliance with an MCL as determined in subparagraph 41.3(1) "b"(2), the supplier of the water shall notify the department according to 567—subrule 42.4(1) and give notice to the public according to 567—42.1(455B).

c. Inorganic chemicals—monitoring requirements.

(1) Routine IOC monitoring (excluding asbestos, nitrate, and nitrite). Community public water supply systems and nontransient noncommunity water systems shall conduct monitoring to determine compliance with the MCLs specified in 41.3(1) "b" in accordance with this subrule. Transient noncommunity water systems shall conduct monitoring to determine compliance with the nitrate and nitrite maximum contaminant levels in 41.3(1) "b" as required by 41.3(1) "c"(5) and (6). All new systems or systems that use a new source of water must demonstrate compliance with the MCLs specified in 41.3(1) "b" within a period of time specified by the department. The system must also comply with the initial sampling frequencies specified by the department to ensure the system can demonstrate compliance with the MCLs. Routine and increased monitoring frequencies shall be conducted in accordance with the requirements in paragraph 41.3(1) "c." A source of water that is determined by the department to be a new source/entry point is considered to be a new source for the purposes of this rule.

(2) Department designated sampling schedules: Each public water system shall monitor at the time designated by the department during each compliance period. The monitoring protocol is as follows:

1. Groundwater sampling points. Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a source/entry point) beginning in the compliance period starting January 1, 1993. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

2. Surface water sampling points. Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a source/entry point) beginning in the compliance period starting January 1, 1993. (For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.) The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

3. Multiple sources. If a public water supply system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

4. Composite sampling. The department may reduce the total number of samples which must be analyzed by the use of compositing. In systems serving less than or equal to 3,300 persons, composite samples from a maximum of five samples are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must be done in the laboratory. If the concentration in the composite sample is greater than or equal to one-fifth of the MCL of any inorganic chemical, then a follow-up sample must be taken within 14 days at each sampling point included in the composite. These samples must be analyzed for the contaminants which exceeded one-fifth of the MCL in the composite sample. If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use these duplicates instead of resampling, provided the holding time of the duplicate samples is not exceeded. The duplicate must be analyzed and the results reported to the department within 14 days after completing analysis of the composite sample. If the population served by the system is greater than 3,300 persons, then compositing may only be permitted by the department as

sampling points within a single system. In systems serving less than or equal to 3,300 persons, the department may permit compositing among different systems provided the five-sample limit is maintained. Detection limits for each inorganic contaminant analytical method are contained in 41.3(1)“e”(1).

(3) Asbestos routine and repeat monitoring frequency. The frequency of monitoring conducted to determine compliance with the maximum contaminant level for asbestos specified in 41.3(1)“b” shall be conducted as follows:

1. Initial sampling frequency. Each community and nontransient noncommunity water system is required to monitor for asbestos during the first three-year compliance period of each nine-year compliance cycle beginning in the compliance period starting January 1, 1993.

2. Sampling during waiver. If the public water supply system believes it is not vulnerable to either asbestos contamination in its source water or due to corrosion of asbestos-cement pipe, or both, it may apply for a waiver of the monitoring requirement in 41.3(1)“c”(3)“1.” If the department grants the waiver, the system is not required to monitor.

3. Bases of an asbestos waiver. The department may grant a waiver based on a consideration of potential asbestos contamination of the water source, the use of asbestos-cement pipe for finished water distribution, and the corrosive nature of the water.

4. Effect of an asbestos waiver. A waiver remains in effect until the completion of the three-year compliance period. Systems not receiving a waiver must monitor in accordance with 41.3(1)“c”(3)“1.”

5. Distribution system vulnerability for asbestos. A public water supply system vulnerable to asbestos contamination due solely to corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

6. Source water vulnerability for asbestos. A public water supply system vulnerable to asbestos contamination due solely to source water shall monitor in accordance with the provision of 41.3(1)“c”(2).

7. Combined asbestos vulnerability. A public water supply system vulnerable to asbestos contamination due both to its source water supply and corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

8. Exceedance of the asbestos MCL. A public water supply system which exceeds the maximum contaminant levels as determined in 41.3(1)“b” shall monitor quarterly beginning in the next quarter after the violation occurred.

9. Asbestos reliably and consistently below the MCL. The department may decrease the quarterly monitoring requirement to the frequency specified in 41.3(1)“c”(3)“1” provided the system is reliably and consistently below the maximum contaminant level. In no case can the department make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface (or combined surface/ground) water system takes a minimum of four quarterly samples.

10. Grandfathered asbestos data. If monitoring data collected after January 1, 1990, are generally consistent with the requirements of 41.3(1)“c”(3), then the department may allow public water supply systems to use that data to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

(4) Monitoring frequency for other IOCs. The frequency of monitoring conducted to determine compliance with the maximum contaminant levels in 41.3(1)“b” for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, selenium, and thallium shall be as follows:

1. IOCs sampling frequency. Groundwater systems shall take one sample at each sampling point once every three years. Surface water systems (or combined surface/groundwater systems) shall take one sample annually at each sampling point.

2. IOC sampling waiver. The public water supply system may apply for a waiver from the monitoring frequencies specified in 41.3(1)“c”(4)“1.”

3. IOC sampling during a waiver. A condition of the waiver shall require that a public water supply system shall take a minimum of one sample while the waiver is effective. The term during which the waiver is effective shall not exceed one compliance cycle (i.e., nine years).

4. Bases of an IOC waiver and grandfathered data. The department may grant a waiver provided surface water systems have monitored annually for at least three years and groundwater systems have

conducted a minimum of three rounds of monitoring. (At least one sample shall have been taken since January 1, 1990.) Both surface and groundwater systems shall demonstrate that all previous analytical results were less than the maximum contaminant level. Systems that use a new water source are not eligible for a waiver until three rounds of monitoring from the new source have been completed. Systems may be granted a waiver for monitoring of cyanide, provided that the department determines that the system is not vulnerable due to lack of any industrial source of cyanide.

5. Bases of the IOC sampling frequency during a waiver. In determining the appropriate reduced monitoring frequency, the department will consider: reported concentrations from all previous monitoring; the degree of variation in reported concentrations; and other factors which may affect contaminant concentrations such as changes in groundwater pumping rates, changes in the system's configuration, changes in the system's operating procedures, or changes in stream flows or characteristics.

6. Effect of an IOC waiver. A decision to grant a waiver shall be made in writing and shall include the basis for the determination. The determination may be initiated by the department or upon an application by the public water supply system. The public water supply system shall specify the basis for its request. The department may review and, where appropriate, revise its determination of the appropriate monitoring frequency when the system submits new monitoring data or when other data relevant to the system's appropriate monitoring frequency become available.

7. Exceedance of an IOC MCL. Public water supply systems which exceed the maximum contaminant levels as calculated in 41.3(1) "b" shall monitor quarterly beginning in the next quarter after the violation occurred.

8. IOCs reliably and consistently below the MCL. The department may decrease the quarterly monitoring requirement to the frequencies specified in 41.3(1) "c"(4) "1" and "3" provided it has determined that the public water supply system is reliably and consistently below the maximum contaminant level. In no case can the department make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

(5) Routine and repeat monitoring frequency for nitrates. All public water supply systems (community; nontransient noncommunity; and transient noncommunity systems) shall monitor to determine compliance with the maximum contaminant level for nitrate in 41.3(1) "b."

1. Initial nitrate sampling. Community and nontransient noncommunity water systems served by groundwater systems shall monitor annually beginning January 1, 1993; systems served by surface water shall monitor quarterly beginning January 1, 1993. Transient noncommunity water systems shall monitor annually beginning January 1, 1993.

2. Groundwater repeat nitrate sampling frequency. For community and noncommunity water systems, the repeat monitoring frequency for groundwater systems shall be:

- Quarterly for at least one year following any one sample in which the concentration is greater than or equal to 5.0 mg/L as N. The department may allow a groundwater system to reduce the sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than 5.0 mg/L as N.

- Monthly for at least one year following any one sample in which the concentration is greater than or equal to 10.0 mg/L as N.

3. Surface water repeat nitrate sampling frequency. For community and noncommunity water systems, the department may allow a surface water system to reduce the sampling frequency to:

- Annually if all analytical results from four consecutive quarters are less than 5.0 mg/L as N.
- Quarterly for at least one year following any one sample in which the concentration is greater than or equal to 5.0 mg/L as N. The department may allow a surface water system to reduce the sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than 5.0 mg/L as N.

- Monthly for at least one year following any nitrate MCL exceedance.

4. Scheduling annual nitrate repeat samples. After the initial round of quarterly sampling is completed, each community and nontransient noncommunity system which is monitoring annually shall take subsequent samples during the quarter(s) which previously resulted in the highest analytical result.

(6) Routine and repeat monitoring frequency for nitrite. All public water supply systems (community; nontransient noncommunity; and transient noncommunity systems) shall monitor to determine compliance with the maximum contaminant level for nitrite in 41.3(1)“b.”

1. Initial nitrite sampling. All public water systems shall take one sample at each sampling point in the compliance period beginning January 1, 1993, and ending December 31, 1995.

2. Nitrite repeat monitoring. After the initial sample, systems where an analytical result for nitrite is less than 0.50 mg/L as N shall monitor at the frequency specified by the department.

3. Nitrite increased monitoring. For community, nontransient noncommunity, and transient noncommunity water systems, the repeat monitoring frequency for any water system shall be:

- Quarterly for at least one year following any one sample in which the concentration is greater than or equal to 0.50 mg/L as N. The department may allow a system to reduce the sampling frequency to annually after determining the system is reliably and consistently less than 0.50 mg/L.

- Monthly for at least one year following any nitrite MCL exceedance.

4. Scheduling of annual nitrite repeat samples. Systems which are monitoring annually shall take each subsequent sample during the quarter(s) which previously resulted in the highest analytical result.

(7) Confirmation sampling.

1. Deadline for IOCs confirmation samples. Where the results of an analysis for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium indicate an exceedance of the maximum contaminant level, the department may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point.

2. Deadline for nitrate and nitrite confirmation samples. Where nitrate or nitrite sampling results indicate an exceedance of the maximum contaminant level and the sampling frequency is quarterly or annual, the system shall take a confirmation sample within 24 hours of the system's receipt of notification of the analytical results of the first sample. Public water supply systems unable to comply with the 24-hour sampling requirement must immediately notify the consumers served by the area served by the public water system in accordance with 567—42.1(455B) Tier 1 public notice and complete an analysis of a confirmation sample within two weeks of notification of the analytical results of the first sample. Where the sampling frequency is monthly, a confirmation sample will not be used to determine compliance with the MCL.

3. Rescinded IAB 1/7/04, effective 2/11/04.

4. Compliance calculations and confirmation samples. If a required confirmation sample as collected within the time specified in 41.3(1)“c”(7)“1” is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to determine the system's compliance in accordance with 41.3(1)“b.” The department has the discretion to invalidate results of obvious sampling errors.

(8) Designation of increased sampling frequency. The department may require more frequent monitoring than specified in 41.3(1)“c”(3) through (6) or may require confirmation samples for positive and negative results at its discretion. Public water supply systems may apply to conduct more frequent monitoring than the minimum monitoring frequencies specified in this subrule. Any increase or decrease in monitoring under this subparagraph will be designated in an operation permit or administrative order. To increase or decrease such frequency, the department shall consider the following factors:

1. Reported concentrations from previously required monitoring,
2. The degree of variation in reported concentrations,
3. Blending or treatment processes conducted for the purpose of complying with a maximum contaminant level, treatment technique, or action level, and
4. Other factors include changes in pumping rates in groundwater supplies or significant changes in the system's configuration, operating procedures, source of water and changes in streamflows.

(9) Grandfathered data. For the initial analysis required by 41.3(1)“c,” data for surface waters acquired within one year prior to the effective date and data for groundwaters acquired within three years prior to the effective date of 41.3(1)“c” may be substituted at the discretion of the department.

d. *Best available treatment technologies (BATs) for IOCs.* Rescinded IAB 8/11/99, effective 9/15/99.

e. Analytical methodology.

(1) Analytical methods for IOC's. Analysis for the listed inorganic contaminants shall be conducted using the following methods, or their equivalent as determined by EPA. Criteria for analyzing arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, sodium, and thallium with digestion or directly without digestion, and other analytical test procedures are contained in Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October, 1994. This document is available from the National Technical Information Service, NTIS PB95-104766, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161. The toll-free number is (800)553-6847.

INORGANIC CONTAMINANTS ANALYTICAL METHODS

Contaminant	Methodology ¹⁵	EPA	ASTM ³	SM	SM Online ²⁶	Other	Detection Limit, mg/L
Antimony	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, B-10		0.003
	Atomic absorption; platform	200.9 ²					0.0008 ¹²
	ICP-Mass spectrometry	200.8 ²					0.0004
	Atomic absorption; hydride		D3697-92, 02, 07, 12				0.001
Arsenic ¹⁶	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	ICP-Mass spectrometry	200.8 ²					0.0014
	Atomic absorption; platform	200.9 ²					0.0005 ¹⁵
	Atomic absorption; furnace		D2972-97C, 03C, 08C	3113B ^{4, 27, 33}	3113 B-04, B-10		0.001
	Atomic absorption; hydride		D2972-97B, 03B, 08B	3114B ^{4, 27, 33}	3114 B-09		0.001
Asbestos	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	Transmission electron microscopy	100.1 ⁹					0.01 MFL
Barium	Transmission electron microscopy	100.2 ¹⁰					
	Inductively coupled plasma	200.7 ²		3120B ^{18, 27, 33}	3120 B-99		0.002
Beryllium	ICP-Mass spectrometry	200.8 ²					
	Atomic absorption; direct			3111D ^{4, 27, 33}	3111 D-99		0.1
	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, B-10		0.002
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	Inductively coupled plasma	200.7 ²		3120B ^{18, 27, 33}	3120 B-99		0.0003
Cadmium	ICP-Mass spectrometry	200.8 ²					0.0003
	Atomic absorption; platform	200.9 ²					0.00002 ¹²
	Atomic absorption; furnace		D3645-97B, 03B, 08B	3113B ^{4, 27, 33}	3113 B-04, B-10		0.0002
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	Inductively coupled plasma	200.7 ²					0.001
Chromium	ICP-Mass spectrometry	200.8 ²					
	Atomic absorption; platform	200.9 ²					
	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, B-10		0.0001
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	Inductively coupled plasma	200.7 ²		3120B ^{18, 27, 33}	3120 B-99		0.007
	ICP-Mass spectrometry	200.8 ²					
	Atomic absorption; platform	200.9 ²					
	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, B-10		0.001
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					

Contaminant	Methodology ¹⁵	EPA	ASTM ³	SM	SM Online ²⁶	Other	Detection Limit, mg/L
Cyanide	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	Manual distillation (followed by one of the following four analytical methods:)		D2036-98A, D2036-06A	4500-CN-C ¹⁸ , 27, 33			
	Spectrophotometric; amenable ¹⁴		D2036-98B, D2036-06B	4500-CN-G ¹⁸ , 27, 33	4500-CN-G-99		0.02
	Spectrophotometric; manual ¹³		D2036-98A, D2036-06A	4500-CN-E ¹⁸ , 27, 33	4500-CN-E-99	I-3300-85 ⁵	0.02
	Spectrophotometric; semi-automated ¹³	335.4 ⁶					0.005
	Selective electrode ¹³			4500-CN-F ¹⁸ , 27, 33	4500-CN-F-99		0.05
	UV, distillation, spectrophotometric ²²					Kelada 01 ²⁰	0.0005
	Micro distillation, flow injection, spectrophotometric ¹³					QuikChem 10-204-00-1-X ²¹	0.0006
Fluoride	Ligand exchange with amperometry ¹⁴		D6888-04			OIA-1677, DW ²⁵	0.0005
	Gas chromatography/mass spectrometry headspace					ME355.01 ²⁹	
	Ion chromatography	300.0 ⁶ , 300.1 ²³	D4327-97, 03, 11	4110B ¹⁸ , 27, 33	4110 B-00		
	Manual distillation; colorimetric; SPADNS			4500F ⁻ B,D ¹⁸ , 27, 33	4500 F ⁻ B,D-97		
	Manual electrode		D1179-93B, 99B, D1179-04B, 10B	4500F ⁻ C ¹⁸ , 27, 33	4500 F ⁻ C-97		
	Automated electrode					380-75WE ¹¹	
	Automated alizarin			4500F ⁻ E ¹⁸ , 27, 33	4500 F ⁻ E-97	129-71W ¹¹	
	Capillary ion electrophoresis					D6508, Rev.2 ²⁴	
Magnesium	Arsenite-free colorimetric; SPADNS					Hach SPADNS 2 Method 10225 ³¹	
	Atomic absorption; direct		D511-93, 03B, 09B, 14B	3111B ⁴ , 27, 33	3111 B-99		
	ICP	200.7 ¹		3120B ¹⁸ , 27, 33	3120 B-99		
	Complexation Titrimetric Methods		D511-93, 03A, 09A, 14B	3500-Mg E ⁴			
				3500-Mg B ¹⁹ , 27, 33	3500-Mg B-97		
	Ion chromatography		D6919-03, 09				
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	Manual, cold vapor	245.1 ²	D3223-97, 02, 12	3112B ⁴ , 27, 33	3112 B-09		0.0002
Mercury	Automated, cold vapor	245.2 ¹					0.0002
	ICP-Mass spectrometry	200.8 ²					
	Inductively coupled plasma	200.7 ²		3120B ¹⁸ , 27, 33	3120 B-99		0.005
	ICP-Mass spectrometry	200.8 ²					0.0005
	Atomic absorption; platform	200.9 ²					0.0006 ¹²
	Atomic absorption; direct			3111B ⁴ , 27, 33	3111 B-99		
Nickel							

Contaminant	Methodology ¹⁵	EPA	ASTM ³	SM	SM Online ²⁶	Other	Detection Limit, mg/L
Nitrate	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, 10		0.001
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	Ion chromatography	300.0 ⁶ , 300.1 ²³	D4327-97, 03, 11	4110B ^{18, 27, 33}	4110 B-00	B-1011 ⁸	0.01
	Automated cadmium reduction	353.2 ⁶	D3867-90A	4500-NO ₃ -F ^{18, 27, 33}	4500-NO ₃ -F-00		0.05
	Ion selective electrode			4500-NO ₃ -D ^{18, 27, 33}	4500-NO ₃ -D-00	601 ⁷	1
	Manual cadmium reduction		D3867-90B	4500-NO ₃ -E ^{18, 27, 33}	4500-NO ₃ -E-00		0.01
	Capillary ion electrophoresis					D6508, Rev.2 ²⁴	0.076
	Reduction/colorimetric					Systea Easy (1-Reagent) ³⁰ NECi Nitrate-Reductase ³⁴	
Nitrite	Colorimetric; direct					Hach TNTplus TM 835/836 Method 10206 ³²	
	Ion chromatography	300.0 ⁶ , 300.1 ²³	D4327-97, 03, 11	4110B ^{18, 27, 33}	4110 B-00	B-1011 ⁸	0.004
	Automated cadmium reduction	353.2 ⁶	D3867-90A	4500-NO ₃ -F ^{18, 27, 33}	4500-NO ₃ -F-00		0.05
	Manual cadmium reduction		D3867-90B	4500-NO ₃ -E ^{18, 27, 33}	4500-NO ₃ -E-00		0.01
	Spectrophotometric			4500-NO ₂ -B ^{18, 27, 33}	4500-NO ₂ -B-00		0.01
	Capillary ion electrophoresis					D6508, Rev. 2 ²⁴	0.103
Selenium	Reduction/colorimetric					Systea Easy (1-Reagent) ³⁰ NECi Nitrate-Reductase ³⁴	
	Atomic absorption; hydride		D3859-98, 03A, 08A	3114B ^{4, 27, 33}	3114 B-09		0.002
	ICP-Mass spectrometry	200.8 ²					
	Atomic absorption; platform	200.9 ²					
	Atomic absorption; furnace		D3859-98, 03B, 08B	3113B ^{4, 27, 33}	3113 B-04, 10		0.002
Sodium	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	Inductively coupled plasma	200.7 ²					
	Atomic absorption; direct			3111B ^{4, 27, 33}	3111 B-99		
	Ion chromatography		D6919-03, 09				
Thallium	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2 ²⁸					
	ICP-Mass spectrometry	200.8 ²					
	Atomic absorption; platform	200.9 ²					0.0007 ¹²

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West,

1301 Constitution Avenue, NW, Room B102, Washington, DC 20460 (telephone: (202)566-2426); or at the Office of Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

¹“Methods for Chemical Analysis of Water and Wastes,” EPA-600/4-79-020, March 1983. Available at NTIS, PB84-128677.

²“Methods for the Determination of Metals in Environmental Samples—Supplement I,” EPA-600/R-94-111, May 1994. Available at NTIS, PB95-125472.

³Annual Book of ASTM Standards, 1994, 1996, 1999 or 2003, Vols. 11.01 and 11.02, American Society for Testing and Materials (ASTM) International; the methods listed are the only versions that may be used. Copies may be obtained from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

⁴18th and 19th editions of Standard Methods for the Examination of Water and Wastewater, 1992 and 1995, respectively, American Public Health Association; either edition may be used. Copies may be obtained from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

⁵Techniques of Water Resources Investigation of the U.S. Geological Survey, Book 5, Chapter A-1, 3rd edition, 1989, Method I-3300-85. Available from Information Services, U.S. Geological Survey, Federal Center, Box 25286, Denver, CO 80225-0425.

⁶“Methods for the Determination of Inorganic Substances in Environmental Samples,” EPA-600-R-93-100, August 1993. Available at NTIS, PB94-120821.

⁷The procedure shall be done in accordance with the Technical Bulletin 601, “Standard Method of Test for Nitrate in Drinking Water,” July 1994, PN221890-001, Analytical Technology, Inc. Copies may be obtained from ATI Orion, 529 Main Street, Boston, MA 02129.

⁸Method B-1011, “Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography,” August 1987. Copies may be obtained from Waters Corporation, Technical Services Division, 34 Maple Street, Milford, MA 01757; telephone: (508)482-2131.

⁹Method 100.1, “Analytical Method for Determination of Asbestos Fibers in Water,” EPA-600/4-83-043, EPA, September 1983. Available at NTIS, PB83-260471.

¹⁰Method 100.2, “Determination of Asbestos Structure Over 10 Microns in Length in Drinking Water,” EPA-600/R-94-134, June 1994. Available at NTIS, PB94-201902.

¹¹Industrial Method No. 129-71W, “Fluoride in Water and Wastewater,” December 1972, and Method No. 380-75WE, “Fluoride in Water and Wastewater,” February 1976, Technicon Industrial Systems. Copies may be obtained from Bran & Luebbe, 1025 Busch Parkway, Buffalo Grove, IL 60089.

¹²Lower MDLs are reported using stabilized temperature graphite furnace atomic absorption.

¹³Screening method for total cyanides.

¹⁴Measures “free” cyanides when distillation, digestion, or ligand exchange is omitted.

¹⁵Because MDLs reported in EPA Methods 200.7 and 200.9 were determined using a 2X preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct analysis (i.e., no sample digestion) will be higher. For direct analysis of cadmium by Method 200.7, sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits. Preconcentration may also be required for direct analysis of antimony and thallium by Method 200.9, and antimony by Method 3113B, unless multiple in-furnace depositions are made.

¹⁶If ultrasonic nebulization is used in the determination of arsenic by Method 200.8, the arsenic must be in the pentavalent state to provide uniform signal response. For direct analysis of arsenic with Method 200.8 using ultrasonic nebulization, samples and standards must contain 1 mg/L of sodium hypochlorite.

¹⁷Reserved.

¹⁸The 18th, 19th, and 20th editions of Standard Methods for the Examination of Water and Wastewater, 1992, 1995, and 1998, respectively, American Public Health Association; any edition may be used, except that the versions of 3111B, 3111D, 3113B, and 3114B in the 20th edition may not be used. Copies may be obtained from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

¹⁹The 20th edition of Standard Methods for the Examination of Water and Wastewater, 1998, American Public Health Association. Copies may be obtained from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

²⁰The description for the Kelada 01 Method, “Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, and Thiocyanate,” Revision 1.2, August 2001, EPA #821-B-01-009 for cyanide is available from NTIS PB 2001-108275. NOTE: A 450W UV lamp may be used in this method instead of the 550W lamp specified if it provides performance within the quality control acceptance criteria of the method in a given instrument. Similarly, modified flow cell configurations and flow conditions may be used in the method, provided that the quality control acceptance criteria are met.

²¹The description for the QuikChem Method 10-204-00-1-X, “Digestion and distillation of total cyanide in drinking water and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis,” Revision 2.1, November 30, 2000, for cyanide is available from Lachat Instruments, 6645 W. Mill Road, Milwaukee, WI 53218, telephone (414)358-4200.

²²Measures total cyanides when UV-digester is used, and “free” cyanides when UV-digester is bypassed.

²³“Methods for the Determination of Organic and Inorganic Compounds in Drinking Water,” Volume 1, EPA 815-R-00-014, August 2000. Available at NTIC, PB2000-106981.

²⁴Method D6508, Rev. 2, “Test Method for Determination of Dissolved Inorganic Anions in Aqueous Matrices Using Capillary Ion Electrophoresis and Chromate Electrolyte,” available from Waters Corp., 34 Maple Street, Milford, MA 01757; telephone: (508)482-2131; fax: (508)482-3625.

²⁵Method OIA-1677, DW “Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry,” January 2004. EPA-821-R-04-001. Available from ALPKEM, a division of OI Analytical, P.O. Box 9010, College Station, TX 77542-9010.

²⁶Standard Methods Online is available at www.standardmethods.org. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

²⁷Standard Methods for the Examination of Water and Wastewater, 21st edition (2005). Available from American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

²⁸EPA Method 200.5, Revision 4.2: “Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry,” 2003. EPA/600/R-06/115. Available at www.nemi.gov.

²⁹Method ME355.01, Revision 1.0, “Determination of Cyanide in Drinking Water by GC/MS Headspace,” May 26, 2009. Available at www.nemi.gov or from H & E Testing Laboratory, 221 State Street, Augusta, ME 04333; telephone: (207)287-2727.

³⁰Systea Easy (1-Reagent), “Systea Easy (1-Reagent) Nitrate Method,” February 4, 2009. Available at www.nemi.gov or from Systea Scientific, LLC, 900 Jorie Blvd., Suite 35, Oak Brook, IL 60523.

³¹Hach Company Method, “Hach Company SPADNS 2 (Arsenic-free) Fluoride Method 10225 – Spectrophotometric Measurement of Fluoride in Water and Wastewater,” January 2011. 5600 Lindbergh Drive, P.O. Box 389, Loveland, CO 80539. Available at www.hach.com.

³²Hach Company Method, “Hach Company TNTplus™ 835/836 Nitrate Method 10206 – Spectrophotometric Measurement of Nitrate in Water and Wastewater,” January 2011. 5600 Lindbergh Drive, P.O. Box 389, Loveland, CO 80539. Available at www.hach.com.

³³Standard Methods for the Examination of Water and Wastewater, 22nd edition (2012), American Public Health Association. Available from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

³⁴Nitrate Elimination Company, Inc. (NECi). “Method for Nitrate Reductase Nitrate-Nitrogen Analysis of Drinking Water,” February 2016. Superior Enzymes, Inc., 334 Hecla Street, Lake Linden, MI 49945.

(2) Sampling methods for IOCs. Sample collection for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium under this subparagraph shall be conducted using the sample preservation, container, and maximum holding time procedures specified in the table below:

SAMPLING METHODS FOR IOCs

Contaminant	Preservative ¹	Container ²	Time ³
Antimony	HNO ₃	P or G	6 months
Arsenic	HNO ₃	P or G	6 months
Asbestos	4 degrees C	P or G	48 hours for filtration ⁵
Barium	HNO ₃	P or G	6 months
Beryllium	HNO ₃	P or G	6 months
Cadmium	HNO ₃	P or G	6 months
Chromium	HNO ₃	P or G	6 months
Cyanide	4 degrees C, NaOH	P or G	14 days
Fluoride	None	P or G	1 month
Mercury	HNO ₃	P or G	28 days
Nickel	HNO ₃	P or G	6 months
Nitrate ⁴	4 degrees C	P or G	48 hours
Nitrate-Nitrite ⁴	H ₂ SO ₄	P or G	28 days
Nitrite ⁴	4 degrees C	P or G	48 hours
Selenium	HNO ₃	P or G	6 months
Thallium	HNO ₃	P or G	6 months

¹When indicated, samples must be acidified at the time of collection to pH < 2 with concentrated acid, or adjusted with sodium hydroxide to pH > 12. Samples collected for metals analysis may be preserved by acidification at the laboratory, using a 1:1 nitric acid solution (50 percent by volume), provided the shipping time and other instructions in Section 8.3 of EPA Methods 200.7, 200.8, and 200.9 are followed. When chilling is indicated, the sample must be shipped and stored at 4 degrees C or less.

²P: plastic, hard or soft; G: glass, hard or soft.

³In all cases, samples should be analyzed as soon after collection as possible. Follow additional (if any) information on preservation, containers, or holding times that is specified in the method.

⁴Nitrate may only be measured separate from nitrite in samples that have not been acidified. Measurement of acidified samples provides a total nitrate (sum of nitrate plus nitrite) concentration. Acidification of total nitrate (nitrate plus nitrite) samples must be done in the field at the time of sample collection.

⁵Instructions for containers, preservation procedures, and holding times as specified in Method 100.2 must be adhered to for all compliance analyses, including those conducted with Method 100.1.

f. Unregulated inorganic chemicals. Rescinded IAB 1/7/04, effective 2/11/04.

41.3(2) Other inorganic chemical contaminants. Reserved.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—41.4(455B) Lead, copper, and corrosivity.

41.4(1) Lead, copper, and corrosivity regulation by the setting of a treatment technique requirement.

The lead and copper rules establish a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples collected at consumers' taps.

a. Applicability. Unless otherwise indicated, each of the provisions of this subrule applies to community water systems and nontransient noncommunity water systems (hereinafter referred to as "water systems" or "systems").

b. Action levels.

(1) Lead action level. The lead action level is exceeded if the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with 41.4(1) "c" is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L).

(2) Copper action level. The copper action level is exceeded if the concentration of copper in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with 41.4(1) "c" is greater than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L).

(3) Calculation of 90th percentile. The 90th percentile lead and copper levels shall be computed as follows:

1. The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

2. The number of samples taken during the monitoring period shall be multiplied by 0.9.

3. The contaminant concentration in the numbered sample yielded by this calculation is the 90th percentile contaminant level.

4. For water systems serving fewer than 100 people that collect five samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

5. For a public water system that has been allowed by the department to collect fewer than five samples in accordance with 41.4(1) "c"(3), the sample result with the highest concentration is considered the 90th percentile value.

c. Lead and copper tap water monitoring requirements.

(1) Sample site selection.

1. General. Public water supply systems shall complete a materials evaluation of their distribution systems by the date indicated in 41.4(1) "c"(4) in order to identify a pool of sampling sites that meets the requirements of this subrule, and which is sufficiently large to ensure that the water system can collect the number of lead and copper tap samples required in 41.4(1) "c"(3). All sites from which first-draw samples are collected shall be selected from this pool of targeted sampling sites. Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

2. Information sources. A public water supply system shall use the information on lead, copper and galvanized steel that it is required to collect under 41.4(1) "f" as part of its responsibility for the special monitoring for corrosivity characteristics when conducting a materials evaluation. When an evaluation of the information collected is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in 41.4(1) "c"(1), the water system shall review all plumbing codes, permits, and records in the files of the building department(s) which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system; all

inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system; and all existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations. In addition, the system shall seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities).

3. Tier 1 community sampling sites. The sampling sites selected for a community water system's sampling pool ("tier 1 sampling sites") shall consist of single-family structures that contain copper pipes with lead solder installed after 1982 or contain lead pipes; or are served by a lead service line. When multiple-family residences comprise at least 20 percent of the structures served by a water system, the system may include these types of structures in its sampling pool.

4. Tier 2 community sampling sites. Any community water system with insufficient tier 1 sampling sites shall complete its sampling pool with "tier 2 sampling sites," consisting of buildings, including multiple-family residences that contain copper pipes with lead solder installed after 1982 or contain lead pipes; or are served by a lead service line.

5. Tier 3 community sampling sites. Any community water system with insufficient Tier 1 and Tier 2 sampling sites shall complete its sampling pool with "Tier 3 sampling sites," consisting of single-family structures that contain copper pipes with lead solder installed before 1983. A community water system with insufficient Tier 1, Tier 2, and Tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. A representative site is defined as a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

6. Tier 1 NTNC sampling sites. The sampling sites selected for a nontransient noncommunity water system ("tier 1 sampling sites") shall consist of buildings that: contain copper pipes with lead solder installed after 1982 or contain lead pipes; or are served by a lead service line.

7. Other NTNC sampling sites. A nontransient noncommunity water system with insufficient Tier 1 sites that meet the targeting criteria in 41.4(1)"c"(1)"6" shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the NTNC system shall use representative sites throughout the distribution system. A representative site is defined as a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

8. LSL sampling sites. Any public water supply system whose distribution system contains lead service lines shall draw 50 percent of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50 percent of those samples from sites served by a lead service line. A water system that cannot identify a sufficient number of sampling sites served by a lead service line shall collect first-draw samples from all of the sites identified as being served by such lines.

(2) Sample collection methods.

1. Tap samples for lead and copper collected in accordance with this subparagraph, with the exception of lead service line samples collected under 567—subrule 43.7(4) and 41.4(1)"c"(2)"5," shall be first-draw samples.

2. First-draw tap samples for lead and copper shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours. First-draw samples from residential housing shall be collected from the cold-water kitchen tap or bathroom sink tap. First-draw samples from a nonresidential building shall be collected at an interior tap from which water is typically drawn for consumption. Non-first-draw samples collected in lieu of first-draw samples pursuant to 41.4(1)"c"(2)"5" shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. First-draw samples may be collected by the system or the system may allow residents to collect first-draw samples after instructing the residents of the sampling procedures specified in this paragraph. To avoid problems of residents handling nitric acid, acidification of first-draw samples may be done up to 14 days after the sample is collected. After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved EPA method before the sample

can be analyzed. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

3. Service line samples collected to determine if the service line is directly contributing lead (as described in 567—subrule 43.7(4)) shall be one liter in volume and have stood motionless in the lead service line for at least six hours and be collected at the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line; tapping directly into the lead service line; or if the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

4. A public water supply system shall collect each first-draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the water system cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

5. An NTNC system, or a CWS system that meets the criteria of 567—subparagraph 42.2(2)“b”(7) that does not have enough taps that can supply first-draw samples, as defined in 567—40.2(455B), may apply to the department in writing to substitute non-first-draw samples. Such systems must collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The department may waive the requirement for prior department approval of non-first-draw sample sites selected by the system, through written notification to the system.

(3) Number of samples. Water systems shall collect at least one sample during each monitoring period specified in 41.4(1)“c”(4) from the number of sites as listed in the column below titled “standard monitoring.” A system conducting reduced monitoring under 41.4(1)“c”(4) shall collect at least one sample from the number of sites specified in the column titled “reduced monitoring” during each monitoring period specified in 41.4(1)“c”(4). Such reduced monitoring sites shall be representative of the sites required for standard monitoring. A public water system that has fewer than five drinking water taps that can be used for human consumption meeting the sample site criteria of 41.4(1)“c”(1) to reach the required number of sample sites listed in 41.4(1)“c”(3) must collect at least one sample from each tap and then must collect additional samples from those taps on different days during the monitoring period to meet the required number of sites. Alternatively, the department may allow these systems to collect a number of samples less than the number of sites specified in 41.4(1)“c”(1), provided that 100 percent of all taps that can be used for human consumption are sampled. The department must approve this reduction of the minimum number of samples in writing based upon a request from the system or on-site verification by the department. The department may specify sampling locations when a system is conducting reduced monitoring.

REQUIRED NUMBER OF LEAD/COPPER SAMPLES

System Size (Number of People Served)	Standard Monitoring (Number of Sites)	Reduced Monitoring (Number of Sites)
greater than 100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
less than or equal to 100	5	5

(4) Timing of monitoring.

1. Initial tap sampling. The first six-month monitoring period for small, medium-size and large systems shall begin on the following dates:

System Size (Number of People Served)

First Six-month Monitoring Period Begins on:

greater than 50,000 (large system)	January 1, 1992
3,301 to 50,000 (medium system)	July 1, 1992
less than or equal to 3,300 (small system)	July 1, 1993

All large systems shall monitor during two consecutive six-month periods. All small and medium-size systems shall monitor during each six-month monitoring period until the system exceeds the lead or copper action level and is, therefore, required to implement the corrosion control treatment requirements under 567—paragraph 43.7(1) “a,” in which case the system shall continue monitoring in accordance with 41.4(1) “c”(4), or the system meets the lead and copper action levels during two consecutive six-month monitoring periods, in which case the system may reduce monitoring in accordance with 41.4(1) “c”(4).

2. Monitoring after installation of corrosion control and source water treatment. Large systems which install optimal corrosion control treatment pursuant to 567—subparagraph 43.7(1) “d”(4) shall monitor during two consecutive six-month monitoring periods by the date specified in 567—subparagraph 43.7(1) “d”(5). Small or medium-size systems which install optimal corrosion control treatment pursuant to 567—subparagraph 43.7(1) “e”(5) shall monitor during two consecutive six-month monitoring periods as specified in 567—subparagraph 43.7(1) “e”(6). Systems which install source water treatment shall monitor during two consecutive six-month monitoring periods by the date specified in 567—subparagraph 43.7(3) “a”(4).

3. Monitoring after the department specifies water quality parameter values for optimal corrosion control. After the department specifies the values for water quality control parameters under 567—paragraph 43.7(2) “f,” the system shall monitor during each subsequent six-month monitoring period, with the first monitoring period to begin on the date the department specifies the optimal values under 567—paragraph 43.7(2) “f.”

4. Reduced monitoring.

- A small or medium-size water system that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the number of lead and copper samples according to 41.4(1) “c”(3) and reduce the frequency of sampling to once per year. A small or medium-size water system collecting fewer than five samples as specified in 41.4(1) “c”(3) that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the frequency of sampling to once per year. The system may not ever reduce the number of samples required below the minimum of one sample per available tap. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

- Any public water supply system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the department under 567—paragraph 43.7(2) “f” during each of two consecutive six-month monitoring periods may reduce the monitoring frequency to once per year and reduce the number of lead and copper samples according to 41.4(1) “c”(3), upon written approval by the department. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period. The department shall review monitoring, treatment, and other relevant information submitted by the water system in accordance with 567—subrule 42.4(2), and shall notify the system in writing when it determines that the system is eligible to commence reduced monitoring. The department will review and, where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

- A small or medium-size water system that meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years. Any water system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the department under 567—paragraph 43.7(2) “f” during three consecutive years of monitoring may reduce the frequency of monitoring from annually to once every three years if it receives written approval by the department. Samples collected once every three years shall be collected no later than every third calendar year. The department shall review monitoring, treatment, and other relevant information submitted by the water system in accordance with 567—subrule 42.4(2), and shall notify the system in writing when it

determines that the system is eligible to reduce the monitoring frequency to once every three years. The department will review and, where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

- A water system that reduces the number and frequency of sampling shall collect these samples from sites included in the pool of targeted sampling sites identified in 41.4(1)“c”(1). Systems sampling annually or less frequently shall conduct the lead and copper tap sampling during the months of June through September, unless the department, at its discretion, has approved a different sampling period. If approved by the department, the period shall be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. The department shall designate a period that represents a time of normal operation for an NTNC system that does not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known. This sampling shall begin during the period approved or designated by the department in the calendar year immediately following the end of the second consecutive six-month monitoring period for systems initiating annual monitoring and during the three-year period following the end of the third consecutive calendar year of annual monitoring for systems initiating triennial monitoring.

Systems monitoring annually that have been collecting samples during the months of June through September and that receive department approval to alter their sample collection period must collect their next round of samples during a time period that ends no later than 21 months after the previous round of sampling.

Systems monitoring triennially that have been collecting samples during the months of June through September and that receive department approval to alter the sampling collection period must collect their next round of samples during a time period that ends no later than 45 months after the previous round of sampling.

Subsequent rounds of sampling must be collected annually or triennially, as required by 41.4(1)“c.”

Small systems that have been granted waivers pursuant to 41.4(1)“c”(7), that have been collecting samples during the months of June through September and that receive department approval to alter their sample collection period as previously stated must collect their next round of samples before the end of the nine-year period.

- Any water system that demonstrates for two consecutive six-month monitoring periods that the 90th percentile tap water level computed under 41.4(1)“b”(3) is less than or equal to 0.005 mg/L for lead and is less than or equal to 0.65 mg/L for copper may reduce the number of samples in accordance with 41.4(1)“c”(3) and reduce the frequency of sampling to once every three calendar years, if approved by the department.

- A small or medium-size water system subject to reduced monitoring that exceeds the lead or copper action level shall resume sampling according to 41.4(1)“c”(4)“3” and collect the number of samples specified for standard monitoring in 41.4(1)“c”(3). Any such system shall also conduct water quality parameter monitoring in accordance with 41.4(1)“d”(2), (3), or (4), as appropriate, during the monitoring period in which it exceeded the action level. Any such system may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in 41.4(1)“c”(3) after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of 41.4(1)“c”(4)“4,” first bulleted paragraph, and may resume triennial monitoring for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either 41.4(1)“c”(4)“4,” third bulleted paragraph or fifth bulleted paragraph, and has received department approval.

Any water system subject to reduced monitoring frequency that fails to meet the lead action level during any four-month monitoring period or that fails to operate at or above the minimum value or within the range of values for the water quality control parameters specified by the department under 567—paragraph 43.7(2)“f” for more than nine days in any six-month period specified in 41.4(1)“d”(4) shall resume tap water sampling according to 41.4(1)“c”(4)“3,” collect the number of samples specified for standard monitoring in 41.4(1)“c”(3), and resume monitoring for water quality parameters within the distribution system in accordance with 41.4(1)“d”(4). This standard tap water sampling shall begin no later

than the six-month period beginning January 1 of the calendar year following the lead action level exceedance or water quality parameter excursion. The system may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:

The system may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in 41.4(1) “c”(3) after it has completed two subsequent six-month rounds of monitoring that meet the criteria of 41.4(1) “c”(4) “4,” second bulleted paragraph, and upon written approval from the department to resume reduced annual monitoring. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

The system may resume triennial monitoring for lead and copper at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either 41.4(1) “c”(4) “4,” third bulleted paragraph or fifth bulleted paragraph, and upon written approval from the department to resume triennial monitoring.

The system may reduce the number of water quality parameter tap water samples required in 41.4(1) “d”(5) “1” and the sampling frequency required in 41.4(1) “d”(5) “2.” Such a system may not resume triennial monitoring for water quality parameters at the tap until it demonstrates that it has requalified for triennial monitoring, pursuant to 41.4(1) “d”(5) “2.”

- Any water system subject to a reduced monitoring frequency under 41.4(1) “c”(4) “4” must notify the department in writing in accordance with 567—subparagraph 42.4(2) “a”(3) of any upcoming long-term change in treatment or addition of a new source as described in that subparagraph. The department must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the system. The department may require the system to resume sampling pursuant to 41.4(1) “c”(4) “3” and collect the number of samples specified for standard monitoring under 41.4(1) “c”(3), or take other appropriate steps such as increased water quality parameter monitoring or reevaluation of its corrosion control treatment given the potentially different water quality considerations.

(5) Additional monitoring by systems. The results of any monitoring conducted in addition to the minimum requirements of 41.4(1) “c” shall be considered by the system and the department in making any determinations (i.e., calculating the 90th percentile lead or copper level) under this subrule.

(6) Invalidation of lead or copper tap water samples. A sample invalidated under this paragraph does not count toward determining the lead or copper 90th percentile levels under 41.4(1) “b”(3) or toward meeting the minimum monitoring requirements of 41.4(1) “c”(3).

1. The department may invalidate a lead or copper tap water sample if at least one of the following conditions is met:

- The laboratory establishes that improper sample analysis caused erroneous results.
- The department determines that the sample was taken from a site that did not meet the site selection criteria of 567—41.4(455B).
- The sample container was damaged in transit to the laboratory.
- There is a substantial reason to believe that the sample was subject to tampering.
- The sample is not representative of water that would be consumed from the tap.
- The department determined that a major disruption of the water flow occurred in the system or building plumbing prior to sample collection, which resulted in lead or copper levels that were not representative of the system.

2. The system must report the results of all samples to the department and all supporting documentation for samples the system believes should be invalidated.

3. To invalidate a sample under 41.4(1) “c”(6) “1,” the decision and the rationale for the decision must be documented in writing. The department may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

4. The system must collect replacement samples for any samples invalidated under subparagraph 41.4(1) “c”(6) if, after the invalidation of one or more samples, the system has too few samples to meet the minimum requirements of 41.4(1) “c”(3). Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the department invalidates the sample, or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the

applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

(7) Monitoring waivers for small systems. Any small system that meets the criteria of this subparagraph may apply to the department to reduce the frequency of monitoring for lead and copper under subrule 41.4(1) to once every nine years if it meets all of the materials criteria specified in 41.4(1) “c”(7) “1” and the monitoring criteria specified in 41.4(1) “c”(7) “2.”

1. Materials criteria. The system must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials and copper-containing materials, as defined below:

- Lead. The water system must provide certification and supporting documentation to the department that the system is free of all lead-containing materials. The system does not contain any plastic pipes which contain lead plasticizers, or plastic service lines which contain lead plasticizers. The system must be free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless such fittings and fixtures meet the specifications of any standard established pursuant to 42 U.S.C. 300-g-6(e).

- Copper. The water system must provide certification and supporting documentation to the department that the system contains no copper pipes or copper service lines.

2. Monitoring criteria. The system must have completed at least one six-month round of standard tap water monitoring for lead and copper at sites approved by the department and from the number of sites required by 41.4(1) “c”(3), and demonstrate that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing and copper-containing materials meet the following criteria:

- Lead levels. The system must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/L.

- Copper levels. The system must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/L.

3. Department approval of waiver application. The department shall notify the system of its waiver determination in writing, including the basis of its decision and any condition of the waiver. The department may require as a waiver condition that the system conduct specific activities, such as limited monitoring and periodic outreach to customers to remind them to avoid installation of materials that would void the waiver. The system must continue monitoring for lead and copper at the tap as required by 41.4(1) “c”(4) “1” through “4,” as appropriate, until the system receives written approval for the waiver from the department.

4. Monitoring frequency of systems with waivers.

- A system must conduct tap water monitoring for lead and copper in accordance with 41.4(1) “c”(4) “4” at the reduced number of sampling sites identified in subparagraph 41.4(1) “c”(3) at least once every nine years and provide the materials certification specified in 41.4(1) “c”(7) “1” for both lead and copper to the department along with the monitoring results. Samples collected every nine years shall be collected no later than every ninth calendar year.

- A system with a waiver must notify the department in writing pursuant to 567—subparagraph 42.4(2) “a”(3) of any upcoming long-term change in treatment or addition of a new source, as described in that subparagraph. The department must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the system. The department has the authority to require the system to add or modify waiver conditions, such as to require recertification that the system is free of lead-containing and copper-containing materials or to require additional monitoring, if the department deems such modifications are necessary to address treatment or source water changes at the system.

- If a system with a waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, such as from new construction or repairs, the system shall notify the department in writing no later than 60 days after becoming aware of such a change.

5. Continued eligibility. If the system continues to satisfy the requirements of 41.4(1)“c”(7)“4,” the waiver will be renewed automatically, unless any of the conditions listed below occur. A system whose waiver has been revoked may reapply for a waiver at such time as it again meets the appropriate materials and monitoring criteria of 41.4(1)“c”(7)“1” and 41.4(1)“c”(7)“2.”

- A system no longer satisfies the materials criteria of 41.4(1)“c”(7)“1,” or has a 90th percentile lead level greater than 0.005 mg/L or a 90th percentile copper level greater than 0.65 mg/L.

- The department notifies the system in writing that the waiver has been revoked, including the basis of its decision.

6. Requirements following waiver revocation. A system whose waiver has been revoked by the department is subject to the corrosion control treatment and lead and copper tap water monitoring requirements as follows:

- If the system exceeds the lead or copper action level, the system must implement corrosion control treatment in accordance with the deadlines specified in 567—paragraph 43.7(1)“e,” and any other applicable parts of 567—41.4(455B).

- If the system meets both the lead and copper action levels, the system must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sample sites specified in subparagraph 41.4(1)“c”(3).

d. *Water quality parameter monitoring requirements.* All large public water supply systems (and all small and medium-size public water supply systems that exceed the lead or copper action level) shall monitor water quality parameters in addition to lead and copper in accordance with this subrule. The requirements of this subrule are summarized in the table at the end of 41.4(1)“d”(6). The water quality parameters must be reported in accordance with the monthly operation report requirements listed in 567—subrule 42.4(3).

(1) General requirements.

1. Sample collection methods. Tap samples shall be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Tap sampling under this subrule is not required to be conducted at taps targeted for lead and copper sampling under 41.4(1)“c”(1)“1.” Systems may conduct tap sampling for water quality parameters at sites used for coliform sampling. Samples collected at the entry point(s) to the distribution system shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

2. Number of samples.

- Systems shall collect two tap samples for applicable water quality parameters during each monitoring period specified in 41.4(1)“d”(2) through (5) from the following number of sites.

REQUIRED NUMBER OF SAMPLES: WATER QUALITY PARAMETERS

System Size (Number of People Served)	Number of Sites for Water Quality Parameters
greater than 100,000	25
10,001 to 100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
less than or equal to 100	1

- Except as provided in 41.4(1)“d”(3)“3,” systems shall collect two samples for each applicable water quality parameter at each entry point to the distribution system during each six-month monitoring period specified in 41.4(1)“d”(2). During each monitoring period specified in 41.4(1)“d”(2). During each monitoring period specified in 41.4(1)“d”(3) through (5), systems shall collect one sample for each applicable water quality parameter at each entry point to the distribution system.

(2) Initial sampling. Large water systems shall measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each six-month monitoring period specified in 41.4(1)“c”(4)“1.” Small and medium-size systems shall measure the applicable water quality parameters at taps and at each entry point to the distribution system during each six-month monitoring period specified in 41.4(1)“c”(4)“1” during which the system exceeds the lead or copper action level. Tap water and entry point monitoring shall include: pH; alkalinity; orthophosphate, when an inhibitor containing a phosphate compound is used; silica, when an inhibitor containing a silicate compound is used; calcium; conductivity; and water temperature.

(3) Monitoring after installation of corrosion control. Large systems which install optimal corrosion control treatment pursuant to 567—subparagraph 43.7(1)“d”(4) shall measure the water quality parameters at the locations and frequencies specified below during each six-month monitoring period specified in 41.4(1)“c”(4)“2.” Small or medium-size systems which install optimal corrosion control treatment shall conduct such monitoring during each six-month monitoring period specified in 41.4(1)“c”(4)“2” in which the system exceeds the lead or copper action level.

1. Tap water monitoring shall include two samples for: pH; alkalinity; orthophosphate, when an inhibitor containing a phosphate compound is used; silica, when an inhibitor containing a silicate compound is used; calcium, when calcium carbonate stabilization is used as part of corrosion control.

2. Except as provided for in 41.4(1)“d”(3)“3,” monitoring at each entry point to the distribution system shall include one sample every two weeks (biweekly) for: pH; a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration when alkalinity is adjusted as part of optimal corrosion control; and a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable) when a corrosion inhibitor is used as part of optimal corrosion control.

3. Any groundwater system can limit entry point sampling described in 41.4(1)“d”(3)“3” to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated groundwater sources mixes with water from treated groundwater sources, the system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under this paragraph, the system shall provide to the department written information identifying the selected entry points and documentation sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system, including information on seasonal variability.

(4) Monitoring after the department specifies water quality parameter values for optimal corrosion control. After the department specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment, all large systems shall measure the applicable water quality parameters according to 41.4(1)“d”(3) and determine compliance with the requirements of 567—paragraph 43.7(2)“g” every six months, with the first six-month period to begin on either January 1 or July 1, whichever comes first, after the department specifies the optimal values under 567—paragraph 43.7(2)“f.” Any small or medium-size system shall conduct such monitoring during each monitoring period specified in 41.4(1)“c”(4)“3” in which the system exceeds the lead or copper action level. For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to 41.4(1)“c”(4)“4” at the time of the action level exceedance, the start of the applicable six-month monitoring period under this paragraph shall coincide with the end of the applicable monitoring period under 41.4(1)“c”(4)“4.” Compliance with department-designated optimal water quality parameter values shall be determined as specified in 567—paragraph 43.7(2)“g.”

(5) Reduced monitoring.

1. Public water supply systems that maintain the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under 41.4(1)“c”(4) shall continue monitoring at the entry point(s) to the distribution system as specified in 567—paragraph 43.7(2)“f.” Such system may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each six-month monitoring period.

REDUCED WATER QUALITY PARAMETER MONITORING

System Size

Reduced Number of Sites for

(Number of People Served)	Water Quality Parameters
greater than 100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
less than or equal to 100	1

2. A public water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under 567—paragraph 43.7(2)“f” during three consecutive years of monitoring may reduce the frequency with which the system collects the number of tap samples for applicable water quality parameters specified in 41.4(1)“d”(5) from every six months to annually. This sampling shall begin during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs. Any system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under 567—paragraph 43.7(2)“f” during three consecutive years of annual monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in 41.4(1)“d”(5) from annually to every three years. This sampling shall begin no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

A water system may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in 41.4(1)“d”(5)“1” to every three years if it demonstrates during two consecutive monitoring periods that its tap water lead level at the 90th percentile is less than or equal to 0.005 mg/L, that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L, and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under 567—paragraph 43.7(2)“f.” Monitoring conducted every three years shall be done no later than every third calendar year.

3. A public water system that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.

4. Any water system subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the department under 567—paragraph 43.7(2)“f” for more than nine days in any six-month period specified in 567—paragraph 43.7(2)“g” shall resume distribution system tap water sampling in accordance with the number and frequency requirements in 41.4(1)“d”(3). Such a system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in 41.4(1)“d”(5)“1” after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of that paragraph or may resume triennial monitoring for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria in 41.4(1)“d”(5)“2.”

(6) Additional monitoring by systems. The results of any monitoring conducted in addition to the minimum requirements of this subrule shall be considered in making any determinations (i.e., determining concentrations of water quality parameters) under this subrule or 567—subrule 43.7(2).

SUMMARY OF MONITORING REQUIREMENTS FOR WATER QUALITY PARAMETERS¹

Monitoring Period	Location	Parameters ²	Frequency
Initial Monitoring	Taps and at entry point(s) to distribution systems	pH, alkalinity, orthophosphate or silica ³ , calcium, conductivity, temperature	Every 6 months
After Installation of Corrosion Control	Taps	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴	Every 6 months
	Entry point(s) to distribution system ⁶	pH, alkalinity, if alkalinity is adjusted as part of corrosion control then include the chemical additive dosage rate and concentration, inhibitor dosage rate and inhibitor residual ⁵	At least every two weeks
After Department Specifies Parameter Values for Optimal Corrosion Control	Taps	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴	Every 6 months
	Entry point(s) to distribution system ⁶	pH, alkalinity, if alkalinity is adjusted as part of corrosion control then include the chemical	At least every two weeks

Monitoring Period	Location	Parameters ²	Frequency
		additive dosage rate and concentration, inhibitor dosage rate and inhibitor residual ⁵	
Reduced Monitoring	Taps	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴	Every 6 months, annually ⁷ , or every 3 years ⁸ , at a reduced number of sites
	Entry point(s) to distribution system ⁶	pH, alkalinity, if alkalinity is adjusted as part of corrosion control then include the chemical additive dosage rate and concentration, inhibitor dosage rate and inhibitor residual ⁵	At least every two weeks

¹Table is for illustrative purposes; consult the text of this subrule for precise regulatory requirements.

²Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.

³Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.

⁴Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.

⁵Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.

⁶Groundwater systems may limit monitoring to representative locations throughout the systems.

⁷Water systems may reduce frequency of monitoring for water quality parameters at the tap from every six months to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during three consecutive years of monitoring.

⁸Water systems may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every three years if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during three consecutive years of annual monitoring. Water systems may accelerate to triennial monitoring for water quality parameters at the tap if they have maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65mg/L, and the range of water quality parameters designated by the department under 567—paragraph 43.7(2)“f” as representing optimal corrosion control during two consecutive six-month monitoring periods.

e. Lead and copper source water monitoring requirements.

(1) Sample location, collection methods, and number of samples.

1. A water system that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with 41.4(1)“c” shall collect lead and copper source water samples in accordance with the following requirements regarding sample location, number of samples, and collection methods:

- Groundwater systems shall take a minimum of one sample at every entry point to the distribution system (source entry point) which is representative of each well after treatment. The system shall take one sample at the same source entry point unless conditions make another sampling location more representative of each source or treatment plant.

- Surface water systems and any system with a combination of surface water and groundwater shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

- If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions, when water is representative of all sources being used.

2. Where the results of sampling indicate an exceedance of maximum permissible source water levels established under 567—subparagraph 43.7(3)“b”(4), the department may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point. If a confirmation sample is taken for lead or copper, then the results of the initial and confirmation samples shall be averaged in determining compliance with the maximum permissible levels. Lead and copper analytical results below the detection limit shall be considered to be zero. Analytical results above the detection limit but below the practical quantification level (PQL) shall either be considered as the measured value or be considered one-half the PQL.

(2) Monitoring after system exceeds tap water action level. Any system which exceeds the lead or copper action level at the tap shall collect one source water sample from each entry point to the distribution system no later than six months after the end of the monitoring period during which the lead or copper

action level was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs or, if the department has established an alternate monitoring period, the last day of that period.

(3) Monitoring after installation of source water treatment. Any system which installs source water treatment pursuant to 567—subparagraph 43.7(3)“a”(3) shall collect an additional source water sample from each entry point to the distribution system during two consecutive six-month monitoring periods by the deadline specified.

(4) Monitoring frequency after the department specifies maximum permissible source water levels or determines that source water treatment is not needed.

1. A system shall monitor at the frequency specified below in cases where the department specifies maximum permissible source water levels under 567—subparagraph 43.7(3)“b”(4) or determines that the system is not required to install source water treatment under 567—subparagraph 43.7(3)“b”(2). A water system using only groundwater shall collect samples once during the three-year compliance period in effect when the department makes this determination. Such systems shall collect samples once during each subsequent compliance period. Triennial samples shall be collected every third calendar year. A public water system using surface water (or a combination of surface and groundwater) shall collect samples once during each year, the first annual monitoring period to begin during the year in which the department determination is made under this subparagraph.

2. A system using only groundwater is not required to conduct source water sampling for lead or copper if the system meets the action level for the specific contaminant in tap water samples during the entire source water sampling.

(5) Reduced monitoring frequency.

1. A water system using only groundwater may reduce the monitoring frequency for lead and copper in source water to once during each nine-year compliance cycle provided that the samples are collected no later than every ninth calendar year and if the system meets one of the following criteria:

- The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead or copper concentrations specified by the department in 567—subparagraph 43.7(3)“b”(4) during at least three consecutive compliance periods under 41.4(1)“e”(4)“1”; or

- The department has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under 41.4(1)“e”(4)“1,” the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

2. A water system using surface water (or a combination of surface water and groundwater) may reduce the monitoring frequency in 41.4(1)“e”(4)“1” to once during each nine-year compliance cycle provided that the samples are collected no later than every ninth calendar year and if that system meets one of the following criteria:

- The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the department in 567—subparagraph 43.7(3)“b”(4) for at least three consecutive years; or

- The department has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

3. A water system that uses a new source of water is not eligible for reduced monitoring for lead or copper until concentrations in samples collected from the new source during three consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified.

f. *Corrosivity monitoring protocol — special monitoring for corrosivity characteristics.* Suppliers of water for community public water systems shall collect samples from a representative entry point to the water distribution system for the purpose of analysis to determine the corrosivity characteristics of the water. The determination of corrosivity characteristics of water shall only include one round of sampling,

except in cases where the department concludes additional monitoring is necessary due to variability of the raw water sources. Sampling requirements and approved analytical methods are as follows:

(1) Surface water systems. Systems utilizing a surface water source either in whole or in part shall collect two samples per plant for the purpose of determining the corrosivity characteristics. One of these samples is to be collected during the midwinter months and the other during midsummer.

(2) Groundwater systems. Systems utilizing groundwater sources shall collect one sample per plant or source, except systems with multiple plants that do not alter the corrosivity characteristics identified in 41.4(1)“f”(3) or systems served by multiple wells drawing raw water from a single aquifer may, with departmental approval, be considered one treatment plant or source when determining the number of samples required.

(3) Corrosivity characteristics analytical parameters. Determination of corrosivity characteristics of water shall include measurements of pH, calcium hardness, alkalinity, temperature, total dissolved solids (total filterable residue), and calculation of the Langelier Index. In addition, sulfate and chloride monitoring may be required by the department. At the department’s discretion, the Aggressiveness Index test may be substituted for the Langelier Index test.

(4) Corrosivity indices methodology. The following methods must be used to calculate the corrosivity indices:

1. Aggressiveness Index—“ANSI/AWWA C401-93: AWWA Standard for the Selection of Asbestos Cement Pressure Pipe, 4”–16” for Water Distribution Systems,” American Water Works Association, Denver, CO.

2. Langelier Index—“Standard Methods for the Examination of Water and Wastewater,” 14th edition, American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710, (1975), Method 203, pp. 61-63.

(5) Distribution system construction materials. Community and nontransient noncommunity water supply systems shall identify whether the following construction materials are present in their distribution system and report to the department:

1. Lead from piping, solder, caulking, interior lining of distribution mains, alloys, and home plumbing.

2. Copper from piping and alloys, service lines, and home plumbing.

3. Galvanized piping, service lines, and home plumbing.

4. Ferrous piping materials such as cast iron and steel.

5. Asbestos cement pipe.

6. Vinyl lined asbestos cement pipe.

7. Coal tar lined pipes and tanks.

8. Pipe with asbestos cement lining.

g. Lead, copper, and water quality parameter analytical methods.

(1) Analytical methods. Analyses for alkalinity, calcium, conductivity, orthophosphate, pH, silica, and temperature may be performed by a Grade I, II, III, or IV certified operator meeting the requirements of 567—Chapter 81, any person under the supervision of a Grade I, II, III, or IV certified operator meeting the requirements of 567—Chapter 81, or a laboratory certified by the department to perform analysis under 567—Chapter 83. Analyses under this subrule for lead and copper shall only be conducted by laboratories that have been certified by the department, pursuant to 567—Chapter 83. The following methods must be used:

LEAD, COPPER AND WATER QUALITY PARAMETER ANALYTICAL METHODS

Contaminant	Methodology ⁹	Reference (Method Number)				
		EPA	ASTM ³	SM	SM Online ¹⁶	USGS ⁵ or Other
Alkalinity	Titrimetric		D1067-92B, 02B, 06B, 11B	2320 B ^{11, 15, 18}	2320 B-97	
	Electrometric titration					I-1030-85

Contaminant	Methodology ⁹	Reference (Method Number)				
		EPA	ASTM ³	SM	SM Online ¹⁶	USGS ⁵ or Other
Calcium	EDTA titrimetric		D511-93A, 03A, 09A, 14A	3500-Ca D ⁴	3500-Ca B-97	
				3500-Ca B ^{12, 15, 18}	3500-Ca B-97	
	Atomic absorption; direct aspiration		D511-93B, 03B, 09B, 14B	3111 B ^{4, 15, 18}	3111 B-99	
	Inductively coupled plasma	200.7 ²		3120 B ^{11, 15, 18}	3120 B-99	
	Ion chromatography		D6919-03, 09			
Chloride	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Rev. 4.2 ¹⁷				
	Ion chromatography	300.0 ⁸ , 300.1 ¹³	D4327-97, 03	4110 B ^{11, 15}	4550 B-00	
	Potentiometric titration			4500-Cl ⁻ D ^{11, 15}	4500-Cl ⁻ D-97	
	Argentometric titration		D512-89B (reapproved 1999), D512-04B	4500-Cl ⁻ B ^{11, 15}	4500-Cl ⁻ B-97	
	Capillary ion electrophoresis					D6508, Rev. 2 ¹⁴
Conductivity	Conductance		D1125-95A (reapproved 1999), 14A	2510 B ^{11, 15, 18}	2510 B-97	
Copper ⁶	Atomic absorption; furnace technique		D1688-95C, 02C, 07C, 12C	3113 B ^{4, 15, 18}	3113 B-99, 04, 10	
	Atomic absorption; direct aspiration		D1688-95A, 02A, 07A, 12A	3111 B ^{4, 15, 18}	3111 B-99	
	Inductively coupled plasma	200.7 ²		3120 B ^{11, 15, 18}	3120 B-99	
	Inductively coupled plasma; mass spectrometry	200.8 ²				
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Rev. 4.2 ¹⁷				
	Atomic absorption; platform furnace	200.9 ²				
Lead ⁶	Colorimetric					Hach Method 8026 ¹⁹ ; Hach Method 10272 ²⁰
	Atomic absorption; furnace technique		D3559-96D, 03D, 08D	3113 B ^{4, 15, 18}	3113 B-99, 04, 10	
	Inductively coupled plasma; mass spectrometry	200.8 ²				
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Rev. 4.2 ¹⁷				

Contaminant	Methodology ⁹	Reference (Method Number)				
		EPA	ASTM ³	SM	SM Online ¹⁶	USGS ⁵ or Other
	Atomic absorption; platform furnace technique Differential pulse anodic stripping voltammetry	200.9 ²				Method 1001 ¹⁰
pH	Electrometric	150.1 ¹ 150.2 ¹	D1293-95, 99, 12	4500-H ⁺ B ^{11, 15, 18}	4500-H ⁺ B-00	
Orthophosphate (Unfiltered, no digestion or hydrolysis)	Colorimetric, automated, ascorbic acid	365.1 ⁸		4500-P F ^{11, 15, 18}	4500-P F-99	Thermo Fisher Discrete Analyzer ²¹
	Colorimetric, ascorbic acid, single reagent		D515-88A	4500-P E ^{11, 15, 18}	4500-P E-99	I-1602-85
	Colorimetric, phosphomolybdate; Automated-segmented flow					I-2601-90 ⁸
	Automated discrete					I-2598-85
	Ion chromatography	300.0 ⁷ , 300.1 ¹³	D4327-97, 03, 11	4110 B ^{11, 15, 18}	4110 B-00	D6508, Rev. 2 ¹⁴
Silica	Capillary ion electrophoresis					
	Colorimetric, molybdate blue					I-1700-85
	Automated-segmented flow					I-2700-85
	Colorimetric					
	Molybdosilicate					
	Heteropoly blue					
	Automated method for molybdate-reactive silica					
	Inductively coupled plasma ⁶	200.7 ²				
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Rev. 4.2 ¹⁷				
Sulfate						
	Ion chromatography	300.0 ⁷ , 300.1 ¹³	D4327-97, 03	4110 ^{11, 15, 18}	4110 B-00	
	Automated methylthymol blue	375.2 ⁷		4500-SO ₄ F ^{11, 15}	4500-SO ₄ ⁻² F-97	
	Gravimetric			4500-SO ₄ C ^{11, 15}	4500-SO ₄ ⁻² C-97	
				4500-SO ₄ D ^{11, 15}	4500-SO ₄ ⁻² D-97	

Contaminant	Methodology ⁹	Reference (Method Number)				
		EPA	ASTM ³	SM	SM Online ¹⁶	USGS ⁵ or Other
	Turbidimetric		D516-90, 02, 07	4500-SO ₄ E ¹¹ , 15	4500-SO ₄ -2 E-97	D6508, Rev. 2 ¹⁴
	Capillary ion electrophoresis					
Temperature	Thermometric			2550 B ¹¹ , 15, 18	2550-00, 10	
Total Filterable Residue (TDS)	Gravimetric			2540 C ¹¹ , 15	2540 C-97	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA's Drinking Water Docket, 401 M Street, SW, Washington, DC 20460 (telephone: (202)260-3027); or at the Office of Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

¹“Methods for Chemical Analysis of Water and Wastes,” EPA-600/4-79-020, March 1983. Available at NTIS as PB84-128677.

²“Methods for the Determination of Metals in Environmental Samples,” EPA-600/4-91-010, June 1991. Available at NTIS as PB91-231498.

³Annual Book of ASTM Standards, 1994, 1996, 1999, or 2003, Vols. 11.01 and 11.02, American Society for Testing and Materials, International; the methods listed are the only versions that may be used. The previous versions of D1688-95A and D1688-95C (copper), D3559-95D (lead), D1293-95 (pH), D1125-91A (conductivity), and D859-94 (silica) are also approved. These previous versions, D1688-90A, C, D3559-90D, D1293-84, D1125-91A and D859-88, respectively, are located in the Annual Book of ASTM Standards, 1994, Volume 11.01. Copies may be obtained from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428 or www.astm.org.

⁴18th and 19th editions of Standard Methods for the Examination of Water and Wastewater, 1992 and 1995, respectively, American Public Health Association. Either edition may be used. Copies may be obtained from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

⁵Techniques of Water Resources Investigation of the U.S. Geological Survey, Book 5, Chapter A-1, 3rd ed., 1989. Available from Information Services, U.S. Geological Survey, Federal Center, Box 25286, Denver, CO 80225-0425.

⁶Samples may not be filtered. Samples that contain less than 1 NTU (Nephelometric turbidity unit) and are properly preserved (concentrated nitric acid to pH < 2) may be analyzed directly (without digestion) for total metals; otherwise, digestion is required. When digestion is required, the total recoverable technique as defined in the method must be used.

⁷“Methods for the Determination of Inorganic Substances in Environmental Samples,” EPA/600/R-93/100, August 1993. Available at NTIS as PB94-120821.

⁸“Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments, Open File Report 93-125.” Available from Information Services, U.S. Geological Survey, Federal Center, Box 25286, Denver, CO 80225-0425.

⁹Because MDLs reported in EPA Methods 200.7 and 200.9 were determined using a 2X preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct analysis (i.e., no sample digestion) will be higher. Preconcentration may be required for direct analysis of lead by Methods 200.9, 3113B, and 3559-90D unless multiple in-furnace depositions are made.

¹⁰The description for Method 1001 is available from Palintest, Ltd., 21 Kenton Lands Road, P.O. Box 18395, Erlanger, KY 41018; or from the Hach Company, P.O. Box 389, Loveland, CO 80538.

¹¹The 18th, 19th, and 20th editions of Standard Methods for the Examination of Water and Wastewater, 1992, 1995, and 1998, respectively, American Public Health Association. Any edition may be used, except that the versions of 3111B and 3113B in the 20th edition may not be used. Copies may be obtained from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

¹²The 20th edition of Standard Methods for the Examination of Water and Wastewater, 1998, American Public Health Association. Copies may be obtained from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

¹³“Methods for the Determination of Organic and Inorganic Compounds in Drinking Water,” Vol. 1, EPA 815-R-00-014, August 2000. Available at NTIS, PB2000-106981.

¹⁴Method D6508, Rev. 2, “Test Method for Determination of Dissolved Inorganic Anions in Aqueous Matrices Using Capillary Ion Electrophoresis and Chromate Electrolyte,” available from Waters Corp., 34 Maple Street, Milford, MA 01757; telephone: (508)482-2131.

¹⁵Standard Methods for the Examination of Water and Wastewater, 21st edition (2005), American Public Health Association. Available from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

¹⁶Standard Methods Online is available at www.standardmethods.org. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

¹⁷EPA Method 200.5, Revision 4.2: “Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry,” 2003. EPA/600/R-06/115. Available at www.nemi.gov.

¹⁸Standard Methods for the Examination of Water and Wastewater, 22nd edition (2012), American Public Health Association. Available from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

¹⁹Hach Company. “Hach Method 8026 – Spectrophotometric Measurement of Copper in Finished Drinking Water,” December 2015, Revision 1.2. Available from www.hach.com.

²⁰Hach Company. “Hach Method 10272 – Spectrophotometric Measurement of Copper in Finished Drinking Water,” December 2015, Revision 1.2. Available from www.hach.com.

²¹Thermo Fisher. “Thermo Fisher Scientific Drinking Water Orthophosphate Method for Thermo Scientific Gallery Discrete Analyzer,” February 2016. Revision 5. Thermo Fisher Scientific, Ratatie 2 01620 Vantaa, Finland.

(2) Certified laboratory requirements. Lead and copper analyses under this subrule shall only be conducted by laboratories that have been certified by the department and are in compliance with the requirements of 567—Chapter 83.

(3) All lead and copper levels measured between the practical quantitation limit (PQL) and method detection limit (MDL) must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in 567—paragraph 83.6(7) “a”(5)“2.” All levels below the lead and copper MDLs must be reported as zero.

41.4(2) Lead, copper, and corrosivity regulation by the setting of an MCL. Reserved.
[ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—41.5(455B) Organic chemicals.

41.5(1) MCLs and other requirements for organic chemicals. Maximum contaminant levels for two classes of organic chemical contaminants specified in 41.5(1) “b” apply to community water systems and nontransient noncommunity water systems as specified herein. The two referenced organic chemical classes are volatile organic chemicals (VOCs) and synthetic organic chemicals (SOCs).

The requirements also contain analytical method requirements and monitoring requirements referenced in 41.5(1) “b” and “c.” Best available technology (BAT) for control of these organic contaminants is referenced in 567—paragraph 43.3(10) “a.”

a. Applicability. The maximum contaminant levels for volatile and synthetic organic contaminants apply to community and nontransient noncommunity water systems. Compliance with the volatile and synthetic organic contaminant maximum contaminant level is calculated pursuant to 41.5(1) “b.”

b. Maximum contaminant levels (MCLs) and analytical methodology for organic compounds. The maximum contaminant levels for organic chemicals are listed in the table in subparagraph 41.5(1) “b”(1). Analyses for the contaminants in this subrule shall be conducted using the following methods, or their equivalent as approved by EPA. For analysis of a compliance sample, a certified laboratory must be able to achieve at least the method detection limit for the specific contaminant as listed in the following table.

(1) Table:

ORGANIC CHEMICAL CONTAMINANTS, CODES, MCLS, ANALYTICAL METHODS,
AND DETECTION LIMITS

Contaminant	EPA Contaminant Code	MCL (mg/L)	Methodology ¹	Detection Limit (mg/L)
Volatile Organic Chemicals (VOCs):				
Benzene	2990	0.005	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Carbon tetrachloride	2982	0.005	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
Chlorobenzene (mono)	2989	0.1	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,2-Dichlorobenzene (ortho)	2968	0.6	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,4-Dichlorobenzene (para)	2969	0.075	502.2, 524.2, 524.3, 524.4 ⁷	0.0005

Contaminant	EPA Contaminant Code	MCL (mg/L)	Methodology ¹	Detection Limit (mg/L)
1,2-Dichloroethane	2980	0.005	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,1-Dichloroethylene	2977	0.007	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
cis-1,2-Dichloroethylene	2380	0.07	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
trans-1,2-Dichloroethylene	2979	0.1	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Dichloromethane	2964	0.005	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,2-Dichloropropane	2983*	0.005	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Ethylbenzene	2992	0.7	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Styrene	2996	0.1	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Tetrachloroethylene	2987	0.005	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
Toluene	2991	1	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,1,1-Trichloroethane	2981	0.2	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
Trichloroethylene	2984	0.005	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
1,2,4-Trichlorobenzene	2378	0.07	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,1,2-Trichloroethane	2985	0.005	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
Vinyl chloride	2976	0.002	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Xylenes (total)	2955*	10	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Synthetic Organic Chemicals (SOCs):				
Alachlor ³	2051	0.002	505, 507, 508.1, 525.2, 525.3, 551.1	0.0002
Aldicarb	2047	0.003	531.1, 6610	0.0005
Aldicarb sulfone	2044	0.002	531.1, 6610	0.0008
Aldicarb sulfoxide	2043	0.004	531.1, 6610	0.0005
Atrazine ³	2050	0.003	505, 507, 508.1, 523, 525.2, 525.3, 536, 551.1, Syngenta AG-625 ⁵	0.0001
Benzo(a)pyrene	2306	0.0002	525.2, 525.3, 550, 550.1	0.00002
Carbofuran	2046	0.04	531.1, 531.2, 6610, 6610B, 6610 B-04 ²	0.0009
Chlordane ³	2959	0.002	505, 508, 508.1, 525.2, 525.3	0.0002
2,4-D ⁶ (as acids, salts, and esters)	2105	0.07	515.1, 515.2, 515.3, 515.4, 555, D5317-93, 98 (Reapproved 2003), 6610B, 6640-B, 6640 B-01, 6640 B-06	0.0001

Contaminant	EPA Contaminant Code	MCL (mg/L)	Methodology ¹	Detection Limit (mg/L)
Dalapon	2031	0.2	515.1, 515.3, 515.4, 552.1, 552.2, 552.3, 557, 6640, 6610B, 6640-B, 6640 B-01, 6640 B-06	0.001
1,2-Dibromo-3-chloropropane (DBCP)	2931	0.0002	504.1, 524.3, 551.1	0.00002
Di(2-ethylhexyl)adipate	2035	0.4	506, 525.2, 525.3	0.0006
Di(2-ethylhexyl)phthalate	2039	0.006	506, 525.2, 525.3	0.0006
Dinoseb ⁶	2041	0.007	515.1, 515.2, 515.3, 515.4, 555, 6610B, 6640-B, 6640 B-01, 6640 B-06	0.0002
Diquat	2032	0.02	549.2	0.0004
Endothall	2033	0.1	548.1	0.009
Endrin ³	2005	0.002	505, 508, 508.1, 525.2, 525.3, 551.1	0.00001
Ethylene dibromide (EDB)	2946	0.00005	504.1, 524.3, 551.1	0.00001
Glyphosate	2034	0.7	547, 6651, 6651B, 6651 B-00, 6640 B-05	0.006
Heptachlor ³	2065	0.0004	505, 508, 508.1, 525.2, 525.3, 551.1	0.00004
Heptachlor epoxide ³	2067	0.0002	505, 508, 508.1, 525.2, 525.3, 551.1	0.00002
Hexachlorobenzene ³	2274	0.001	505, 508, 508.1, 525.2, 525.3, 551.1	0.0001
Hexachlorocyclopentadiene ³	2042	0.05	505, 508, 508.1, 525.2, 525.3, 551.1	0.0001
Lindane (gamma BHC) ³	2010	0.0002	505, 508, 508.1, 525.2, 525.3, 551.1	0.00002
Methoxychlor ³	2015	0.04	505, 508, 508.1, 525.2, 525.3, 551.1	0.0001
Oxamyl	2036	0.2	531.1, 531.2, 6610, 6610B, 6610 B-04 ²	0.002
Pentachlorophenol	2326	0.001	515.1, 515.2, 515.3, 515.4, 525.2, 525.3, 555, D5317-93, 98 (Reapproved 2003), 6610B, 6640-B, 6640 B-01, 6640 B-06	0.00004
Picloram ^{3, 6}	2040	0.5	515.1, 515.2, 515.3, 515.4, 555, D5317-93, 98 (Reapproved 2003), 6610B, 6640-B, 6640 B-01, 6640 B-06	0.0001
Polychlorinated biphenyls ⁴ (as decachlorobiphenyl) (as Aroclors) ³	2383	0.0005	508A 505, 508, 508.1, 525.2, 525.3	0.0001
Simazine ³	2037	0.004	505, 507, 508.1, 523, 525.2, 525.3, 536, 551.1	0.00007
2,3,7,8-TCDD (dioxin)	2063	3x10 ⁻⁸	1613	5x10 ⁻⁹
2,4,5-TP ⁶ (Silvex)	2110	0.05	515.1, 515.2, 515.3, 515.4, 555, D5317-93, 98 (Reapproved 2003), 6610B, 6640-B, 6640 B-01, 6640 B-06	0.0002

Contaminant	EPA Contaminant Code	MCL (mg/L)	Methodology ¹	Detection Limit (mg/L)
Toxaphene ³	2020	0.003	505, 508, 508.1, 525.2, 525.3	0.001

*As of January 1, 1999, the contaminant codes for the following compounds were changed from the Iowa Contaminant Code to the EPA Contaminant Code:

Contaminant	Iowa Contaminant Code (Old)	EPA Contaminant Code (New)
1,2 Dichloropropane	2325	2983
Xylenes (total)	2974	2955

¹Analyses for the contaminants in this section shall be conducted using the following EPA methods or their equivalent as approved by EPA. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW, Room 3334, Washington, DC 20460 (telephone: (202)566-2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202)741-6030, or via Internet at www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

The following methods are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (telephone: (800)553-6847).

Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88-039, December 1988, Revised July 1991 (NTIS PB91-231480): Methods 508A and 515.1.

Methods for the Determination of Organic Compounds in Drinking Water—Supplement I, EPA-600/4-90-020, July 1990 (NTIS PB91-146027): Methods 547, 550, 550.1.

Methods for the Determination of Organic Compounds in Drinking Water—Supplement II, EPA-600/R-92-129, August 1992 (NTIS PB92-207703): Methods 548.1, 552.1, 555.

Methods for the Determination of Organic Compounds in Drinking Water—Supplement III, EPA-600/R-95-131, August 1995 (NTIS PB95-261616): Methods 502.2, 504.1, 505, 506, 507, 508, 508.1, 515.2, 524.2, 525.2, 531.1, 551.1, 552.2.

EPA Method 523, "Determination of Triazine Pesticides and Their Degradates in Drinking Water by Gas Chromatography/Mass Spectrometry (GC/MS)," 2011. EPA-815-R-11-002. Available at www.nepis.epa.gov.

EPA Method 524.3, Version 1.0. "Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry," June 2009. EPA 815-B-09-009. Available at www.nemi.gov.

EPA Method 525.3, "Determination of Semivolatile Organic Chemicals in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatograph/Mass Spectrometry (GC/MS)," 2012. EPA/600/R-12-010. Available at www.nepis.epa.gov.

EPA Method 536, "Determination of Triazine Pesticides and Their Degradates in Drinking Water by Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry (LC/ESI-MS/MS)," 2007. EPA/815-B-07-002. Available at www.nepis.epa.gov.

EPA Method 557, "Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC-ESI-MS/MS)," September 2009. EPA 815-B-09-012. Available at www.nemi.gov.

Method 1613 "Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope-Dilution HRGC/HRMS," EPA-821-B-94-005, October 1994 (NTIS PB95-104774).

The following American Public Health Association (APHA) documents are available from APHA, 800 I Street, NW, Washington, DC 20001-3710.

Supplement to the 18th Edition of Standard Methods for the Examination of Water and Wastewater, 1994, Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995, 20th edition, 1998, 21st edition, 2005, or 22nd edition, 2012 (any of these editions may be used), APHA: Method 6610 and (carbofuran and oxamyl only) 6610B and 6610 B-04; Method 6640B (21st and 22nd editions only) and SM online 6640 B-01 for 2,4-D, 2,4,5-TP Silvex, dalapon, dinoseb, pentachlorophenol, and picloram; Method 6651B (21st and 22nd editions only) and SM online 6670-B-00 for glyphosate.

Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992, 19th edition, 1995, or 20th edition, 1998, (any of these editions may be used), APHA: Method 6651.

The following American Society for Testing and Materials (ASTM) method is available from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

Annual book of ASTM Standards, 1999, Vol. 11.02 (or any edition published after 1993), ASTM: D5317-93, 98 (Reapproved 2003).

Methods 515.3 and 549.2 are available from U.S. EPA NERL, 26 W. Martin Luther King Drive, Cincinnati, OH 45268.

Method 515.4, "Determination of Chlorinated Acids in Drinking Water by Liquid-Liquid Microextraction, Derivatization and Fast Gas Chromatography with Electron Capture Detection," Revision 1.0, April 2000, EPA 815/B-00/001 and EPA Method 552.3, "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-liquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection," Revision 1.0, July 2003, EPA 815-B-03-002, available at www.epa.gov/safewater/methods/sourcalt.html.

Method 531.2, "Measurement of n-Methylcarbamoyloximes and n-Methylcarbamates in Water by Direct Aqueous Injection HPLC with Postcolumn Derivatization," Revision 1.0, September 2001, EPA 815/B-01/002, available at www.epa.gov/safewater/methods/sourcalt.html.

Syngenta AG-625 Method, "Atrazine in Drinking Water by Immunoassay," February 2001, is available from Syngenta Crop Protection, Inc., 410 Swing Road, P.O. Box 18300, Greensboro, NC 27419, telephone (336)632-6000.

Other required analytical test procedures germane to the conduct of these analyses are contained in Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994 (NTIS PB95-104766).

²Standard Methods Online is available at www.standardmethods.org. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

³Substitution of the detector specified in Method 505, 507, 508, or 508.1 for the purpose of achieving lower detection limits is allowed as follows. Either an electron capture or nitrogen-phosphorus detector may be used provided all regulatory requirements and quality control criteria are met.

⁴PCBs are qualitatively identified as Aroclors and measured for compliance purposes as decachlorobiphenyl. Users of Method 505 may have more difficulty in achieving the required detection limits than users of Method 508, 508.1, or 525.2.

⁵This method may not be used for the analysis of atrazine in any system where chlorine dioxide is used in the drinking water treatment. In samples from all other systems, any result for atrazine generated by Method AG-625 that is greater than one-half the MCL (i.e., greater than 0.0015 mg/L) must be confirmed using another approved method for this contaminant and should use additional volume of the original sample collected for compliance monitoring. In instances where a result from Method AG-625 triggers such confirmatory testing, the confirmatory result is to be used to determine compliance.

⁶Accurate determination of the chlorinated esters requires hydrolysis of the sample as described in EPA Methods 515.1, 515.2, 515.3, 515.4, and 555, and ASTM Method D5317-93, 98 (Reapproved 2003).

⁷EPA Method 524.4, Version 1.0. "Measurement of Purgeable Organic Compounds in Water by Gas Chromatography/Mass Spectrometry Using Nitrogen Purge Gas," May 2013, EPA 815-R-13-002.

(2) Organic chemical compliance calculations. Compliance with 41.5(1) "b"(1) shall be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL listed in 41.5(1) "b"(1), the system is in violation of the MCL. If a system fails to collect the required number of samples, compliance will be based on the total number of samples collected. If a sample result is less than the detection limit, zero will be used when calculating the running annual average. If the system is in violation of an MCL, the water supplier is required to give notice to the department in accordance with 567—subrule 42.4(1) and to notify the public as required by 567—42.1(455B).

1. Systems monitoring more than once per year for VOC or SOC contaminants. For systems which monitor more than once per year, compliance with the MCL is determined by a running annual average of all samples collected at each sampling point.

2. Systems monitoring annually or less frequently for VOC contaminants. Systems which monitor annually or less frequently and whose VOC sample result exceeds the MCL must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling. However, if any sample result will cause the running annual average to exceed the MCL at any sampling point, the system is immediately out of compliance with the MCL.

3. Systems monitoring annually or less frequently for SOC contaminants. Systems which monitor annually or less frequently and whose SOC sample result exceeds the regulatory detection limit specified in subparagraph 41.5(1) "b"(1) must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling. However, if any sample result will cause the running annual average to exceed the MCL at any sampling point, the system is immediately out of compliance with the MCL.

(3) Treatment techniques for acrylamide and epichlorohydrin. Each public water supply system must certify annually in writing to the department (using third-party or manufacturer's certification) that when acrylamide and epichlorohydrin are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the levels specified as follows:

Acrylamide = 0.05% dosed at 1 ppm (or equivalent)

Epichlorohydrin = 0.01% dosed at 20 ppm (or equivalent)

Certifications can rely on information provided by manufacturers or third parties, as approved by the department.

c. *Organic chemical monitoring requirements.* Each public water system shall monitor at the time designated within each compliance period. All new systems or systems that use a new source of water must demonstrate compliance with the MCLs within the time period specified by the department. The system must also comply with the initial sampling frequencies specified by the department to ensure the system can demonstrate compliance with the MCLs. A source of water that is determined by the department to be a new source/entry point is considered to be a new source for the purposes of paragraph 41.5(1) "c." Routine

and increased monitoring frequencies shall be conducted in accordance with the requirements in this paragraph.

(1) Routine volatile organic chemical (VOC) monitoring requirements. Beginning on January 1, 1993, community water supplies and NTNC water supplies shall conduct monitoring of the contaminants listed in 41.5(1)“b”(1) for the purpose of determining compliance with the maximum contaminant level.

(2) VOC monitoring protocol.

1. VOC groundwater monitoring protocol. Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a source/entry point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

2. VOC surface water monitoring protocol. Surface water systems (and combined surface/groundwater systems) shall take a minimum of one sample at each entry point to the distribution system after treatment (hereafter called a source/entry point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

3. Multiple sources. If the system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water representative of all sources is being used). If a representative sample of all water sources cannot be obtained, as determined by the department, separate source/entry points with the appropriate monitoring requirements will be assigned by the department.

4. Initial VOCs monitoring frequency. Each community and nontransient noncommunity water system shall take four consecutive quarterly samples for each contaminant listed in 41.5(1)“b”(1) during each compliance period, beginning in the initial compliance period. If the initial monitoring for contaminants listed in 41.5(1)“b”(1) has been completed by December 31, 1992, and the system did not detect any contaminant listed in 41.5(1)“b”(1), then each groundwater and surface water system shall take one sample annually beginning with the initial compliance period.

5. Reduced VOC monitoring for groundwater systems. After a minimum of three years of annual sampling, the department may allow groundwater systems with no previous detection of any contaminant listed in 41.5(1)“b”(1) to take one sample during each compliance period.

6. VOC monitoring waivers. Each community and nontransient noncommunity groundwater system which does not detect a contaminant listed in 41.5(1)“b”(1) may apply to the department for a waiver from the requirements of 41.5(1)“c”(2)“4” and “5” after completing the initial monitoring. A waiver shall be effective for no more than six years (two compliance periods). The department may also issue waivers to small systems for the initial round of monitoring for 1,2,4-trichlorobenzene. Detection is defined as greater than or equal to 0.0005 mg/L.

7. Bases of a VOC monitoring waiver. The department may grant a waiver if the department finds that there has not been any knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

- Previous analytical results.
- The proximity of the system to a potential point or nonpoint source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities.
- The environmental persistence and transport of the contaminants.
- The number of persons served by the public water system and the proximity of a smaller system to a larger system, and
- How well the water source is protected against contamination, such as whether it is a surface or groundwater system. Groundwater systems must consider factors such as depth of the well, the type of soil, and wellhead protection. Surface water systems must consider watershed protection.

8. VOC monitoring waiver requirements for groundwater systems. As a condition of the waiver, a groundwater system must take one sample at each sampling point during the time the waiver is effective (i.e., one sample during two compliance periods or six years) and update its vulnerability assessment considering the factors listed in 41.5(1)“c”(2)“7.” Based on this vulnerability assessment the department must reconfirm that the system is nonvulnerable. If the department does not reconfirm within three years of the initial vulnerability determination, then the waiver is invalidated and the system is required to sample annually as specified in 41.5(1)“c”(2)“4.”

9. VOC monitoring waiver requirements for surface water systems. Each community and nontransient noncommunity surface water system which does not detect a contaminant listed in 41.5(1)“b”(1) may apply to the department for a waiver from the requirements of 41.5(1)“c”(2)“4” after completing the initial monitoring. Systems meeting this criterion must be determined by the department to be nonvulnerable based on a vulnerability assessment during each compliance period. Each system receiving a waiver shall sample at the frequency specified by the department (if any).

10. Increased VOC monitoring. If a contaminant listed in 41.5(1)“b”(1) is detected at a level exceeding 0.0005 mg/L in any sample, then:

The system must monitor quarterly at each sampling point which resulted in a detection.

The department may decrease the quarterly monitoring requirement specified in 41.5(1)“c”(2)“4” provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case shall the department make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

If the department determines that the system is reliably and consistently below the MCL, the department may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter(s) which previously yielded the highest analytical result.

Systems which have three consecutive annual samples with no detection of a contaminant may apply to the department for a waiver as specified in 41.5(1)“c”(2)“6.”

Groundwater systems which have detected one or more of the following two-carbon organic compounds: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene shall monitor quarterly for vinyl chloride. A vinyl chloride sample shall be taken at each sampling point at which one or more of the two-carbon organic compounds was detected. If the results of the first analysis do not detect vinyl chloride, the department may reduce the quarterly monitoring frequency of vinyl chloride monitoring to one sample during each compliance period. Surface water systems are required to monitor for vinyl chloride as specified by the department.

11. VOCs reliably and consistently below the MCL. Systems which violate the MCL requirements of 41.5(1)“b”(1) must monitor quarterly. After a minimum of four consecutive quarterly samples which show the system is in compliance and the department determines that the system is reliably and consistently below the maximum contaminant level, the system may monitor at the frequency and times specified in 41.5(1)“c”(2)“10,” third unnumbered paragraph (following approval by the department).

(3) Routine and repeat synthetic organic chemical (SOC) monitoring requirements. Analysis of the synthetic organic contaminants listed in 41.5(1)“b”(1) for the purposes of determining compliance with the maximum contaminant level shall be conducted as follows:

1. SOC groundwater monitoring protocols. Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a source/entry point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

2. SOC surface water monitoring protocols. Surface water systems shall take a minimum of one sample at each entry point to the distribution system after treatment (hereafter called a source/entry point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant. For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

3. Multiple sources. If the system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during

periods of normal operating conditions (i.e., when water representative of all sources is being used). If a representative sample of all water sources cannot be obtained, as determined by the department, separate source/entry points with the appropriate monitoring requirements will be assigned by the department.

4. SOC monitoring frequency. Community and nontransient noncommunity water systems shall take four consecutive quarterly samples for each contaminant listed in 41.5(1) "b"(1) during each compliance period beginning with the compliance period starting January 1, 1993. Systems serving more than 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of two quarterly samples in one year during each repeat compliance period. Systems serving less than or equal to 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.

5. SOC monitoring waivers. Each community and nontransient water system may apply to the department for a waiver from the requirements of 41.5(1) "c"(3) "4." A system must reapply for a waiver for each compliance period.

6. Bases of an SOC monitoring waiver. The department may grant a waiver if the department finds that there has been no knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If previous use of the contaminant is unknown or it has been used previously, then the department shall determine whether a waiver may be granted by considering:

- Previous analytical results.
- The proximity of the system to a potential point or nonpoint source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities. Nonpoint sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, home and gardens, and other land application uses.
- The environmental persistence and transport of the pesticide or PCBs.
- How well the water source is protected against contamination due to such factors as depth of the well and the type of soil and the integrity of the well casing.
- Elevated nitrate levels at the water supply source, and
- Use of PCBs in equipment used in the production, storage, or distribution of water (i.e., PCBs used in pumps and transformers).

7. Increased SOC monitoring. If a synthetic organic contaminant listed in 41.5(1) "b"(1) is detected in any sample, then:

- Each system must monitor quarterly at each sampling point which resulted in a detection.
- The department may decrease the quarterly SOC monitoring requirement if the system is reliably and consistently below the maximum contaminant level. In no case shall the department make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.
- After the department determines the system is reliably and consistently below the maximum contaminant level, the system may monitor annually. Systems which monitor annually must monitor during the quarter that previously yielded the highest analytical result.
- Systems which have three consecutive annual samples with no detection of a contaminant may apply to the department for a waiver as specified in 41.5(1) "c"(3) "6."
- If monitoring results in detection of one or more of certain related contaminants (aldicarb, aldicarb sulfone, aldicarb sulfoxide, heptachlor, and heptachlor epoxide), then subsequent monitoring shall analyze for all related contaminants.

8. MCL violation and reliably/consistently below the MCL. Systems which violate the requirements of 41.5(1) "b" must monitor quarterly. After a minimum of four quarterly samples show the system is in compliance and the department determines the system is reliably and consistently below the MCL, the system shall monitor at the frequency specified in 41.5(1) "c"(3) "7."

(4) Organic chemical (SOC and VOC) confirmation samples. The department may require a confirmation sample for positive or negative results. If a confirmation sample is required by the

department, the result must be averaged with the first sampling result and the average is used for the compliance determination as specified by 41.5(1)“b”(2). The department has discretion to disregard results of obvious sampling errors from this calculation.

(5) Grandfathered organic chemical (SOC and VOC) data. The department may allow the use of monitoring data collected after January 1, 1988, for VOCs and January 1, 1990, for SOC's required under Section 1445 of the Safe Drinking Water Act for purposes of initial monitoring compliance. If the data are generally consistent with the other requirements in this subparagraph, the department may use such data (i.e., a single sample rather than four quarterly samples) to satisfy the initial monitoring requirement for the initial compliance period beginning January 1, 1993. Systems which use grandfathered samples for VOCs and did not detect any contaminants listed in 41.5(1)“b”(1) shall begin monitoring annually in accordance with 41.5(1)“c”(2) beginning January 1, 1993.

(6) Increased organic chemical (SOC and VOC) monitoring. The department may increase the required monitoring frequency, where necessary, to detect variations within the system (e.g., fluctuations in concentration due to seasonal use, changes in water source, changes to treatment facilities or normal operation thereof).

(7) Organic chemical (SOC and VOC) vulnerability assessment criteria. Vulnerability of each public water system shall be determined by the department based upon an assessment of the following factors.

1. VOC vulnerability assessment criteria—previous monitoring results. A system will be classified vulnerable if any sample was analyzed to contain one or more contaminants listed in 41.5(1)“b”(1)-(VOCs) or 41.5(1)“b”(3) except for trihalomethanes or other demonstrated disinfection by-products.

2. SOC vulnerability assessment criteria—previous monitoring results. A system will be classified vulnerable if any sample was analyzed to contain one or more contaminants listed in 41.5(1)“b”(2)-(SOCs) or 41.5(1)“b”(3) except for trihalomethanes or other demonstrated disinfection by-products.

3. Proximity of surface water supplies to commercial or industrial use, disposal or storage of volatile synthetic organic chemicals. Surface waters which withdraw water directly from reservoirs are considered vulnerable if the drainage basin upgradient and within two miles of the shoreline at the maximum water level contains major transportation facilities such as primary highways or railroads or any of the contaminant sources listed in this subparagraph. Surface water supplies which withdraw water directly from flowing water courses are considered vulnerable if the drainage basin upgradient and within two miles of the water intake structure contains major transportation facilities such as primary highways or railroads or any of the contaminant sources listed in this subparagraph.

4. Proximity of supplies to commercial or industrial use, disposal or storage of volatile synthetic organic chemicals. Wells that are not separated from sources of contamination by at least the following distances will be considered vulnerable.

<u>Sources of Contamination</u>	<u>Shallow Wells as defined in 567—40.2(455B)</u>	<u>Deep Wells as defined in 567—40.2(455B)</u>
Sanitary and industrial point discharges	400 ft	400 ft
Mechanical waste treatment plants	400 ft	200 ft
Lagoons	1,000 ft	400 ft
Chemical and mineral storage (aboveground)	200 ft	100 ft
Chemical and mineral storage including underground storage tanks on or below ground	400 ft	200 ft
Solid waste disposal site	1,000 ft	1,000 ft

5. A system is deemed to be vulnerable for a period of three years after any positive measurement of one or more contaminants listed in 41.5(1)“b”(1) except for trihalomethanes or other demonstrated disinfection by-products.

(8) PCB analytical methodology. Analysis for PCBs shall be conducted using the methods in 41.5(1)“b”(1) and as follows:

1. Each system which monitors for PCBs shall analyze each sample using Method 505, 508, 508.1, or 525.2. Users of Method 505 may have more difficulty in achieving the required Aroclor detection limits than users of Method 508, 508.1, or 525.2.

2. If PCBs (as one of seven Aroclors) are detected in any sample analyzed using Method 505 or 508, the system shall reanalyze the sample using Method 508A to quantitate PCBs as decachlorobiphenyl.

PCB AROCLOR DETECTION LIMITS

<u>Aroclor</u>	<u>Detection Limit (mg/L)</u>
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001
1260	0.0002

3. Compliance with the PCB MCL shall be determined based upon the quantitative results of analyses using Method 508A.

d. Best available technology(ies) (BATs). Rescinded IAB 8/11/99, effective 9/15/99.

e. Total trihalomethanes sampling, analytical and other requirements. Rescinded IAB 1/7/04, effective 2/11/04.

f. Analytical procedures—organics. Rescinded IAB 1/7/04, effective 2/11/04.

41.5(2) Organic chemicals occurring as (nontrihalomethane) disinfection by-products. Reserved.
[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—41.6(455B) Disinfection byproducts maximum contaminant levels and monitoring requirements.

41.6(1) Stage 1 disinfection byproducts requirements.

a. Applicability.

(1) This rule establishes criteria under which CWS and NTNC public water supply systems that add a chemical disinfectant to the water in any part of the drinking water treatment process or which provide water that contains a chemical disinfectant must modify their practices to meet the MCLs listed in this rule and the maximum residual disinfectant levels (MRDL) and treatment technique requirements for disinfection byproduct precursors listed in 567—43.6(455B).

(2) Rescinded IAB 1/7/04, effective 2/11/04.

(3) Compliance dates for this rule are based upon the source water type and the population served. Systems are required to comply with this rule as follows, unless otherwise noted. The department may assign an earlier monitoring period as part of the operation permit, but compliance with the maximum contaminant level is not required until the dates stated below.

1. CWS and NTNC systems which use surface water or groundwater under the direct influence of surface water in whole or in part and which serve 10,000 or more persons must comply with this rule beginning January 1, 2002.

2. All other CWS and NTNC systems covered by 41.6(1)“a”(1) must comply with this rule by January 1, 2004.

(4) Consecutive systems. Consecutive systems that provide water containing a disinfectant or oxidant are required to comply with this rule.

(5) Systems with multiple water sources. Systems with water sources that are used independently from each other, are not from the same source as determined by the department, or do not go through identical treatment processes are required to conduct the monitoring for the applicable disinfectants or oxidants and disinfection byproducts during operation of each source. The system must comply with this rule during the use of each water source.

b. Maximum contaminant levels for disinfection byproducts.

(1) The maximum contaminant levels (MCLs) for disinfection byproducts are as follows:

Disinfection byproduct	MCL (mg/L)
Bromate	0.010
Chlorite	1.0

Disinfection byproduct	MCL (mg/L)
Haloacetic acids (HAA5)	0.060
Total trihalomethanes (TTHM)*	0.080

*The TTHM MCL changed from 0.10 mg/L to 0.080 mg/L effective January 1, 2002, for CWS serving at least 10,000 people and effective January 1, 2004, for all other CWS and NTNC systems which are subject to this rule.

(2) Beginning on the date listed in the following table, a system must comply with the total trihalomethanes MCL and the haloacetic acid MCL as a locational running annual average at each monitoring location.

System Size (number of people served)	Date system must comply with MCL at each sampling location*
Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system	
System serving at least 100,000 people	April 1, 2012
System serving 50,000-99,999 people	October 1, 2012
System serving 10,000-49,999 people	October 1, 2013
System serving fewer than 10,000 people	• October 1, 2013, for all groundwater systems and for SW/IGW systems that did not collect <i>Cryptosporidium</i> source water samples • October 1, 2014, for SW/IGW systems that collected <i>Cryptosporidium</i> source water samples
Other systems that are part of a combined distribution system	
Consecutive or wholesale system	At the same time as the system with the earliest compliance date in the combined distribution system

*The department may grant up to an additional 24 months for compliance with the MCLs and operational evaluation levels if the system requires capital improvements to comply with an MCL.

c. *Monitoring requirements for disinfection byproducts.*

(1) General requirements.

1. Systems must take all samples during normal operating conditions.
2. Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, with department approval.
3. Failure to monitor in accordance with the monitoring plan required under 41.6(1)“c”(1)“6” is a monitoring violation.

4. Failure to monitor is a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages, and the system’s failure to monitor makes it impossible to determine compliance with MCLs.

5. Systems may use only data collected under the provisions of this rule or 567—43.6(455B) to qualify for reduced monitoring.

6. Each system required to monitor under the provisions of this rule or 567—43.6(455B) must develop and implement a monitoring plan. The system must maintain the plan and make it available for inspection by the department and the general public no later than 30 days following the applicable compliance dates in 41.6(1)“a”(3). All systems using surface water or groundwater under the direct influence of surface water and serving more than 3,300 people must submit a copy of the monitoring plan to the department by the applicable date in 41.6(1)“a”(3)“1.” The department may also require the plan to be submitted by any other system. After review, the department may require changes in any plan elements. The plan must include at least the following elements:

- Specific locations and schedules for collecting samples for any parameters included in this rule.
- How the system will calculate compliance with MCLs, MRDLs, and treatment techniques.

7. The department may require a monthly monitoring frequency for disinfection byproducts, which would be specified in the operation permit.

(2) Bromate. Community and nontransient noncommunity systems using ozone for disinfection or oxidation must conduct monitoring for bromate.

1. Routine monitoring. Systems must take at least one sample per month for each treatment plant in the system using ozone, collected at each source/entry point to the distribution system while the ozonation system is operating under normal conditions.

2. Reduced monitoring. A system may reduce monitoring from monthly to quarterly, if the system's running annual average bromate concentration is less than or equal to 0.0025 mg/L based on monthly bromate measurements for the most recent four quarters. If the system previously qualified for reduced bromate monitoring and is on quarterly sampling frequency, it may remain on reduced monitoring as long as the running annual average of the bromate samples is less than or equal to 0.0025 mg/L. If the running annual average of quarterly bromate samples exceeds 0.0025 mg/L, the system must resume routine bromate monitoring. Only three analytical methods may be used for bromate samples under reduced monitoring: EPA Method 317.0 Revision 2.0, Method 326.0, or Method 321.8.

(3) Chlorite. Community and nontransient noncommunity water systems using chlorine dioxide, for disinfection or oxidation, must conduct monitoring for chlorite. If the system does not use chlorine dioxide on a daily basis, the system must conduct the required daily monitoring each day chlorine dioxide is used, and any required monthly monitoring during those months in which chlorine dioxide is used during any portion of the month.

1. Routine daily monitoring. Systems must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the system must take additional samples in the distribution system the following day at the locations required by 41.6(1)"c"(3)"3," which are in addition to the sample required at the entrance to the distribution system. These daily entry point to the distribution system samples may be analyzed by system personnel, in accordance with 41.6(1)"d."

2. Routine monthly monitoring. Systems must take a three-sample set each month in the distribution system. The system must take one sample at each of the following locations: near the first customer, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any additional routine sampling must be conducted in the same manner (as three-sample sets, at the specified locations). The system may use the results of additional monitoring conducted in accordance with 41.6(1)"c"(3)"3" to meet the requirement for monitoring in 41.6(1)"c"(3)"2." These monthly distribution system samples must be analyzed by a certified laboratory using an approved ion chromatography method, in accordance with 41.6(1)"d."

3. Additional monitoring. On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the system is required to take three chlorite distribution system samples at the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system). These additional distribution system samples must be analyzed by a certified laboratory using an approved ion chromatography method, in accordance with 41.6(1)"d."

4. Reduced monitoring.

- Daily chlorite monitoring at the entrance to the distribution system required by 41.6(1)"c"(3)"1" may not be reduced.

- The department may allow systems with monthly chlorite monitoring in the distribution system required by 41.6(1)"c"(3)"2" to be reduced to a requirement of 1 three-sample set per quarter after one year of monitoring where no individual chlorite sample taken in the distribution system under 41.6(1)"c"(3)"2" has exceeded the chlorite MCL and the system has not been required to conduct additional monitoring under 41.6(1)"c"(3)"3." The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system under 41.6(1)"c"(3)"2" exceeds the chlorite MCL or the system is required to conduct monitoring under 41.6(1)"c"(3)"3" of this rule, at which time the system must revert to routine monitoring.

(4) Total trihalomethanes (TTHM) and haloacetic acids (HAA5).

1. Routine monitoring. Systems must monitor at the frequency indicated in the following table. Both the TTHM and HAA5 samples must be collected as paired samples during the same time period in order for each parameter to have the same annual average period for result comparison. A paired sample is one that is collected at the same location and time and is analyzed for both TTHM and HAA5 parameters.

Routine Monitoring Frequency for TTHM and HAA5

Type of System (source water type and population served)	Minimum Monitoring Frequency	Sample Location in the Distribution System
SW/IGW ³ system serving $\geq 10,000$ persons	Four water samples per quarter per treatment plant	At least 25 percent of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods. ¹
SW/IGW ³ system serving 500-9,999 persons	One water sample per quarter per treatment plant	Locations representing maximum residence time. ¹
SW/IGW ³ system serving <500 persons	One sample per year per treatment plant during month of warmest water temperature	Locations representing maximum residence time. ¹ If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until system meets reduced monitoring criteria in 41.6(1)"c"(4)"2," second bulleted paragraph.
System using only non-IGW groundwater using chemical disinfectant and serving $\geq 10,000$ persons	One water sample per quarter per treatment plant ²	Locations representing maximum residence time. ¹
System using only non-IGW groundwater using chemical disinfectant and serving <10,000 persons	One sample per year per treatment plant during month of warmest water temperature	Locations representing maximum residence time. ¹ If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until system meets reduced monitoring criteria in 41.6(1)"c"(4)"2," second bulleted paragraph.

¹If a system chooses to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) must be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples must be taken at locations representative of at least average residence time in the distribution system.

²Multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with department approval.

³SW/IGW indicates those systems that use either surface water (SW) or groundwater under the direct influence of surface water (IGW), in whole or in part.

2. Reduced monitoring. The department may allow systems a reduced monitoring frequency, except as otherwise provided, in accordance with the following table. Source water total organic carbon (TOC) levels must be determined in accordance with 567—subparagraph 43.6(2)"c"(1).

Reduced Monitoring Frequency for TTHM and HAA5

If you are a ...	And you have monitored at least one year and your ...	You may reduce monitoring to this level
SW/IGW ¹ system serving $\geq 10,000$ persons which has a source water annual average TOC level, before any treatment, of ≤ 4.0 mg/L.	TTHM annual average ≤ 0.040 mg/L and HAA5 annual average ≤ 0.030 mg/L	One sample per treatment plant per quarter at distribution system location reflecting maximum residence time.
SW/IGW ¹ system serving 500 - 9,999 persons that has a source water annual average TOC level, before any treatment, of ≤ 4.0 mg/L.	TTHM annual average ≤ 0.040 mg/L and HAA5 annual average ≤ 0.030 mg/L	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
SW/IGW ¹ system serving <500 persons	Any SW/IGW ¹ system serving <500 persons may not reduce its monitoring to less than one sample per treatment plant per year.	

If you are a ...	And you have monitored at least one year and your ...	You may reduce monitoring to this level
System using only non-IGW groundwater using chemical disinfectant and serving $\geq 10,000$ persons	TTHM annual average ≤ 0.040 mg/L and HAA5 annual average ≤ 0.030 mg/L	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
System using only non-IGW groundwater using chemical disinfectant and serving $< 10,000$ persons	TTHM annual average ≤ 0.040 mg/L and HAA5 annual average ≤ 0.030 mg/L for two consecutive years; or, TTHM annual average ≤ 0.020 mg/L and HAA5 annual average ≤ 0.015 mg/L for one year.	One sample per treatment plant per three-year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following quarter in which system qualifies for reduced monitoring.

¹SW/IGW indicates those systems that use either surface water (SW) or groundwater under the direct influence of surface water (IGW), in whole or in part.

- Systems on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year (for systems which must monitor quarterly) or the result of the sample (for systems which must monitor no more frequently than annually) is less than or equal to 0.060 mg/L for TTHMs and is less than or equal to 0.045 mg/L for HAA5. Systems that do not meet these levels must resume monitoring at the frequency identified in 41.6(1)“c”(4)“1” in the quarter immediately following the quarter in which the system exceeds 0.060 mg/L for TTHMs and 0.045 mg/L for HAA5. For systems using only groundwater not under the direct influence of surface water and serving fewer than 10,000 persons, if either the TTHM annual average is > 0.080 mg/L or the HAA5 annual average is > 0.060 mg/L, the system must go to increased monitoring identified in 41.6(1)“c”(4)“1” in the quarter immediately following the monitoring period in which the system exceeds 0.080 mg/L for TTHMs or 0.060 mg/L for HAA5.

- The department may allow systems on increased monitoring to return to routine monitoring if, after one year of monitoring, TTHM annual average is less than or equal to 0.060 mg/L and HAA5 annual average is less than or equal to 0.045 mg/L.

- The department may return a system to routine monitoring at the department’s discretion.

d. *Analytical requirements for disinfection byproducts.*

(1) Systems must use only the analytical method(s) specified in this paragraph, or equivalent methods as determined by EPA, to demonstrate compliance with the requirements of this rule.

(2) Systems must measure disinfection byproducts by the methods (as modified by the footnotes) listed in the following table:

Approved Methods for Disinfection Byproduct Compliance Monitoring

Contaminant and Methodology	EPA Method1	Standard Method2	ASTM Method3
TTHM			
P&T/GC/EICD & PID	502.24		
P&T/GC/MS	524.2, 524.3, 524.4		
LLE/GC/ECD	551.1		
HAA5			
LLE (diazomethane)/GC/ECD		6251 B5, 6251 B-07 ¹²	
SPE (acidic methanol)/GC/ECD	552.15		
LLE (acidic methanol)/GC/ECD	552.2, 552.3		
Ion chromatography electrospray ionization tandem mass spectrometry (IC-ESI-MS/MS)	557 ¹⁰		
Bromate			
Ion chromatography	300.1		D 6581-00

Contaminant and Methodology	EPA Method1	Standard Method2	ASTM Method3
Ion chromatography & postcolumn reaction ⁹	317.0 Rev. 2.06, 326.06		
IC/ICP-MS ⁹	321.86, 7		
Two-dimensional ion chromatography (IC)	302.0 ¹¹		
Ion chromatography electrospray ionization tandem mass spectrometry (IC-ESI-MS/MS)	557 ¹⁰		
Chemically suppressed ion chromatography			D 6581-08 A
Electrolytically suppressed ion chromatography			D 6581-08 B
Chlorite ⁸			
Amperometric titration		4500-ClO ₂ E8	
Amperometric sensor			ChlordioX Plus ^{8, 13}
Spectrophotometry	327.0 Rev. 1.18		
Ion chromatography	300.0, 300.1, 317.0 Rev. 2, 326.0		
Chemically suppressed ion chromatography			D 6581-08 A
Electrolytically suppressed ion chromatography			D 6581-08 B

ECD = electron capture detector

IC = ion chromatography

P&T = purge and trap

EICD = electrolytic conductivity detector

LLE = liquid/liquid extraction

PID = photoionization detector

GC = gas chromatography

MS = mass spectrometer

SPE = solid phase extractor

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register on February 16, 1999, in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA's Drinking Water Docket, 401 M Street, SW, Washington, DC 20460 (telephone: (202)260-3027); or at the Office of Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC 20408.

1EPA: The following methods are available from the National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (telephone: (800)553-6847):

Methods 300.0 and 321.8: Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1, USEPA, August 2000, EPA 815-R-00-014 (available through NTIS, PB2000-106981).

Method 300.1: "Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0," EPA-600/R-98/118, 1997 (available through NTIS, PB98-169196).

Method 317.0: "Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis, Revision 2.0," USEPA, July 2001, EPA 815-B-01-001.

Method 326.0: "Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis, Revision 1.0," USEPA, June 2002, EPA 815-R-03-007.

Method 327.0: "Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry, Revision 1.1," USEPA, May 2005, EPA 815-R-05-008.

Methods 502.2, 524.2, 551.1, and 552.2: Methods for the Determination of Organic Compounds in Drinking Water—Supplement III, EPA-600/R-95-131, August 1995 (NTIS PB95-261616).

Method 524.3: "Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry, Version 1.0," June 2009. EPA 815-B-09-009. Available at www.nemi.gov.

Method 524.4: "Measurement of Purgeable Organic Compounds in Water by Gas Chromatography/Mass Spectrometry Using Nitrogen Purge Gas, Version 1.0," May 2013. EPA 815-R-13-002. Available at www.nepis.epa.gov.

Method 552.1: Methods for the Determination of Organic Compounds in Drinking Water—Supplement II, EPA-600/R-92-129, August 1992 (NTIS PB92-207703).

Method 552.3: "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-liquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection, Revision 1.0," USEPA, July 2003, EPA-815-B-03-002.

24500-ClO₂ E and 6251B: Standard Methods for the Examination of Water and Wastewater, 19th (1995), 20th (1998), 21st (2005), and 22nd (2012) editions, American Public Health Association, which are available from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

3Method D 6581-00: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428: Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 2001 (or any year containing the cited version).

4If TTHMs are the only analytes being measured in the sample, then a PID is not required.

5The samples must be extracted within 14 days of sample collection.

6Ion chromatography and postcolumn reaction or IC/ICP-MS must be used for bromate analysis for purposes of demonstrating eligibility of reduced monitoring.

7Samples must be preserved at sample collection with 50 mg ethylenediamine (EDA)/L of sample and must be analyzed within 28 days.

8Amperometric titration or spectrophotometry may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in 41.6(1)“c”(3)“1.” Ion chromatography must be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in 41.6(1)“c”(3)“2” and “3.”

9These are the only methods approved for reduced bromate monitoring under 41.6(1)“c”(2)“2.”

¹⁰EPA Method 557, “Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC-ESI-MS/MS),” August 2009. EPA 815-B-09-012. Available at www.nemi.gov.

¹¹EPA Method 302.0, “Determination of Bromate in Drinking Water Using Two-Dimensional Ion Chromatography with Suppressed Conductivity Detection,” September 2009. EPA 815-B-014. Available at www.nemi.gov.

¹²Standard Methods Online is available at www.standardmethods.org. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

¹³ChlordioX Plus. “Chlorine Dioxide and Chlorite in Drinking Water by Amperometry Using Disposable Sensors,” November 2013. Available from Palintest Ltd., Jamike Avenue (Suite 100), Erlanger, KY 41018.

(3) Certified laboratory requirements. Analyses under this rule for disinfection byproducts shall only be conducted by laboratories that have been certified by the department and are in compliance with the requirements of 567—Chapter 83, except as specified under 41.6(1)“d”(4). The performance evaluation sample acceptance limits and minimum reporting levels are listed in 567—subparagraph 83.6(7)“a”(6).

(4) Daily chlorite samples at the entrance to the distribution system must be measured by a Grade II, III or IV operator meeting the requirements of 567—Chapter 81, any person under the supervision of a Grade II, III or IV operator meeting the requirements of 567—Chapter 81, or a laboratory certified by the department to perform analysis under 567—Chapter 83.

e. Compliance requirements for disinfection byproducts.

(1) General requirements.

1. When compliance is based on a running annual average of monthly or quarterly samples or averages and the system fails to monitor for TTHM, HAA5, or bromate, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

2. Unless invalidated by the department, all samples taken and analyzed under the provisions of this rule must be included in determining compliance, even if that number is greater than the minimum required.

3. If, during the first year of monitoring under paragraph 41.6(1)“c,” any individual quarter’s average will cause the running annual average of that system to exceed the MCL, the system is out of compliance at the end of that quarter.

(2) Bromate. Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the system takes more than one sample, the average of all samples taken during the month) collected by the system as prescribed by 41.6(1)“c”(2). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to 567—42.1(455B), in addition to reporting to the department pursuant to 567—paragraph 42.4(3)“d.” If a PWS fails to complete 12 consecutive months’ monitoring, compliance with the MCL for the last four-quarter compliance period must be based on an average of the available data.

(3) Chlorite. Compliance must be based on an arithmetic average of each three-sample set taken in the distribution system as prescribed by 41.6(1)“c”(3)“1” and 41.6(1)“c”(3)“2.” If the arithmetic average of any three-sample set exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to 567—42.1(455B), in addition to reporting to the department pursuant to 567—paragraph 42.4(3)“d.”

(4) TTHM and HAA5.

1. For systems monitoring quarterly, compliance with MCLs in 41.6(1)“b” must be based on a running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected by the system as prescribed by 41.6(1)“c”(4).

2. For systems monitoring less frequently than quarterly, systems demonstrate MCL compliance if the average of samples taken that year under the provisions of 41.6(1)“c”(4) does not exceed the MCLs in 41.6(1)“b.” If the average of these samples exceeds the MCL, the system must increase monitoring to once

per quarter per treatment plant and is not in violation of the MCL until it has completed one year of quarterly monitoring, unless the result of fewer than four quarters of monitoring will cause the running annual average to exceed the MCL, in which case the system is in violation at the end of that quarter. Systems required to increase to quarterly monitoring must calculate compliance by including the sample that triggered the increased monitoring plus the following three quarters of monitoring.

3. If the running annual arithmetic average of quarterly averages covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to 567—42.1(455B) in addition to reporting to the department pursuant to 567—paragraph 42.4(3) “d.”

4. If a PWS fails to complete four consecutive quarters of monitoring, compliance with the MCL for the last four-quarter compliance period must be based on an average of the available data.

f. Reporting requirements for disinfection byproducts. Systems required to sample quarterly or more frequently must report to the department within ten days after the end of each quarter in which samples were collected, notwithstanding the public notification provisions of 567—42.1(455B). Systems required to sample less frequently than quarterly must report to the department within ten days after the end of each monitoring period in which samples were collected. The specific reporting requirements for disinfection byproducts are listed in 567—subparagraph 42.4(3) “d”(2).

41.6(2) Stage 2 initial distribution system evaluation. The department is adopting by reference the requirements for the Stage 2 initial distribution system evaluation (IDSE) listed in 40 CFR 141.600-605 as adopted on January 4, 2006. This regulation establishes monitoring and other requirements for identifying compliance monitoring locations that will be used to determine compliance with maximum contaminant levels for total trihalomethanes and haloacetic acids. All CWS required to comply with 41.6(1) and all NTNC serving at least 10,000 people that are required to comply with 41.6(1) are required to comply with this subrule. The requirements in this subrule constitute national primary drinking water regulations. Only the analytical methods specified in 41.6(1) “d” may be used to demonstrate compliance with this subrule.

41.6(3) Stage 2 disinfection byproducts requirements. The requirements of this subrule constitute national primary drinking water regulations. This subrule establishes monitoring and other requirements for achieving compliance with MCLs based on locational running annual averages (LRAA) for TTHM and HAA5.

a. Applicability. All CWS and NTNC systems that use a primary or residual disinfectant other than ultraviolet light or deliver water that has been treated with a primary or residual disinfectant other than ultraviolet light must comply with the requirements in this subrule.

(1) **Schedule.** Systems must comply with the dates listed in the appropriate schedule. For the purposes of this subrule, the combined distribution system (CDS) as defined in 567—40.2(455B) only includes active connections; emergency connections are excluded. Any CWS or NTNC that purchases or sells water on a routine basis through an active connection to another CWS or NTNC is part of a combined distribution system. All systems included in a CDS must adhere to the schedule of the system that serves the largest population in that CDS. The system must comply with the requirements on the schedule for systems that are not a part of a CDS and for systems that serve the largest population in the CDS. The schedule for the other systems that are a part of a CDS, either wholesale or consecutive, is the same schedule as that of the system with the earliest compliance date in the CDS.

Schedule	System Population	Date by which system must begin Stage 2 compliance monitoring
1	At least 100,000	April 1, 2012
2	50,000-99,999	October 1, 2012
3	10,000-49,999	October 1, 2013
4	Fewer than 10,000	• October 1, 2013, for all GW systems and any SW/IGW systems that did not conduct <i>Cryptosporidium</i> sampling under 567—paragraph 43.11(3) “b”(2) “4” • October 1, 2014, for SW/IGW systems that conducted <i>Cryptosporidium</i> sampling under 567—paragraph 43.11(3) “b”(2) “4”

(2) Initiation of compliance monitoring under Stage 2. Systems shall switch from Stage 1 compliance monitoring (41.6(1)) to Stage 2 monitoring as follows:

1. Systems required to conduct quarterly monitoring must start monitoring in the first full calendar quarter that includes the compliance date in the preceding table.

2. Systems that conducted IDSE monitoring and have an approved report and that are required to conduct monitoring at a frequency less than quarterly must start monitoring in the calendar month recommended in the approved IDSE report.

3. Systems that were not required to prepare an IDSE report under 41.6(2) must update their Stage 1 monitoring plan to meet the Stage 2 requirements and submit it to the department for approval six months prior to the compliance date in the preceding table.

(3) Timing of initial determination of compliance under Stage 2.

1. Systems required to conduct quarterly monitoring must make compliance calculations at the end of the fourth calendar quarter that follows the compliance date or earlier if the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the results of subsequent sampling. Compliance determination must continue at the end of each subsequent quarter.

2. Systems required to conduct monitoring at a frequency that is less than quarterly must make compliance calculations beginning with the first compliance sample taken after the compliance date.

(4) Monitoring and compliance.

1. Systems required to monitor quarterly must calculate LRAAs for TTHM and HAA5 using the monitoring results collected under this subrule and determine that each LRAA does not exceed the MCL. If the system does not complete the four consecutive quarters of monitoring, the system must calculate the compliance with the MCL based on the average of the available data from the most recent four quarters. If the system collects more than one sample per quarter at a monitoring location, all samples taken in the quarter at that location must be averaged to determine a quarterly average to be used for the LRAA calculation. If a system fails to monitor, it is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA.

2. Systems required to monitor yearly or triennially must determine that each sample collected is less than the MCL. If any sample exceeds the MCL, the system must comply with the requirements of 41.6(3) "e." If no sample exceeds the MCL, the sample result for each monitoring location is considered to be the LRAA for that monitoring location. If a system fails to monitor, it is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA.

3. The department may grant up to an additional 24 months for compliance with MCLs and operational evaluation levels if the system is required to make capital improvements in order to comply with an MCL.

(5) Any CWS or NTNC system that begins using water to which a disinfectant has been added, other than ultraviolet light, after the initial compliance dates for IDSE or Stage 2 compliance monitoring must comply with this subrule.

b. Monitoring plan. All systems must develop and implement a disinfection byproduct monitoring plan, which shall be kept on file at the system for review by the department and the public. The monitoring plan must contain the monitoring locations, monitoring dates, and compliance calculation procedures.

(1) If the system has an approved IDSE-standard monitoring plan (IDSE-SMP) report, that report contains all of the plan elements and meets this requirement.

(2) If the system does not have an approved IDSE-SMP report and does not have sufficient monitoring locations from its initial disinfection byproduct sampling plan, the system must identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified. The system must provide the rationale for identifying locations as having high levels of TTHM or HAA5.

(3) If the system does not have an approved IDSE-SMP report and has more monitoring locations from its initial Stage 1 disinfection byproduct sampling plan than the number of locations required under the Stage 2 compliance monitoring, the system must identify which locations it will use for compliance monitoring by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified.

(4) All plans must be reviewed by the system every three years and updated as system conditions change (such as changes in water quality or hydraulics, etc.).

1. A system may revise its monitoring plan to reflect changes in treatment, distribution system operations, and layout (including new service areas), to reflect other factors that may affect TTHM or HAA5 formation, or for department-approved reasons.

2. The system must consult with the department regarding the need for changes and the appropriateness of changes. The system must replace existing compliance monitoring locations that have the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels.

3. The department may require modifications in the system's monitoring plan.

(5) Systems are also required to maintain the disinfectant and MRDL elements of the Stage 1 monitoring plan pursuant to 41.6(1) "c"(1)"6" and 567—paragraph 43.6(1) "c"(1)"5."

(6) All systems are required to have a valid disinfection byproducts monitoring plan prior to the start of compliance monitoring in 41.6(3) "a"(1).

c. Routine monitoring. Systems are required to start monitoring at the locations specified in the approved disinfection byproducts monitoring plan and on the schedule specified in 41.6(3) "a"(1). Each system must monitor the disinfection byproducts at the minimum number of locations identified in the Routine Monitoring table.

Routine Monitoring

Source water type	Population size category	Monitoring frequency	Total number of distribution system monitoring location sites per monitoring period
SW/IGW	<500	per year	2
	500-3,300	per quarter	2
	3,301-9,999	per quarter	2
	10,000-49,999	per quarter	4
	50,000-249,999	per quarter	8
	250,000-999,999	per quarter	12
Groundwater	<500	per year	2
	500-9,999	per year	2
	10,000-99,999	per quarter	4
	100,000-499,999	per quarter	6

(1) All systems must monitor during the month of highest disinfection byproduct concentrations.

(2) Systems on a quarterly monitoring frequency must collect samples for TTHM and HAA5 every 90 days at each monitoring location, except that SW/IGW systems serving 500 to 3,300 people may collect at one location as provided in 41.6(3) "c"(3). Each sample collected at each location must be analyzed for both TTHM and HAA5 components.

(3) Systems on an annual monitoring frequency and SW/IGW systems serving 500 to 3,300 people are required to collect TTHM and HAA5 samples at the locations with the highest TTHM and HAA5 concentrations, respectively. Each sample must be analyzed for both TTHM and HAA5 components. Sample collection is required from only one location if the highest TTHM concentration and the highest HAA5 concentration occur at the same location.

(4) Analytical methods. Systems must use an approved method listed in 41.6(1) "d"(2) for TTHM and HAA5 analyses pursuant to this subrule. Analyses must be conducted by laboratories certified for disinfection byproducts analyses in accordance with 567—Chapter 83.

d. Reduced monitoring. A system may reduce monitoring to the level specified in the Reduced Monitoring table anytime the locational running annual average is less than or equal to half the MCL for TTHM and HAA5 at all monitoring locations (i.e., less than or equal to 0.040 mg/L for TTHM and 0.030 mg/L for HAA5). Only data collected under the provisions of this rule may be used to qualify for reduced monitoring.

Reduced Monitoring

Source water type	Population size category	Monitoring frequency ¹	Distribution system monitoring location sites per monitoring period ²
SW/IGW	<500	per year	Monitoring may not be reduced
	500-3,300	per year	1 sample per year at the same location if the highest TTHM and HAA5 measurements occurred at the same location and in the same quarter, analyzed for both TTHM and HAA5
	3,301-9,999	per year	2 samples: one at the location and during the quarter with the highest TTHM single measurement; one at the location and during the quarter with the highest HAA5 single measurement
	10,000-49,999	per quarter	2 samples: one at the highest TTHM LRAA location and one at the highest HAA5 LRAA location
	50,000-249,999	per quarter	4 samples: one sample each at the highest two TTHM LRAA locations and one sample each at the highest two HAA5 LRAA locations
	250,000-999,999	per quarter	6 samples: one sample each at the highest three TTHM LRAA locations and one sample each at the highest three HAA5 LRAA locations
Groundwater	<500	every third year	1 sample at the same location if the highest TTHM and HAA5 measurements occurred at the same location and in the same quarter, analyzed for both TTHM and HAA5
	500-9,999	per year	1 sample per year at the same location if the highest TTHM and HAA5 measurements occurred at the same location and in the same quarter, analyzed for both TTHM and HAA5
	10,000-99,999	per year	2 samples: one at the location and during the quarter with the highest TTHM single measurement; one at the location and during the quarter with the highest HAA5 single measurement
	100,000-499,999	per quarter	2 samples: one at the highest TTHM LRAA location and one at the highest HAA5 LRAA location

¹Systems on a quarterly monitoring frequency must collect the sample(s) every 90 days.

²Each sample must be analyzed for all TTHM and HAA5 components.

(1) Additional source water TOC requirement for SW/IGW systems. For SW/IGW systems, the source water running annual average TOC level, before any treatment, must be less than or equal to 4.0 mg/L at each treatment plant treating surface water or influenced groundwater, based on the monitoring conducted under 567—paragraph 43.6(2)“b,” in order to qualify for reduced monitoring.

(2) Continued reduced monitoring frequency. Systems may remain on a reduced monitoring frequency as long as they meet the following criteria. For SW/IGW systems, the source water annual average TOC level requirement in 41.6(3)“d”(1) must continue to be met.

1. A system with a quarterly reduced monitoring frequency may remain on reduced monitoring as long as the TTHM LRAA is less than or equal to 0.040 mg/L and the HAA5 LRAA is less than or equal to 0.030 mg/L at each monitoring location.

2. A system with an annual or triennial monitoring frequency may remain on reduced monitoring as long as each TTHM sample is less than or equal to 0.060 mg/L and each HAA5 sample is less than or equal to 0.045 mg/L.

(3) Return to routine monitoring frequency. Systems that cannot meet the requirements for reduced monitoring must resume routine monitoring according to 41.6(3)“c” or begin increased monitoring according to 41.6(3)“e.”

1. A system with a quarterly reduced monitoring frequency must resume routine monitoring if the LRAA from any location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5.

2. A system with an annual or triennial monitoring frequency must resume routine monitoring if the annual sample at any location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5.

3. Any SW/IGW system must resume routine monitoring if the running annual average source water TOC level, prior to any treatment, is more than 4.0 mg/L.

4. In addition, the department may require any system to resume routine monitoring at the department's discretion.

(4) Remaining on reduced monitoring from Stage 1 to Stage 2 transition. A system may remain on reduced monitoring after the dates listed in 41.6(3) "a"(1) if all of the following three criteria are met. If the three criteria are not met, the system must return to routine monitoring.

1. Under the IDSE, the system qualified for a 40/30 certification or received a very small system waiver;

2. The system meets the reduced monitoring criteria of this paragraph; and

3. The system has not changed or added locations for disinfection byproduct monitoring from those used under the Stage 1 requirements in 41.6(1).

e. Increased monitoring.

(1) Systems that are monitoring annually or triennially must increase their monitoring frequency to quarterly if the following conditions are met.

1. Single result exceeds the TTHM or HAA5 MCL. A system that is monitoring annually or triennially must increase monitoring to quarterly at all locations if a single TTHM sample is greater than 0.080 mg/L or a single HAA5 sample is greater than 0.060 mg/L. The quarterly samples must be analyzed for both TTHM and HAA5 components.

2. Systems with a TTHM or HAA5 MCL violation. A system that is monitoring annually or triennially that is in violation of the MCL for TTHM or HAA5, based upon the LRAA, must increase monitoring to quarterly at all locations. The quarterly samples must be analyzed for both TTHM and HAA5 components. The LRAA is calculated based on four consecutive quarters of monitoring or based on fewer quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters.

(2) Systems on a quarterly monitoring frequency during Stage 1 to Stage 2 transition. A system that was on increased monitoring under Stage 1 must remain on increased monitoring until the system qualifies for a return to routine monitoring under 41.6(3) "e"(3). The system must conduct the increased monitoring at the monitoring locations in the monitoring plan developed under 41.6(3) "b," beginning on the date identified in 41.6(3) "a"(1).

(3) Return to routine monitoring frequency. A system may return to routine monitoring once the system has conducted increased monitoring for at least four consecutive quarters and the LRAA for every monitoring location is less than or equal to 0.060 mg/L for TTHM and less than or equal to 0.045 mg/L for HAA5. The system may not have any monitoring violations during the most recent four consecutive quarters.

f. Operational evaluation level (OEL).

(1) TTHM operational evaluation level. The TTHM operational evaluation level is determined by the sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4 to determine an average. If that average exceeds 0.080 mg/L, the system has exceeded the TTHM operational evaluation level.

(2) HAA5 operational evaluation level. The HAA5 operational evaluation level is determined by the sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4 to determine an average. If that average exceeds 0.060 mg/L, the system has exceeded the HAA5 operational evaluation level.

(3) A system must calculate the operational evaluation level at any monitoring location that has a single analytical result in excess of the TTHM or HAA5 MCL in the analytical data used to calculate the current 12-month LRAA. A system must determine compliance with the OEL every quarter.

(4) Requirements when the operational evaluation level is exceeded. The system must conduct an operational evaluation and submit a written report of the evaluation to the department within 90 days after the system is notified of the analytical result that caused the system to exceed the operational evaluation level. The written report must be made available to the public upon request. The report must include an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in source water or source water quality, and

treatment changes or problems that may contribute to disinfection byproduct formation, and what steps could be considered to minimize future exceedances.

1. The system may make a request to the department to limit the scope of the examination if the system is able to identify the cause of the operational evaluation level exceedance. The 90-day deadline for submitting the written report cannot be extended.

2. The system must have department approval to limit the scope of the examination. The approval must be in writing and kept with the completed report.

- g. Reporting.* All systems required to comply with this rule must meet the reporting requirements pursuant to 567—paragraph 42.4(3) “d.”

- h. Record keeping.* All systems required to comply with this rule must retain the monitoring plans and analytical results as required by 567—paragraph 42.5(1) “h.”

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—41.7(455B) Groundwater rule: sanitary survey, microbial source water monitoring, treatment technique.

41.7(1) General requirements.

- a. Scope.* The requirements of this rule constitute national primary drinking water regulations.

- b. Applicability.* This rule applies to all public water systems that use groundwater except that it does not apply to public water systems that combine all of their groundwater with surface water or with influenced groundwater prior to treatment under 567—43.5(455B). For the purposes of this rule, “groundwater system” is defined as any public water system meeting this applicability statement, including consecutive systems receiving finished groundwater. For the purposes of this rule, “4-log treatment of viruses” means treatment that includes inactivation, removal, or a department-approved combination of inactivation and removal before or at the first customer of 4-log (99.99%) of viruses.

- c. General requirements.* Systems subject to this rule must comply with the following requirements:

- (1) Sanitary survey information requirements for all groundwater systems as described in 41.7(2).

- (2) Microbial source water monitoring requirements for groundwater systems that do not treat all of their groundwater to at least 99.99 percent (4-log) treatment of viruses, using inactivation, removal, or a department-approved combination of inactivation and removal before or at the first customer, as described in 41.7(3).

- (3) Treatment technique requirements, as described in 41.7(4), that apply to groundwater systems that have fecally contaminated source waters, as determined by source water monitoring conducted under 41.7(3), or that have significant deficiencies that are identified by the department. A groundwater system with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of this rule must implement one or more of the following corrective action options:

1. Correct all significant deficiencies;

2. Provide an alternate source of water;

3. Eliminate the source of contamination; or

4. Provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a department-approved combination of 4-log virus inactivation and removal) before or at the first customer.

- (4) Groundwater systems that provide at least 4-log treatment of viruses are required to conduct compliance monitoring to demonstrate treatment effectiveness, as described in 41.7(4).

- (5) If requested by the department, groundwater systems must provide the department with any existing information that will enable the department to perform a hydrogeologic sensitivity assessment. For the purposes of this rule, “hydrogeologic sensitivity assessment” is a determination of whether groundwater systems obtain water from hydrogeologically sensitive settings.

- (6) Certified laboratory requirements. Analyses under this rule shall only be conducted by laboratories that have been certified by the department and are in compliance with the requirements of 567—Chapter 83.

41.7(2) Sanitary surveys for groundwater systems. For the purposes of this rule, a “sanitary survey,” as conducted by the department in accordance with 567—subrule 43.1(7), includes but is not limited to the following: an on-site review of the water sources (identifying sources of contamination using results of

source water assessments or other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

41.7(3) *Groundwater source microbial monitoring and analytical methods.* A groundwater system that has a department-approved 4-log treatment process for viruses and is fulfilling the requirements of 41.7(4) “b” is not required to conduct the triggered source water monitoring under 41.7(3) “a.”

a. Triggered source water monitoring.

(1) General requirements. A groundwater system must conduct triggered source water monitoring if the conditions identified as follows exist:

1. The system does not provide at least 4-log treatment of viruses for each groundwater source; and
2. The system is notified that a sample collected under 41.2(1) “e” through 41.2(1) “i” is total coliform-positive, and the sample is not invalidated under 41.2(1) “d.”

(2) Sampling requirements. A groundwater system must collect at least one groundwater source sample from each groundwater source in use at the time the total coliform-positive sample was collected under 41.2(1) “e” through 41.2(1) “i” that could have reasonably contributed to the positive sample. The source sample must be collected within 24 hours of when the system is notified of the total coliform-positive sample.

1. The department may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the groundwater source water sample within 24 hours due to circumstances beyond the system’s control. In the case of an extension, the department must specify how much time the system has to collect the sample.

2. A groundwater system serving 1,000 or fewer people may use a repeat sample collected from a groundwater source to meet both the requirements of 41.2(1) “j” and to satisfy the monitoring requirements of 41.7(3) “a” if:

- The department approves the use of *E. coli* as the fecal indicator,
- The system only has one groundwater source required to be sampled,
- The system has no treatment, and
- Should the source water sample be *E. coli*-positive, the system would incur an acute coliform bacteria maximum contaminant level violation, must comply with Tier 1 public notification requirements, and must also comply with the additional sample monitoring in 41.7(3) “a”(3).

(3) Additional samples required. Unless the department requires corrective action for a valid triggered source water sample that tested positive for the fecal indicator, the system must collect five additional source water samples from that same source within 24 hours of being notified of the fecal indicator-positive sample result.

(4) Further requirements for consecutive and wholesale systems.

1. In addition to the other requirements in 41.7(3) “a,” a consecutive groundwater system that has a total coliform-positive sample collected under 41.2(1) “f” through 41.2(1) “i” must notify the wholesale system(s) within 24 hours of being notified of the total coliform-positive sample.

2. In addition to the other requirements in 41.7(3) “a,” a wholesale groundwater system that does not provide the 4-log treatment of viruses as described in 41.7(3) must comply with the following:

- A wholesale groundwater system that receives notice from a consecutive system it serves that a sample collected under 41.2(1) “f” through 41.2(1) “i” is total coliform-positive must, within 24 hours of being notified, collect triggered sample(s) from its groundwater source(s) under 41.7(3) “a”(2) and analyze the sample(s) for a fecal indicator.

- If the triggered source sample(s) is fecal indicator-positive, the wholesale groundwater system must notify all consecutive systems served by that groundwater source of the fecal indicator-positive result within 24 hours of being notified of the result and must collect the required additional five samples from the source within 24 hours under 41.7(3) “a”(3).

(5) Exceptions to the triggered source water monitoring requirements. A groundwater system is not required to comply with the source water monitoring requirements of 41.7(3) “a” if either of the following conditions exists:

1. The department determines and documents in writing that the total coliform-positive sample collected under 41.2(1) “e” through 41.2(1) “i” is caused by a distribution system deficiency; or

2. The total coliform-positive sample collected under 41.2(1) “e” through 41.2(1) “i” is collected at a location that meets department criteria for distribution system conditions that will cause total coliform-positive samples.

b. Assessment source water monitoring. If directed by the department, groundwater systems must conduct assessment source water monitoring that meets department-determined requirements for such monitoring. A groundwater system conducting assessment source water monitoring may use a triggered source water sample collected under 41.7(3) “a”(2) to meet the requirements of this paragraph. Department-determined assessment source water monitoring requirements may include:

(1) Collection of a total of 12 groundwater source samples that represent each month the system provides groundwater to the public;

(2) Collection of samples from each well unless the system obtains written department approval to conduct monitoring at one or more wells within the groundwater system that are representative of multiple wells used by that system and that draw water from the same hydrogeologic setting;

(3) Collection of a standard sample volume of at least 100 mL for fecal indicator analysis regardless of technical indicator or analytical method used;

(4) Analysis of all groundwater source samples using one of the analytical methods listed in 41.7(3) “c” for the presence of *E. coli*, enterococci, or coliphage;

(5) Collection of groundwater source samples at a location before any treatment of the groundwater source unless the department approves a sampling location after treatment; and

(6) Collection of groundwater source samples at the well itself unless the system’s configuration does not allow for sampling at the well itself and the department approves an alternate sampling location that is representative of the water quality of that well.

c. Analytical methods.

(1) A groundwater system subject to the source water monitoring requirements of this rule must collect a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used.

(2) A groundwater system must analyze all groundwater source samples collected under 567—41.7(455B) using one of the analytical methods in the following table for the presence of *E. coli*, enterococci, or coliphage.

Analytical Methods for Source Water Monitoring

Fecal Indicator ¹	Methodology	Method Citation
<i>E. coli</i>	Colilert ³	9223B ^{2, 12, 13} 9223 B-97, B-04 ¹⁸
	Colisure ³	9223B ^{2, 12, 13} 9223B-97, B-04 ¹⁸
	Membrane filter method with MI agar	EPA Method 1604 ⁴
	Colilert-18	9223B ^{2, 12, 13} 9223B-97, B-04 ¹⁸
	m-ColiBlue24 Test ⁵	
	E*Colite Test ⁶	
	EC-MUG ⁷	9221F ^{2, 13} 9221 F-06 ¹⁸
	NA-MUG ⁷	9222G ²
	Readycult	Readycult ¹⁴
	Colitag	Modified Colitag ¹⁵

Fecal Indicator ¹	Methodology	Method Citation
	Chromocult	Chromocult ¹⁶
	Tecta EC/TC	Tecta EC/TC ¹⁹
Enterococci	Multiple-tube technique	9230B ² 9230 B-04 ¹⁸
	Membrane filter technique	9230C ²
	Membrane filter technique	EPA Method 1600 ⁸
	Enterolert ⁹	
Coliphage	Two-step enrichment presence-absence procedure	EPA Method 1601 ¹⁰ , FastPhage ¹⁷
	Single agar layer procedure	EPA Method 1602 ¹¹

Analyses must be conducted in accordance with the documents listed below. The Director of the Federal Register approves the incorporation by reference of the documents listed in footnotes 2 through 11 in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the documents may be obtained from the sources listed below. Copies may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW, EPA West Room B102, Washington, DC 20460; (telephone: (202)566-2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202)741-6030, or go to: www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. The address for EPA's Water Resource Center, referenced in several of the footnotes, is EPA Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW, Washington, DC 20460.

¹The time from sample collection to initiation of analysis may not exceed 30 hours. The groundwater system is encouraged but is not required to hold samples below 10°C during transit.

²Methods are described in Standard Methods for the Examination of Water and Wastewater, 20th edition (1998), and copies may be obtained from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

³Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, ME 04092.

⁴EPA Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium); September 2002, EPA 821-R-02-024. Method is available at www.nemi.gov.

⁵A description of the m-ColiBlue24 Test, "Total Coliforms and *E. coli* Membrane Filtration Method with m-ColiBlue24 Broth," Method No. 10029, Revision 2, August 17, 1999, is available from Hach Company, 100 Dayton Avenue, Ames, IA 50010.

⁶A description of the E*Colite Test, "Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Drinking Water," January 9, 1998, is available from Charm Sciences, Inc., 659 Andover Street, Lawrence, MA 01843-1032.

⁷EC-MUG (Method 9221F) or NA-MUG (Method 9222G) can be used for *E. coli* testing step as described in 41.2(1) "f"(6) or (7) after use of Standard Method 9221B, 9221D, 9222B, or 9222C.

⁸EPA Method 1600: Enterococci in Water by Membrane Filtration Using Membrane-Enterococcus Indoxyl-β-D-Glucoside Agar (MEI), EPA 821-R-02-022 (September 2002), is an approved variation of Standard Method 9230C. The method is available at www.nemi.gov. The holding time and temperature for groundwater samples is specified in footnote 1 above, rather than as specified in Section 8 of EPA Method 1600.

⁹Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, ME 04092. Preparation and use of the medium is set forth in the article "Evaluation of Enterolert for Enumeration of Enterococci in Recreational Waters" by Budnick, G.E., Howard, R.T., and Mayo, D.R., 1996, Applied and Environmental Microbiology, 62:3881-3884.

¹⁰EPA Method 1601: Male-Specific (F+) and Somatic Coliphage in Water by Two-Step Enrichment Procedure; April 2001, EPA 821-R-01-030. Method is available at www.nemi.gov.

¹¹EPA Method 1602: Male-Specific (F+) and Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure; April 2001, EPA 821-R-01-029. Method is available at www.nemi.gov.

¹²Standard Methods for the Examination of Water and Wastewater, 21st edition (2005). Available from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

¹³Standard Methods for the Examination of Water and Wastewater, 22nd edition (2012). Available from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

¹⁴Readycult Method, "Readycult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters," January 2007, Version 1.1. Available from EMD Millipore, 290 Concord Road, Billerica, MA 01821.

¹⁵Modified Colitag Method, "Modified Colitag Test Method for the Simultaneous Detection of *E. coli* and Other Total Coliforms in Water (ATP D05-0035)," August 28, 2009. Available from www.nemi.gov or CPI International, 5580 Skylane Blvd., Santa Rosa, CA 95403.

¹⁶Chromocult Method, “Chromocult Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters,” November 2000, Version 1.0. Available from EMD Millipore, 290 Concord Road, Billerica, MA 01821.

¹⁷Charm Sciences, Inc., “FastPhage Test Procedure. Presence/Absence for Coliphage in Ground Water with Same Day Positive Prediction,” Version 009, November 2012. Available at www.charmsciences.com.

¹⁸Standard Methods Online is available at www.standardmethods.org. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

¹⁹Tecta EC/TC. “Presence/Absence Method for Simultaneous Detection of Total Coliforms and *Escherichia coli* in Drinking Water,” April 2014. Available from Veolia Water Solutions and Technologies, Suite 4697, Biosciences Complex, 116 Barrie Street, Kingston, Ontario, Canada K7L 3N6.

d. Invalidity of a fecal indicator-positive groundwater source sample.

(1) A groundwater system may obtain invalidity from the department of a fecal indicator-positive groundwater source sample collected under 41.7(3) “a” only under these conditions:

1. The system provides the department with written notice from the laboratory that improper sample analysis occurred; or
2. The department determines and documents in writing that there is substantial evidence that a fecal indicator-positive groundwater source sample is not related to source water quality.

(2) If the department invalidates a fecal indicator-positive groundwater source sample, the system must collect another source water sample under 41.7(3) “a” within 24 hours of being notified by the department of its invalidity decision. The sample must be analyzed for the same fecal indicator using the analytical methods in 41.7(3) “c.” The department may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the source water sample within 24 hours due to circumstances beyond the system’s control. In the case of an extension, the department must specify how much time the system has to collect the sample.

e. Sampling location.

(1) Any groundwater source sample required under 41.7(3) “a” must be collected at a location prior to any treatment of the groundwater source unless the department approves a sampling location after treatment.

(2) If the system’s configuration does not allow for sampling at the well itself, the system may collect a sample at a department-approved location to meet the requirements of 41.7(3) “a” if the sample is representative of the water quality of that well.

f. New sources. A groundwater system that places a new groundwater source into service must conduct assessment source water monitoring as directed by the department to include those items listed in 41.7(3) “b”(3) to (6). If directed by the department, the system must begin monitoring before the groundwater source is used to provide water to the public.

g. Public notification. A system with a groundwater source sample collected under 41.7(3) “a” or 41.7(3) “b” that is fecal indicator-positive and that is not invalidated under 41.7(3) “d,” including consecutive systems served by the groundwater source, must conduct Tier 1 public notification under 567—subrule 42.1(2).

h. Monitoring violations. Failure to meet the requirements of 41.7(3) “a” through 41.7(3) “f” is a monitoring violation and requires the system to provide Tier 3 public notification under 567—subrule 42.1(4).

41.7(4) Treatment technique requirements for groundwater systems.

a. Groundwater systems with significant deficiencies or source water fecal contamination.

(1) The treatment technique requirements of this subrule, 41.7(4), must be met by groundwater systems when a significant deficiency is identified or when a groundwater source sample collected under 41.7(3) “a”(3) is fecal indicator-positive.

(2) If directed by the department, a groundwater system with a groundwater source sample collected under 41.7(3) “a”(2), 41.7(3) “a”(4), or 41.7(3) “b” that is fecal indicator-positive must comply with the treatment technique requirements of 41.7(4).

(3) When a significant deficiency is identified at a surface water or influenced groundwater system that also uses a groundwater source not under the influence of surface water, the system must comply with provisions of 41.7(4) “a” except in cases where the department determines that the significant deficiency is

in a portion of the distribution system that is served solely by the surface water or influenced groundwater source.

(4) Unless the department directs the groundwater system to implement a specific corrective action, the groundwater system must consult with the department regarding the appropriate corrective action within 30 days of receiving written notice from the department of a significant deficiency, written notice from a laboratory that a groundwater source sample collected under 41.7(3)“a”(3) was found to be fecal indicator-positive, or direction from the department that a fecal indicator-positive sample collected under 41.7(3)“a”(2), 41.7(3)“a”(4), or 41.7(3)“b” requires corrective action. For the purposes of 41.7(4), significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

(5) Within 120 days, or earlier if directed by the department, of receiving written notification from the department of a significant deficiency, written notice from a laboratory that a groundwater source sample collected under 41.7(3)“a”(3) was found to be fecal indicator-positive, or direction from the department that a fecal indicator-positive sample collected under 41.7(3)“a”(2), 41.7(3)“a”(4), or 41.7(3)“b” requires corrective action, the groundwater system must either:

1. Have completed corrective action in accordance with applicable department plan review processes or other department guidance or direction, if any, including department-specified interim measures; or
2. Be in compliance with a department-approved corrective action plan and schedule subject to the specified conditions as follows:
 - Any subsequent modifications to a department-approved corrective action plan and schedule must also be approved by the department; and
 - If the department specifies interim measures for protection of the public health pending department approval of the corrective action plan and schedule, or pending completion of the corrective action plan, the system must comply with these interim measures as well as with any schedule specified by the department.

(6) Corrective action alternatives. Groundwater systems that meet the conditions of 41.7(4)“a”(1) or (2) must implement one or more of the following corrective action alternatives:

1. Correct all significant deficiencies;
2. Provide an alternate source of water;
3. Eliminate the source of contamination; or
4. Provide treatment that reliably achieves at least 4-log treatment of viruses for the groundwater source.

(7) Special notice to the public of significant deficiencies or source water fecal contamination.

1. In addition to the applicable Tier 1 public notification requirements of 567—subrule 42.1(2), a community groundwater system that receives notice from the department of a significant deficiency or notification of a fecal indicator-positive groundwater source sample that is not invalidated by the department under 41.7(3)“d” must inform the public served by the water system under 567—subparagraph 42.3(3)“h”(5) of the fecal indicator-positive source sample or of any significant deficiency that has not been corrected. The system must continue to inform the public annually until the significant deficiency is corrected or the fecal contamination in the groundwater source is determined by the department to be corrected under 41.7(3)“a”(5).

2. In addition to the applicable Tier 1 public notification requirements of 567—subrule 42.1(2), a noncommunity groundwater system that receives notice from the department of a significant deficiency must inform the public served by the water systems in a manner approved by the department of any significant deficiency that has not been corrected within 12 months of being notified by the department or earlier if directed by the department. The system must continue to inform the public annually until the significant deficiency is corrected. The information must include:

- The nature of the significant deficiency and the date the significant deficiency was identified by the department;
- The department-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed; and

- For systems with a large proportion of non-English speaking consumers, as determined by the department, information in the applicable language(s) regarding the importance of the notice or a telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.

3. If directed by the department, a noncommunity water system with significant deficiencies that have been corrected must inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction under 41.7(4) “a”(7)“2.”

b. Compliance monitoring.

(1) Existing groundwater sources. A groundwater system that provides at least 4-log treatment of viruses must make a written application to the department in order to avoid the source water monitoring requirements of 41.7(3). Notification to the department must include engineering, operational, or other information that the department requests to evaluate the submission. The department must approve the 4-log request in writing before the system can avoid the groundwater source monitoring requirements. The system’s operation permit will include the mandatory operational requirements for the approved 4-log virus treatment. If the system subsequently discontinues 4-log treatment of viruses of a groundwater source or no longer wishes to be exempt from the groundwater source monitoring requirements, the system must conduct groundwater source monitoring as required under 41.7(3).

(2) New groundwater sources. A groundwater system that places a groundwater source in service that is not required to meet the source water monitoring requirements of 41.7(4) because the system provides at least 4-log treatment of viruses for the groundwater source must comply with the following requirements:

1. The system must notify the department in writing that it provides at least 4-log treatment of viruses for the groundwater source. Notification to the department must include engineering, operational, or other information that the department requests to evaluate the submission. The contact time values for inactivation of viruses using free chlorine, chlorine dioxide, and ozone are listed in 567—Chapter 43, Appendix C. No CT table is provided for chloramines and total chlorine because the CT values would be prohibitively high for groundwater systems.

2. The system must conduct compliance monitoring as required under 41.7(4) “b”(3) within 30 days of placing the source in service.

3. The system must conduct groundwater source monitoring under 41.7(3) if the system subsequently discontinues 4-log treatment of viruses for the groundwater source.

(3) Monitoring requirements. A groundwater system subject to the requirements of 41.7(4) “a” and 41.7(4) “b”(1) and (2) must monitor the effectiveness and reliability of treatment for that groundwater source before or at the first customer as follows:

1. Chemical disinfection.

- A groundwater system serving more than 3,300 people must continuously monitor the residual disinfectant concentration, using analytical methods specified in 567—subparagraph 43.5(4) “a”(5), at a location approved by the department and must record the lowest residual disinfectant concentration each day that water from the groundwater source is served to the public. The groundwater system must maintain the department-determined minimum residual disinfectant concentration every day the groundwater system serves water from the groundwater source to the public. If there is a failure in the continuous monitoring equipment, the groundwater system must conduct grab sampling every four hours until the continuous monitoring equipment is returned to service. The system must resume continuous residual disinfectant monitoring within 14 days.

- A groundwater system serving 3,300 or fewer people must monitor the residual disinfectant concentration using analytical methods specified in 567—subparagraph 43.5(4) “a”(5) at a location approved by the department and must record the residual disinfectant concentration each day that water from the groundwater source is served to the public. The groundwater system must maintain the department-determined minimum residual disinfectant concentration every day the groundwater system serves water from the groundwater source to the public. The groundwater system must take a daily grab sample during the hour of peak flow or at another time specified by the department. If any daily grab sample measurement falls below the department-determined minimum residual disinfectant concentration, the groundwater system must take follow-up samples every four hours until the residual disinfectant

concentration is restored to the department-determined minimum level. Alternatively, a groundwater system that serves 3,300 or fewer people may monitor continuously and meet the requirements of 41.7(4) "b"(3)"1," first bulleted paragraph.

2. Membrane filtration. A groundwater system that uses membrane filtration to meet the requirements of 41.7(4) "b" to provide at least 4-log treatment of viruses must monitor the membrane filtration process in accordance with all department-specified monitoring requirements and must operate the membrane filtration in accordance with all department-specified compliance requirements. A groundwater system that uses membrane filtration is in compliance with the requirement to achieve at least 4-log removal of viruses when:

- The membrane has an absolute molecular weight cut-off (MWCO), or an alternate parameter that describes the exclusion characteristics of the membrane, that can reliably achieve at least 4-log removal of viruses;

- The membrane process is operated in accordance with department-specified compliance requirements; and

- The integrity of the membrane is intact.

3. Alternative treatment. A groundwater system that uses a department-approved alternative treatment to meet the requirements of 41.7(4) "b" by providing at least 4-log treatment of viruses must:

- Monitor the alternative treatment in accordance with all department-specified monitoring requirements; and

- Operate the alternative treatment in accordance with all compliance requirements that the department determines to be necessary to achieve at least 4-log treatment of viruses.

c. *Discontinuing treatment.* A groundwater system may discontinue 4-log treatment of viruses for a groundwater source if the department determines and documents in writing that 4-log treatment of viruses is no longer necessary for that groundwater source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of 41.7(3).

d. *Monitoring violation.* Failure to meet the monitoring requirements of 41.7(4) "b" is a monitoring violation and requires the groundwater system to provide Tier 3 public notification under 567—subrule 42.1(4).

41.7(5) Treatment technique violations for groundwater systems. A groundwater system must give Tier 2 public notification under 567—subrule 42.1(3) for the treatment technique violations specified in 41.7(5) "a," 41.7(5) "b," and 41.7(5) "c."

a. *Significant deficiency.* A groundwater system with a significant deficiency is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the department) of receiving written notice from the department of the significant deficiency, the system:

- (1) Does not complete corrective action in accordance with any applicable department plan review processes or other department guidance and direction, including department-specified interim actions and measures; or

- (2) Is not in compliance with a department-approved corrective action plan and schedule.

b. *Fecal indicator-positive source sample.* Unless the department invalidates a fecal indicator-positive groundwater source sample under 41.7(3) "d"(1), a groundwater system is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the department) of meeting the conditions of 41.7(4) "a"(1) or (2), the system:

- (1) Does not complete corrective action in accordance with any applicable department plan review processes or other department guidance and direction, including department-specified interim measures; or

- (2) Is not in compliance with a department-approved corrective action plan and schedule.

c. *Failure to maintain 4-log treatment.* A groundwater system subject to the requirements of 41.7(4) "b"(3) that fails to maintain at least 4-log treatment of viruses for a groundwater source is in violation of the treatment technique requirement if the failure is not corrected within four hours of the determination that the system is not maintaining at least 4-log treatment of viruses before or at the first customer.

41.7(6) Reporting and record keeping for groundwater systems.

a. *Reporting.* In addition to meeting the requirements of 567—subrule 42.4(1), a groundwater system regulated under this rule must provide the following information to the department:

(1) A groundwater system conducting compliance monitoring under 41.7(4)“b” must notify the department any time the system fails to meet any of the department-specified requirements for 4-log virus treatment including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within four hours. The groundwater system must notify the department as soon as possible, but in no case later than the end of the next business day.

(2) After completing any corrective action under 41.7(4)“a,” a groundwater system must notify the department within 30 days of completion of the corrective action.

(3) If a groundwater system subject to the requirements of 41.7(3)“a” does not conduct source water monitoring under 41.7(3)“a”(5)“2,” the system must provide documentation to the department within 30 days of the total coliform-positive sample that it met the department’s criteria.

b. Record keeping. In addition to the requirements in 567—subrule 42.5(1), a groundwater system regulated under this rule must maintain the following information in its records:

(1) Documentation of corrective actions, which must be kept for a period of not less than ten years.

(2) Documentation of notice to the public as required under 41.7(4)“a”(7), which must be kept for a period of not less than three years.

(3) Records of decisions under 41.7(3)“a”(5)“2” and records of invalidation of fecal indicator-positive groundwater source samples under 41.7(3)“d”(1), both of which must be kept for a period of not less than five years.

(4) For consecutive systems, documentation of notification to the wholesale system(s) of total coliform-positive samples that are not invalidated under 41.2(1)“d,” which must be kept for a period of not less than five years.

(5) For systems, including wholesale systems, that are required to perform compliance monitoring under 41.7(4)“b”(1), the following documentation must be maintained:

1. Records of the department-specified minimum disinfectant residual, which must be kept for a period of not less than ten years.

2. Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the department-prescribed minimum residual disinfectant concentration for a period of more than four hours, both of which must be kept for a period of not less than five years.

3. Records of department-specified compliance requirements for membrane filtration and of parameters specified by the department for department-approved alternative treatment and records of the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than four hours. Documentation shall be kept for a period of not less than five years.

[ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—41.8(455B) Radionuclides.

41.8(1) Radionuclides.

a. Applicability.

(1) This rule applies to all community public water supplies, and specifies the radionuclide maximum contaminant levels, analytical methodology requirements, and monitoring requirements. The radionuclide reporting requirements are listed in 567—subrule 42.4(1), the public notice requirements are listed in rule 567—42.1(455B), and the best available technology is listed in 567—subparagraph 43.3(10)“b”(3). All CWSs must comply with the requirements and maximum contaminant levels for gross alpha particle activity, radium-226, radium-228, uranium, beta particle activity, and photon emitter radioactivity. Only those CWSs designated by the department to be vulnerable to man-made radioactivity contamination are required to monitor for beta particle activity and photon emitter radioactivity. To determine whether a system is vulnerable to man-made nuclear radioactivity, the department will evaluate proximity to a nuclear facility, source water, historical analytical data, ongoing surveillance data from the nuclear facility, and any other factor considered by the department to be relevant to the vulnerability determination.

(2) Compliance dates. Community water systems must comply with the MCLs listed in 41.8(1)“b”(1) beginning December 8, 2003. Compliance shall be determined in accordance with 41.8(1)“c” through 41.8(1)“f.” Compliance with the radionuclides reporting requirements is required by December 8, 2003.

All CWSs must conduct initial monitoring to determine compliance with 41.8(1) “b”(1) by December 31, 2007.

b. Maximum contaminant levels for radionuclides.

(1) Gross alpha particle activity, radium-226, radium-228, and uranium MCLs. The following table specifies the MCLs for gross alpha particles, radium, and uranium radionuclides:

Contaminant	Maximum Contaminant Level
Gross alpha particle activity, including Radium-226 but excluding radon and uranium	15 pCi/L
Combined Radium-226 and Radium-228	5 pCi/L ¹
Uranium	30 µg/L

¹The combined radium-226 and radium-228 value is determined by the addition of the results of the analysis for radium-226 and the analysis for radium-228.

(2) Beta particle activity and photon radioactivity MCLs.

1. The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.

2. Except for the radionuclides listed below, the concentration of man-made radionuclides causing 4 millirems total body or organ dose equivalents must be calculated on the basis of 2 liter per day drinking water intake, using the 168-hour data lists in “Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure,” National Bureau of Standards Handbook 69 as amended August 1963, United States Department of Commerce. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 millirems/year.

Average Annual Concentrations Assumed to Produce a
Total Body or Organ Dose of 4 mrem/year

Radionuclide	Critical Organ	Concentration
Strontium-90	Bone marrow	8 pCi/L
Tritium	Total body	20,000 pCi/L

c. Compliance determinations. Compliance with 41.8(1) “b” will be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL. If the system is in violation of an MCL, the supplier of the water is required to give notice to the department in accordance with 567—subrule 42.4(1) and to notify the public as required by 567—42.1(455B).

(1) Detection limits. For the purposes of monitoring gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water, “detection limit” is defined in this subparagraph.

1. For the purpose of monitoring radioactivity concentration in drinking water, the required sensitivity of the radioanalysis is defined in terms of a detection limit. The detection limit shall be that concentration which can be counted with a precision of plus or minus 100 percent at the confidence level (1.960 sigma where sigma is the standard deviation of the net counting rate of the sample).

2. To determine compliance with 41.8(1) “b”(1), the detection limit shall not exceed the following concentrations:

Detection Limits for Gross Alpha Particle Activity,
Radium-226, Radium-228, and Uranium

Contaminant	Detection Limit
Gross alpha particle activity	3 pCi/L
Radium-226	1 pCi/L
Radium-228	1 pCi/L
Uranium	1 µg/L

3. To determine compliance with 41.8(1)“b”(2), the detection limits shall not exceed the following concentrations:

Detection Limits for Man-Made
Beta Particle and Photon Emitters

Contaminant	Detection Limit
Gross beta	4 pCi/L
Cesium-134	10 pCi/L
Iodine-131	1 pCi/L
Strontium-89	10 pCi/L
Strontium-90	2 pCi/L
Tritium	1,000 pCi/L
Other radionuclides	1/10 of the applicable limit

(2) Compliance determination.

1. For systems monitoring more than once per year (i.e., quarterly), compliance with the MCL is determined by a running annual average at each sampling point. If the average of any sampling point is greater than the MCL, the system is immediately in violation of the MCL. If any sample result causes the running annual average to exceed the MCL at any sample point, the system is immediately in violation of the MCL.

2. Systems monitoring annually or less frequently (i.e., one-, three-, six-, or nine-year frequency), and whose sample result exceeds the MCL, must revert to quarterly sampling for that contaminant during the next quarter. Systems are required to conduct quarterly monitoring only at the source/entry point at which the sample was collected and for the specific contaminant that triggered the system into the increased monitoring frequency. Systems triggered into increased monitoring will not be considered in violation of the MCL until they have completed one year of quarterly sampling. If any sample result causes the running annual average to exceed the MCL at any sample point, the system is immediately in violation of the MCL.

3. Systems must include all samples taken and analyzed under the provisions of this rule in determining compliance, even if that number is greater than the minimum required by the department.

4. If a system does not collect all required samples when compliance is based on a running annual average of quarterly samples, compliance will be based on the running average of the samples collected.

5. If a sample result is less than the detection limit, a value of zero will be used to calculate the annual average.

6. The department may invalidate results of obvious sampling or analytical errors.

7. Averaging and significant figures. To judge compliance with the maximum contaminant levels listed in 41.8(1)“b,” averages of data shall be used and shall be rounded to the same number of significant figures as the maximum contaminant level for the substance in question.

(3) The department will determine compliance or initiate enforcement action based upon analytical results or other information compiled by department staff or the department’s designee.

(4) The department may assign additional requirements as it deems necessary to protect the public health, including public notification requirements.

d. Analytical methodology for radionuclides. Analysis for the following contaminants shall be conducted to determine compliance with 41.8(1)“b” in accordance with the methods in the following table, or equivalent methods determined in accordance with 567—41.12(455B).

(1) Radionuclide Analytical Methodology Table.

RADIONUCLIDE ANALYTICAL METHODOLOGY

Contaminant	Methodology	Reference (method or page number)								
		EPA ¹	EPA ²	EPA ³	EPA ⁴	SM ⁵	ASTM ⁶	USGS ⁷	DOE ⁸	Other
Naturally occurring:										
Gross alpha ¹¹ & beta	Evaporation	900.0	p. 1	00-01	p. 1	302, 7110B, 7110 B-00		R-1120-76		
Gross alpha ¹¹	Co-precipitation			00-02		7110C, 7110 C-00				
Radium-226	Radon emanation	903.1	p. 16	Ra-04	p. 19	305, 7500-Ra C, 7500Ra C-01	D 3454-97, 05	R-1141-76	Ra-04	NY ⁹
	Radiochemical	903.0	p. 13	Ra-03		304, 7500-Ra B, 7500-Ra B-01	D 2460-97, 07	R-1140-76		GA ¹⁴
Radium-228	Radiochemical	904.0	p. 24	Ra-05	p. 19	7500-Ra D, 7500-Ra D-01		R-1142-76		NY ⁹ NJ ¹⁰ GA ¹⁴
Uranium ¹²	Radiochemical	908.0				7500-U B, 7500-U B-00				
	Fluorometric	908.1				7500-U C (17th edition)	D 2907-97	R-1180-76 R-1181-76	U-04	
	ICP-MS	200.8 ¹³				3125	D 5673-03, 05, 10			
	Alpha spectrometry			00-07	p. 33	7500-U C, 7500-U C-00	D 3972-97, 02, 09	R-1182-76	U-02	
	Laser phosphorimetry						D 5174-97, 02, 07			
	Alpha liquid scintillation spectrometry						D 6239-09			
Man-made:										
Radioactive Cesium	Radiochemical	901.0	p. 4			7500-Cs B, 7500-Cs B-00	D 2459-72	R-1111-76		
	Gamma ray spectrometry	901.1			p. 92	7120, 7120-97	D 3649-91, 98a, 06	R-1110-76	4.5.2.3	
Radioactive Iodine	Radiochemical	902.0	p. 6 p. 9			7500-I B, 7500-I B-00 7500-I C, 7500-I C-00 7500-I D, 7500-I D-00	D 3649-91, 98a, 06			
	Gamma ray spectrometry	901.1			p. 92	7120, 7120-97	D 4785-93, 00a, 08		4.5.2.3	

Contaminant	Methodology	Reference (method or page number)								
		EPA ¹	EPA ²	EPA ³	EPA ⁴	SM ⁵	ASTM ⁶	USGS ⁷	DOE ⁸	Other
Radioactive Strontium 89, 90	Radiochemical	905.0	p. 29	Sr-04	p. 65	303, 7500-Sr B, 7500-Sr B-01		R-1160-76	Sr-01 Sr-02	
Tritium	Liquid scintillation	906.0	p. 34	H-02	p. 87	306, 7500- ³ H B, 7500- ³ H B-00	D 4107-91, 98 (Reapproved 2002), 08	R-1171-76		
Gamma emitters	Gamma ray spectrometry	901.1 902.0 901.0			p. 92	7120 7500-Cs B, 7500- Cs B-00 7500-I B, 7500-I B-00	D 3649-91, 98a, 06 D 4785-93, 00a, 08	R-1110-76	Ga-01-R	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of documents 1 through 10 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW, Room B135, Washington, DC 20460 (telephone (202)566-2426); or at the Office of Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

¹“Prescribed Procedures for Measurement of Radioactivity in Drinking Water,” EPA 600/4-80-032, August 1980. Available at the US Department of Commerce, NTIS, 5285 Port Royal Road, Springfield, VA 22161 (telephone (800)553-6847) PB 80-224744.

²“Interim Radiochemical Methodology for Drinking Water,” EPA 600/4-75-008(revised), March 1976. Available at NTIS, *ibid.* PB 253258.

³“Radiochemistry Procedures Manual,” EPA 520/5-84-006, December 1987. Available at NTIS, *ibid.* PB 84-215581.

⁴“Radiochemical Analytical Procedures for Analysis of Environmental Samples,” March 1979. Available at NTIS, *ibid.* EMSL LV 053917.

⁵Standard Methods for the Examination of Water and Wastewater, 13th, 17th, 18th, 19th, 20th, 21st, and 22nd editions, 1971, 1989, 1992, 1995, 1998, 2005, and 2012. Available at American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710. Methods 302, 303, 304, 305, and 306 are only in the 13th edition. Methods 7110B, 7500-Ra B, 7500-Ra C, 7500-Ra D, 7500-U B, 7500-Cs B, 7500-I B, 7500-I C, 7500-I D, 7500-Sr B, 7500-3H B are in the 17th, 18th, 19th, 20th, 21st, and 22nd editions. Method 7110C and Method 7500-U C Alpha spectrometry are in the 18th, 19th, 20th, 21st, and 22nd editions. Method 7500-U C Fluorimetric Uranium is only in the 17th and 21st editions. Method 7120 is only in the 19th, 20th, 21st, and 22nd editions. Method 3125 is only in the 20th edition. Methods 7110 B-00, 7110 C-00, 7500-Ra B-01, 7500-Ra C-01, 7500-Ra D-01, 7500-U B-00, 7500-U C-00, 7500-I B-00, 7500-I C-00, 7500-I D-00, 7120-97, 7500-Sr B-01, and 7500-³H B-00 are available online at www.standardmethods.org. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

⁶Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 2002. Any year containing the cited version of the method may be used. Available at ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

⁷“Methods for Determination of Radioactive Substances in Water and Fluvial Sediments,” Chapter A5 in Book 5 of Techniques of Water-Resources Investigations of the United States Geological Survey, 1977. Available at U.S. Geological Survey (USGS) Information Services, Box 25286, Federal Center, Denver, CO 80225-0425.

⁸“EML Procedures Manual,” 28th (1997) or 27th (1990) edition, Volumes 1 and 2; either edition may be used. In the 27th edition, Method Ra-04 is listed as Ra-05, and Method Ga-01-R is listed as Sect. 4.5.2.3. Available at the Environmental Measurements Laboratory, U.S. Department of Energy (DOE), 376 Hudson Street, New York, NY 10014-3621.

⁹“Determination of Ra-226 and Ra-228 (Ra-02),” January 1980, revised June 1982. Available at Radiological Sciences Institute Center for Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, NY 12201.

¹⁰“Determination of Radium-228 in Drinking Water,” August 1980. Available at State of New Jersey, Department of Environmental Protection, Division of Environmental Quality, Bureau of Radiation and Inorganic Analytical Services, 9 Ewing Street, Trenton, NJ 08625.

¹¹Natural uranium and thorium-230 are approved as gross alpha calibration standards for gross alpha with co-precipitation and evaporation methods; americium-241 is approved with co-precipitation methods.

¹²If uranium (U) is determined by mass, a 0.67 pCi/μg of uranium conversion factor must be used. This conversion factor is based on the 1:1 activity ratio of U-234 to U-238 that is characteristic of naturally occurring uranium.

¹³“Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry,” Revision 5.4, which is published in “Methods for the Determination of Metals in Environmental Samples – Supplement 1,” EPA 600-R-94-111, May 1994. Available at NTIS, PB 95-125472.

¹⁴“The Determination of Radium-226 and Radium-228 in Drinking Water by Gamma-Ray Spectrometry Using HPGW or Ge(Li) Detectors,” Revision 1.2, December 2004. Available from Environmental Resources Center, Georgia Institute of Technology, 620 Cherry Street, Atlanta, GA 30332-0335; telephone: (404)894-3776.

(2) Method references for other radionuclides. When the identification and measurement of radionuclides other than those listed in 41.8(1)“b” are required, the following references are to be used, except in cases where alternative methods have been approved in accordance with 567—41.12(455B).

1. “Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions,” H. L. Krieger and S. Gold, EPA-R4-73-014, Environmental Protection Agency, Cincinnati, Ohio 45268 (May 1973).

2. “HASL Procedure Manual,” edited by John H. Harley. HASL 300, ERDA Health and Safety Laboratory, New York, NY (1973).

e. Monitoring requirements for gross alpha, radium-226, radium-228, and uranium.

(1) General requirements.

1. Monitoring frequency and confirmation samples. The department may require more frequent monitoring than specified in this paragraph. The department may require confirmation samples at its discretion. The results of the initial and confirmation samples will be averaged for use in compliance determinations.

2. Monitoring period. Each PWS shall monitor during the time period designated by the department in the operation permit.

(2) Applicability and sampling locations.

1. Existing systems and sources. All existing CWSs must sample at every entry point to the distribution system that is representative of all sources being used under normal operating conditions. The system must take each sample at the same source/entry sampling point, unless conditions make another alternate sampling point more representative of each source, or the department has designated a distribution system location, in accordance with 41.8(1)“e”(3)“4.” The department must approve any alternate sampling point for radionuclides.

2. New systems and sources. All new CWSs or CWSs that use a new source of water must begin to conduct initial monitoring for the new system or source within the first calendar quarter after initiating use of the system or source. More frequent monitoring must be conducted by the CWS when required by the department, in the event of possible contamination or when changes in the distribution system or treatment processes occur which may increase the concentration of radioactivity in finished water.

(3) Initial monitoring. Systems must conduct initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium as follows. If the average of the initial monitoring results for a source/entry point is above the MCL, the system must collect and analyze quarterly samples at that source/entry point until the system has results from four consecutive quarters that are at or below the MCL, unless the system enters into another schedule as part of a formal compliance agreement with the department.

1. Systems without historical monitoring data. Systems without historical monitoring data must collect four consecutive quarterly samples at all source/entry sampling points before December 31, 2007. The department may waive the final two quarters of initial monitoring from a source/entry point if the results of the samples from the previous two quarters are below the detection limit.

2. Systems with historical monitoring data and one source/entry point. Systems with only one source/entry point may use historical monitoring data collected between January 1, 2000, and December 31, 2003, from either the representative point in the distribution system or the source/entry point to satisfy the initial monitoring requirement.

3. Systems with historical source/entry point monitoring data and multiple source/entry points. Systems with multiple source/entry points that also have appropriate historical monitoring data for each source/entry point may use the monitoring data collected between January 1, 2000, and December 31, 2003, to satisfy the initial monitoring requirement.

4. Systems with historical distribution system monitoring data and multiple source/entry points. Systems with appropriate historical data for a representative point in the distribution system and multiple source/entry points may use the monitoring data collected between January 1, 2000, and December 31, 2003, provided that the department determines that the historical data satisfactorily demonstrates that each source/entry point is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of contaminant levels between source/entry points. The department must make a written finding indicating how the data conforms to these requirements, in order for the data to satisfy the initial monitoring requirements.

(4) Reduced monitoring. The department may allow a CWS to reduce the future frequency of monitoring from once every three years to once every six or nine years at each source/entry point, based on the following criteria. The samples collected during the reduced monitoring period must be used to determine the monitoring frequency for subsequent monitoring periods (e.g., if a system’s source/entry point is on a nine-year frequency, and the sample result is above half of the MCL, then the next monitoring frequency for that source/entry point is three years). If a system has a monitoring result that exceeds the MCL while on reduced monitoring, the system must collect and analyze quarterly samples at that source/entry point until the system has results from four consecutive quarters that are below the MCL, unless the system enters into another schedule as part of a formal compliance agreement with the department.

1. Nine-year frequency. If the average of the initial monitoring results for each contaminant is below the detection limit specified in 41.8(1)“c”(1)“2,” the system must collect and analyze for that contaminant using at least one sample at that source/entry point every nine years.

2. Six-year frequency. If the average of the initial monitoring results for gross alpha particle activity, uranium, and combined radium-226 and radium-228 is at or above the detection limit and at or below half the MCL for that contaminant, the system must collect and analyze for that contaminant using at least one sample at that source/entry point every six years. The analytical results for radium-226 and radium-228 must be added together to yield the combined result.

3. Three-year frequency. If the average of the initial monitoring results for gross alpha particle activity, uranium, and combined radium-226 and radium-228 is above half of the MCL and at or below the MCL for that contaminant, the system must collect and analyze for that contaminant using at least one sample at that source/entry point every three years. The analytical results for radium-226 and radium-228 must be added together to yield the combined result.

(5) Composite samples. To fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a system may composite up to four consecutive quarterly samples from a single entry point if analysis is done within one year of the first sample. The analytical results from the composited samples will be considered by the department as the average analytical result to determine compliance with the MCLs and to determine the future monitoring frequency. If the analytical result from the composited sample is greater than half of the MCL, the department may require additional quarterly samples from the system before the system will be allowed to sample under a reduced monitoring schedule.

(6) Data substitution using gross alpha particle activity results.

1. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/L.

2. The gross alpha particle activity measurement shall have a confidence interval of 95 percent (1.65 sigma, where sigma is the standard deviation of the net counting rate of the sample) for uranium. When a system uses a gross alpha particle activity measurement in lieu of a uranium measurement, the gross alpha particle activity analytical result will be used to determine the future monitoring frequency for uranium. If the gross alpha particle activity result is less than the detection limit, half the detection limit will be used to determine compliance and the future monitoring frequency.

f. Monitoring requirements for beta particle and photon emitters. To determine compliance with the maximum contaminant levels in 41.8(1)“b”(2) for beta particle and photon radioactivity, a system must monitor at a frequency specified in 41.8(1)“f.”

(1) General requirements.

1. Monitoring frequency and confirmation samples. The department may require more frequent monitoring than specified in 41.8(1)“f.” The department may require confirmation samples at its discretion. The results of the initial and confirmation samples will be averaged for use in compliance determinations.

2. Monitoring period. Each PWS shall monitor during the time period designated by the department in the operation permit.

(2) Systems designated by the department as vulnerable to man-made radioactivity.

1. Initial monitoring. Systems that have been determined by the department to be vulnerable to man-made radioactivity must collect quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each entry point to the distribution system, beginning within one quarter after being notified by the department of this requirement. Systems already required to conduct beta particle and photon radioactivity monitoring must continue to sample until the department removes the monitoring requirement.

2. Reduced monitoring. The department may reduce the frequency of monitoring at that sampling point to once every three years, if the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a source/entry point has a running annual average (computed quarterly) of less than or equal to 50 pCi/L (screening level). Systems must collect all of the samples required in 41.8(1)“f”(2)“1” during the reduced monitoring period.

3. Data substitution. For a system in the vicinity of a nuclear facility, the department may allow the system to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system’s source/entry point(s), where the department determines such data is applicable to a particular water system. In the event that there is a release from a nuclear facility, systems which are using

surveillance data must begin monitoring at the system's source/entry point(s) in accordance with 41.8(1) "f"(2).

(3) Systems determined to utilize waters contaminated by effluents from nuclear facilities.

1. Initial monitoring. Systems designated by the department as utilizing water contaminated by effluents from nuclear facilities must sample for beta particle and photon radioactivity. Systems must collect quarterly samples for beta emitters and iodine-131 and annual samples for tritium and strontium-90 at each entry point to the distribution system, beginning within one quarter after being notified by the department. Systems already designated by the department as systems using waters contaminated by effluents from nuclear facilities must continue to sample until the department removes the sampling requirement.

- Gross beta particle activity. Quarterly monitoring for gross beta particle activity shall be based on the analysis of monthly samples or the analysis of a composite of three monthly samples. The former is recommended.

- Iodine-131. A composite of five consecutive daily samples shall be analyzed once each quarter for iodine-131. The department may require more frequent monitoring when iodine-131 is identified in the finished water.

- Strontium-90 and tritium. Annual monitoring for strontium-90 and tritium shall be conducted by means of the analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples. The latter procedure is recommended.

2. Reduced monitoring. If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/L (screening level), the department may reduce the frequency of monitoring at that sampling point to every three years. Systems must collect all samples required in 41.8(1) "f"(3) during the reduced monitoring period.

3. Data substitution. For systems in the vicinity of a nuclear facility, the department may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry point(s), where the department determines such data is applicable to a particular water system. In the event that there is a release from a nuclear facility, systems which are using surveillance data must begin monitoring at the CWS source/entry point in accordance with 41.8(1) "f"(2) "1."

(4) Monitoring frequency waiver. A CWS designated by the department to monitor for beta particle and photon radioactivity cannot apply to the department for a waiver from the monitoring frequencies specified in 41.8(1) "f"(2) or (3).

(5) Community water systems may analyze for naturally occurring potassium-40 beta particle activity from the same or an equivalent sample used for the gross beta particle activity analysis. Systems are allowed to subtract the potassium-40 beta particle activity value from the total gross beta particle activity value to determine if the screening level is exceeded. The potassium-40 beta particle activity must be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

(6) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the appropriate screening level, an analysis of the sample must be performed to identify the major radioactive constituents present in the sample, and the appropriate doses must be calculated and summed to determine compliance with 41.8(1) "b"(2) "1," using the formula in 41.8(1) "b"(2) "2." Doses must also be calculated and combined for measured levels of tritium and strontium to determine compliance.

(7) Monitoring after an MCL violation. Systems must monitor monthly at the sampling point(s) which exceed the maximum contaminant level in 41.8(1) "b"(2) beginning the month after the exceedance occurs. Systems must continue monthly monitoring until the system has established, by a rolling average of three monthly samples, that the MCL is being met. Systems that establish that the MCL is being met must return to quarterly monitoring until they meet the requirements set forth in 41.8(1) "f"(2) or 41.8(1) "f"(3) "2."

41.8(2) Reserved.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—41.9(455B) Sampling and analytical requirements for radionuclides. Rescinded IAB 1/7/04, effective 2/11/04.

567—41.10(455B) Reporting, public notification and record keeping. Rescinded IAB 8/11/99, effective 9/15/99.

567—41.11(455B) Special monitoring.

41.11(1) *Special monitoring for sodium.* Suppliers of water for community public water systems shall collect and have analyzed one sample per source or plant, for the purpose of determining the sodium concentration in the distribution system. Systems utilizing multiple wells that draw raw water from a single aquifer may, with departmental approval, be considered as one source for determining the minimum number of samples to be collected. Sampling frequency and approved analytical methods are as follows:

a. Surface water systems. Systems utilizing a surface water source, in whole or in part, shall monitor for sodium at least once annually at the entry point to the distribution system.

b. Groundwater systems. Systems utilizing groundwater sources shall monitor at least once every three years at the entry point to the distribution system.

c. Increased monitoring. Suppliers may be required to monitor more frequently where sodium levels are variable or if certain types of treatment are used, such as cation exchange softening.

d. Analytical methodology. Analyses for sodium shall be performed in accordance with 41.3(1) “e”(1).

e. Reporting. The sodium level shall be reported to the public by at least one of the following methods:

(1) The community public water supply shall notify the appropriate local public health officials of the sodium levels by written notice by direct mail within three months of receipt of the analytical results. A copy of each notice required by this subrule shall be sent to the department within ten days of its issuance.

(2) In lieu of the reporting requirement of 41.11(1) “e”(1), the community public water supply shall include the sodium level in its annual consumer confidence report, pursuant to 567—paragraph 42.3(3) “c”(1)“12.”

f. CWSs using cation exchange treatment. Community water systems which utilize cation exchange treatment are required to collect one sodium sample of the finished water per year after all treatment. Analysis and reporting must be done in accordance with 41.11(1) “d” and “e.”

41.11(2) *Special monitoring for ammonia.* Ammonia in the groundwater is a precursor to the development of nitrite and nitrate in a drinking water system. Both nitrite and nitrate are contaminants with acute health effects. This subrule lists the ammonia analytical methodology, sample preservation requirements, and holding times to be used for drinking water samples.

a. Analytical methodology. Analyses for ammonia shall be performed in accordance with the following methodology, with a detection limit of 0.1 mg/L ammonia as N:

Methodology	EPA ¹	Standard Methods (20th edition)	ASTM	USGS ²	Other
Manual distillation at pH 9.5 ⁴ , followed by:	350.2	4500-NH3 B			973.49 ³
Titration	350.2	4500-NH3 C			
Manual electrode	350.3	4500-NH3 D or E	D1426-93(B)		
Automated phenate	350.1	4500-NH3 G		I-4523-85	
Automated electrode					See note ⁵

¹“Methods for Chemical Analysis of Water and Wastes,” Environmental Protection Agency, EPA-600/4-79-020, Revised March 1983 and 1979 where applicable.

²Fishman, M.J., et al., “Methods for Analysis of Inorganic Substances in Water and Fluvial Sediments,” U.S. Department of the Interior, Techniques of Water—Resource Investigations of the U.S. Geological Survey, Denver, CO, Revised 1989, unless otherwise stated.

³“Official Methods of Analysis of the Association of Official Analytical Chemists,” 15th edition, 1990.

⁴Manual distillation is not required if the samples are very low in turbidity; however, manual distillation should be used whenever matrix interferences could be present in the sample, and will be required to resolve any controversies.

⁵Ammonia, Automated Electrode Method, Industrial Method Number 379-75 WE, dated February 19, 1976, Bran & Luebbe (Technicon) Auto Analyzer II, Bran & Luebbe Analyzing Technologies, Inc., Elmsford, NY 10523.

b. Sample preservation and holding time. The system must collect a 500 mL grab sample into a plastic or glass bottle. The sample must be acidified at the time of collection to a pH of less than 2 by the addition of sulfuric acid (H₂SO₄) and refrigerated at 4 degrees Celsius. The sample must be analyzed within 28 days. If the sample is analyzed within 24 hours of collection, the sample acidification is not required.

567—41.12(455B) Alternative analytical techniques. With the written permission of this department, concurred in by the EPA, an alternative analytical technique may be employed. An alternative technique shall be acceptable only if it is substantially equivalent to the prescribed test in both precision and accuracy as it relates to the determination of compliance with any maximum contaminant level. The use of the alternative analytical technique shall not decrease the frequency of monitoring required by 567—41.2(455B) through 567—41.8(455B).

567—41.13(455B) Monitoring of interconnected public water supply systems. When a public water supply system supplies water to one or more other public water supply systems, the department may modify the monitoring requirements imposed by this part to the extent that the interconnection of the systems justifies treating them as a single system for monitoring purposes. Any modified monitoring shall be conducted pursuant to a schedule specified by the department and concurred in by the administrator of the U.S. Environmental Protection Agency.

567—41.14(455B) Department analytical results used to determine compliance. Analytical results or other information compiled by departmental staff may be used to determine compliance with the maximum contaminant levels, action levels, or treatment techniques listed in 567—Chapters 41 and 43 or for initiating remedial action with respect to these violations.

567—41.15(455B) Monitoring of other contaminants. If the department determines that other contaminants are present in a public water supply, and the contaminants are known to pose, or scientific evidence strongly suggests that they pose, a threat to human health, the supplier of water may be required to monitor for such contaminants. The supplier of water will monitor at a frequency and in a manner which will adequately identify the magnitude and extent of the contamination. The monitoring frequency and sampling location will be determined by the department. All analytical results will be obtained using approved EPA methods and all analytical results will be submitted to the department for review and evaluation. Any monitoring required under this paragraph will be incorporated into an operation permit or an order.

These rules are intended to implement Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192.

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◇ Two or more ARCs

¹ Effective date of [ARC4359A] 41.3(1)“b”(2)“3”; 41.3(1)“c”(2)“4,” new sentence at end; 41.3(1)“c”(3)“6,” “10”; 41.3(1)“c”(8), first sentence; 41.4(1)“d”(5)“4”; 41.5(1)“a”; 41.10(7)“a”(3); 41.11(2)“a”; 41.11(2)“c”(4); 41.11(2)“c”(5), first sentence, delayed 70 days by the Administrative Rules Review Committee at its meeting held November 9, 1993; delay lifted by the Committee December 14, 1993.

CHAPTER 42
PUBLIC NOTIFICATION, PUBLIC EDUCATION,
CONSUMER CONFIDENCE REPORTS, REPORTING,
AND RECORD MAINTENANCE

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—42.1(455B) Public notification.

42.1(1) *Applicability.* Each owner or operator of a public water system must give notice for all violations of public drinking water rules and for other situations, as listed in this subrule. The term “violations” includes violations of, or failure to comply with, the maximum contaminant level, maximum residual disinfection level, treatment technique, monitoring requirements, and testing procedures in 567—Chapters 40 through 43. The term “other situations” includes all situations determined by the department to require a public notice, such as a waterborne disease outbreak or other waterborne emergency; exceedance of the nitrate MCL by noncommunity systems where granted permission by the department under 567—paragraph 41.3(1)“a”; exceedance of fluoride level over 2.0 mg/L; availability of unregulated contaminant monitoring data in accordance with CFR Title 40, Part 141.40, failure to meet the terms of a compliance schedule; exceedance of a health advisory as determined by the department; failure to comply with the public notification requirements, public education requirements, or consumer confidence report requirements; failure to meet the terms of an administrative or court order; failure to meet the data and other reporting requirements; failure to retain a certified operator in accordance with 567—subrule 43.1(5); and any other situation where the department determines public notification is needed. Public notification is not required for ammonia monitoring conducted pursuant to 567—subrule 41.11(2).

a. Types of public notice. Public notice requirements are divided into three tiers, to take into account the seriousness of the violation or situation and of any potential adverse health effects that may be involved. The public notice requirements for each violation or situation are determined by the tier to which it is assigned.

(1) Tier 1 public notice is required for all drinking water violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.

(2) Tier 2 public notice is required for all other drinking water violations and situations with potential to have serious adverse effects on human health.

(3) Tier 3 public notice is required for all other drinking water violations and situations not included in Tier 1 or Tier 2.

b. Notification. Each public water system must provide public notice to persons served by the water system, in accordance with this rule. A copy of the notice must also be sent to the department, in accordance with the requirements under paragraph 42.4(1)“c.”

(1) Consecutive systems. Public water systems that sell or otherwise provide drinking water to other public water systems (i.e., to consecutive systems) are required to give public notice to the owner or operator of the consecutive system. The consecutive system is responsible for providing public notice to the persons it serves, and must meet the appropriate Tier requirements for the violation.

(2) Systems with multiple physically or hydraulically isolated distribution systems. If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the department may allow the system to limit distribution of the public notice only to persons served by that portion of the system which is out of compliance. Permission by the department to limit distribution of the notice must be granted in writing.

42.1(2) *Tier 1 public notice requirements.*

a. Violations and situations which require Tier 1 notice. The following types of violations or situations require Tier 1 public notice:

(1) Violation of the MCL for *E. coli*, as specified in 567—paragraph 41.2(1)“a.”

(2) Rescinded IAB 4/11/18, effective 5/16/18.

(3) Violation of the MCL for nitrate or nitrite, as defined in 567—subparagraph 41.3(1)“b”(1).

(4) Failure by the water system to collect a confirmation sample within 24 hours of the system's receipt of the first sample result showing an exceedance of the nitrate or nitrite MCL, when directed by the department, as specified in 567—paragraph 41.3(1) "c"(7)"2."

(5) Exceedance of the nitrate MCL by noncommunity water systems, where permitted to exceed the MCL by the department under 567—paragraph 41.3(1) "a," as required under 42.1(7) "c."

(6) Violation of the MRDL for chlorine dioxide when one or more samples, taken in the distribution system on the day following an exceedance of the MRDL in the sample collected at the entrance to the distribution system, exceeds the MRDL, as defined in 567—paragraph 43.6(1) "b."

(7) Failure by the water system to collect the required chlorine dioxide samples in the distribution system on the day following an exceedance of the MRDL in the sample collected at the entrance to the distribution system.

(8) Violation of the treatment technique requirement by a surface water or influenced groundwater public water system resulting from a single exceedance of the maximum allowable turbidity limit, as specified in rule 567—43.5(455B), 567—43.9(455B), or 567—43.10(455B), where the department determines after consultation with the system that a Tier 1 notice is required, or where the consultation with the department does not take place within 24 hours after the system learns of the violation.

(9) Occurrence of a waterborne disease outbreak, as defined in rule 567—40.2(455B), or other waterborne emergency, such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination.

(10) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the department either in its rules or on a case-by-case basis.

(11) Detection of *E. coli*, enterococci, or coliphage in source water samples, as specified in 567—paragraphs 41.7(3) "a" and 41.7(3) "b."

b. Timing of Tier 1 public notice. Public water systems must:

(1) Provide a public notice as soon as practical but no later than 24 hours after the system learns of the violation;

(2) Initiate consultation with the department as soon as practical, but no later than 24 hours after the system learns of the violation or situation, to determine additional public notice requirements. For consultation with department staff after normal business hours, the system should contact the department via the department's Environmental Emergency Reporting Hotline telephone number (515)725-8694; and

(3) Comply with any additional public notification requirements, including any repeat notices or direction on the duration of the posted notices, that are established as a result of the consultation with the department. Such requirements may include the timing, form, manner, frequency, and content of repeat notices (if any) and other actions designed to reach all persons served. All NTNCs must notify the parent or legal guardian of each child under 18 years of age and of any nursing home resident of the Tier 1 violation as soon as possible and within 72 hours, including the information required in the public notice under subrule 42.1(5).

c. Form and manner of Tier 1 public notice. Public water systems must provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the public water system must fit the specific situation, and must be designed to reach residential, transient, and nontransient users of the water system. In order to reach all persons served, water systems are to use, at a minimum, one or more of the following forms of delivery. The department may require that multiple forms of notification be used in a specific situation.

(1) Appropriate broadcast media, such as radio or television;

(2) Posting of the notice in conspicuous locations throughout the area served by the water system;

(3) Hand delivery of the notice to persons served by the water system; or

(4) Another delivery method approved in writing by the department.

42.1(3) *Tier 2 public notice requirements.*

a. Violations and situations which require Tier 2 notice. The following types of violations or situations require Tier 2 public notice:

(1) All violations of the MCL, MRDL, and treatment technique requirements, except where a Tier 1 notice is required under subrule 42.1(2);

(2) Violations of the monitoring and testing procedure requirements, where the department determines that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation;

(3) Failure to comply with the requirements of any compliance schedule prescribed in an operation permit, administrative order, or court order pursuant to 567—subrule 43.2(5);

(4) Failure to comply with a health advisory as determined by the department; and

(5) Failure to take corrective action or failure to maintain at least 4-log treatment of viruses (using inactivation, removal, or a department-approved combination of 4-log virus inactivation and removal) before or at the first customer under 567—paragraph 41.7(4) “a.”

b. Timing of Tier 2 public notice. Public water systems must:

(1) Provide the initial public notice as soon as practical, but no later than 30 days after the system learns of the violation. If the public notice is posted, the notice must remain in place for as long as the violation or situation persists, but in no case for less than 7 days, even if the violation or situation is resolved. The department may allow additional time for the initial notice of up to three months from the date the system learns of the violation; however, such an extension must be on a case-by-case basis and be made in writing by the department.

(2) The public water system must repeat the notice every three months as long as the violation or situation persists, unless the department determines that appropriate circumstances warrant a different repeat frequency. If the department determines that a repeat notice frequency of longer than every three months is allowed, that decision must be made in writing by the department and must be on a case-by-case basis. In no circumstance may the repeat notice be given less frequently than once per year. Repeat notices for a coliform bacteria MCL, a treatment technique violation under 567—paragraph 41.2(1) “a” or 41.2(1) “l,” or a turbidity treatment technique violation under rule 567—43.9(455B) or 567—43.10(455B) must be made every three months or more frequently.

(3) A public water system using surface water or influenced groundwater with a treatment technique violation resulting from a single exceedance of the maximum allowable turbidity limit pursuant to 567—43.9(455B) or 567—43.10(455B) must consult with the department as soon as practical, but no later than 24 hours after the public water system learns of the violation, to determine whether a Tier 1 or Tier 2 public notice is required to protect public health. For consultation with department staff after normal business hours, the system should contact the department via the department’s Environmental Emergency Reporting Hotline telephone number (515)725-8694. If the consultation does not occur within the 24-hour period, the public water system must distribute a Tier 1 notice of the violation within the next 24 hours, or no later than 48 hours after the system learns of the violation, following the requirements of paragraphs 42.1(2) “b” and 42.1(2) “c.”

c. Form and manner of Tier 2 public notice. Public water systems must provide the initial public notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of public water system, but it must at a minimum meet the following requirements:

(1) Community water systems must provide notice by the following methods, unless directed otherwise in writing by the department:

1. Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

2. Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by mail or direct delivery. Such persons may include those who do not pay water bills or do not have service connection addresses, such as house renters, apartment dwellers, university students, nursing home patients, or prison inmates. Other methods may include:

- Publication in a local newspaper;

- Delivery of multiple copies for distribution by customers that provide their drinking water to others, such as apartment building owners or large private employers;
- Posting in public places served by the system or on the Internet; or
- Delivery of the notice to community organizations.

(2) Noncommunity water systems (TNC and NTNC) must provide notice by the following methods, unless directed otherwise in writing by the department:

1. Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

2. Any other method reasonably calculated to reach other persons served by the system who would not normally be reached by posting, mail, or direct delivery. Such persons may include those served who may not see a posted notice because the posted notice is not in a location they routinely visit. Other methods may include:

- Publication in a local newspaper or newsletter distribution to customers;
- Use of electronic mail (email) to notify employees or students; or
- Delivery of multiple copies in central locations, such as community centers.

3. In addition to the requirements in 42.1(3)“c”(2)“1” and “2,” nontransient noncommunity public water systems that serve children under 18 years of age, such as child care facilities, schools, and hospitals, or nursing home residents, including elder care facilities, shall provide the public notice in writing to the parent or legal guardian of each person within the time period specified by the department. The content of the public notice must meet the requirements of subrule 42.1(5).

42.1(4) Tier 3 public notice requirements.

a. Violations and situations which require Tier 3 notice. The following types of violations or situations require Tier 3 public notice:

(1) Monitoring violations under 567—Chapters 41, 42, and 43, except where a Tier 1 notice is required under subrule 42.1(2) or where the department determines that a Tier 2 notice is required;

(2) Failure to comply with a testing procedure established in 567—Chapters 41, 42, and 43, except where a Tier 1 notice is required under subrule 42.1(2) or where the department determines that a Tier 2 notice is required;

(3) Availability of unregulated contaminant monitoring results, as required of certain public water supply systems by CFR Title 40, Part 141.40, as required under paragraph 42.1(7)“a”;

(4) Exceedance of the fluoride level of 2.0 mg/L and not exceeding the MCL of 4.0 mg/L, as required under paragraph 42.1(7)“b”;

(5) Failure to report data or analytical results required under 567—Chapters 41, 42, and 43 to the department;

(6) Failure to meet the requirements of this chapter for public notification, public education, or the development and distribution of the Consumer Confidence Report;

(7) Failure to retain a certified operator in accordance with 567—subrule 43.1(5) and the department determines that public notification is required;

(8) Failure to maintain records required under 567—Chapters 41, 42, and 43; and

(9) Any other situation where the department determines public notification is needed.

b. Timing of Tier 3 public notice.

(1) Initial notice.

1. For violations or situations listed in subparagraphs 42.1(4)“a”(1), (2), (5), and (6), public water systems must provide the initial public notice within 12 months after the public water system learns of the violation or situation. If the violation pertains to a contaminant that could have acute health effects as determined by the department, such as coliform bacteria, nitrate, nitrite, or turbidity, the initial public notice must be provided within 3 months. If the public notice is posted, the notice must remain in place for as long as the violation or other situation persists, but in no case less than seven days, even if the violation or situation is resolved.

2. For availability of unregulated contaminant monitoring results pursuant to subparagraph 42.1(4) “a”(3), the system must provide the initial public notice within 12 months of receiving the unregulated contaminant monitoring results.

3. For subparagraphs 42.1(4) “a”(4), (7), and (8), the timing of the initial notice is at the discretion of the department, but the notice must be made within 12 months of the violation or situation.

(2) Repeat notice.

1. For violations or situations listed in subparagraphs 42.1(4) “a”(1), (2), (4), (5), and (6), public water systems must repeat the public notice every 12 months in which the violation or situation persists. If the violation pertains to a contaminant that could have acute health effects, such as coliform bacteria, nitrate, nitrite, or turbidity, the system must repeat the public notice every 3 months in which the violation or situation persists. If the public notice is posted, the notice must remain in place for as long as the violation or other situation persists, but in no case less than seven days, even if the violation or situation is resolved.

2. For availability of unregulated contaminant monitoring results pursuant to subparagraph 42.1(4) “a”(3), the system is not required to repeat the public notice, once the initial public notice requirement has been met.

3. For subparagraphs 42.1(4) “a”(4), (7), and (8), the requirement for and timing of the repeat notice is at the discretion of the department and, if required, the notice must be made within 12 months of the initial notice.

c. Form and manner of Tier 3 public notice. Public water systems must provide the initial notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

(1) Community water systems. Unless directed otherwise in writing by the department, community water systems must provide notice by:

1. Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

2. Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by mail or direct delivery notice. Such persons may include those who do not pay water bills or do not have service connection addresses, such as house renters, apartment dwellers, university students, nursing home patients, or prison inmates. Other methods may include:

- Publication in a local newspaper;
- Delivery of multiple copies for distribution by customers that provide their drinking water to others, such as apartment building owners or large private employers;
- Posting in public places or on the Internet; or
- Delivery of the notice to community organizations.

3. Use of the Consumer Confidence Report for initial and repeat notices. For community water systems, the Consumer Confidence Report (CCR) required under 567—42.3(455B) may be used as a vehicle for the initial Tier 3 public notice and all required repeat notices, as long as:

- The CCR is provided to persons served within the time frames specified in 42.1(4) “b”;
- The Tier 3 notice contained in the CCR follows the content requirements under 42.1(5); and
- The CCR is distributed following the delivery requirements under 42.1(4) “c”(1) and (2).

(2) Noncommunity systems (TNC and NTNC). Unless directed otherwise in writing by the department, noncommunity water systems must provide notice by:

1. Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

2. Any other method reasonably calculated to reach other persons served by the system, if they would not normally be reached by the posted, mailed, or delivered notice. Such persons may include those who may not see a posted notice because the notice is not in a location they routinely visit. Other methods may include:

- Publication in a local newspaper or newsletter distributed to employees;

- Use of electronic mail (email) to notify employees or students; or
- Delivery of multiple copies in central locations, such as community centers.

42.1(5) *Content of the public notice.*

a. Required public notice elements. Each public notice must include the following elements:

- (1) A description of the violation or situation, including the contaminant(s) of concern and, as applicable, the contaminant level(s);
- (2) When the violation or situation occurred;
- (3) Any potential adverse health effects from the violation or situation, including the standard language under subparagraph 42.1(5)“c”(1) or (2), whichever is applicable;
- (4) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water;
- (5) Whether alternative water supplies or bottled water should be used, or require a boil-water order;
- (6) What actions consumers should take, including when they should seek medical help, if known;
- (7) What the system is doing to correct the violation or situation;
- (8) When the water system expects to return to compliance or resolve the situation;
- (9) The name, business address, and telephone number of the water system owner, operator, or designee of the public water system as a source of additional information concerning the notice; and
- (10) A statement to encourage the notice recipient to distribute the public notice to other persons served, using the standard language under subparagraph 42.1(5)“c”(3), where applicable.

b. Appearance and presentation of the public notice.

- (1) Each public notice must:
 1. Be displayed in a conspicuous way when printed or posted;
 2. Not contain overly technical language or very small print;
 3. Not be formatted in a way that defeats the purpose of the notice; and
 4. Not contain language that nullifies the purpose of the notice.
- (2) Each public notice must comply with multilingual requirements, as follows:
 1. For public water systems serving a large proportion of non-English speaking consumers, as determined by the department, the public notice must contain information in the appropriate language(s) about the importance of the notice. Alternately, the public notice must contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance in the appropriate language.
 2. In cases where the department has not determined what constitutes a large proportion of non-English speaking consumers, the public water system must include in the public notice the same information as in 42.1(5)“b”(2)“1,” where appropriate, to reach a large proportion of non-English speaking persons served by the water system.

c. Standard language requirements. Public water systems are required to include the following standard language in their public notice:

(1) Standard language about health effects for MCL violations, MRDL violations, or treatment technique violations. Public water systems must include in each public notice the language about health effects specified in Appendix A for the specific contaminant, disinfectant residual, or treatment technique that incurred the violation.

(2) Standard language for monitoring and testing procedure violations. Public water systems must include the following language in their notice, including the bracketed language necessary to complete the notice, for all monitoring and testing procedure violations:

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we [use either the phrase “did not monitor or test” or “did not complete all monitoring or testing,” whichever is more applicable] for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time.

(3) Standard language to encourage the distribution of the public notice to all persons served. Public water systems must include in their notice the following language, where applicable:

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly, such as people in apartments, nursing homes, schools, and businesses. You can do this by posting this notice in a public place or distributing copies by hand or mail.

42.1(6) *Notice to new billing units or new customers.*

a. Community water systems. Community water systems must give a copy of the most recent public notice for any continuing violation or other ongoing situations requiring a public notice to all new billing units or new customers prior to or at the time service begins.

b. Noncommunity water systems. Noncommunity water systems must continuously post the public notice in conspicuous locations in order to inform new consumers of any continuing violation or other situation requiring a public notice for as long as the violation or other situation persists.

42.1(7) *Special notices.*

a. Availability of unregulated contaminant monitoring results.

(1) Applicability. The owner or operator of a community water system or nontransient noncommunity water system required to monitor under the federal unregulated contaminant monitoring rule must notify persons served by the system of the availability of the results of such sampling no later than 12 months after the monitoring results are known.

(2) Form and manner of notice. The form and manner of the public notice must follow the requirements for a Tier 3 public notice prescribed in paragraph 42.1(4)“c.” The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

b. Fluoride level between 2.0 and 4.0 mg/L at community or nontransient noncommunity water systems.

(1) Applicability. Community and nontransient noncommunity water systems that exceed the fluoride level of 2.0 mg/L as determined by the last single sample taken in accordance with 567—paragraph 41.3(1)“c” but do not exceed the MCL of 4.0 mg/L, must provide the public notice in subparagraph 42.1(7)“b”(5) to persons served. If the nontransient noncommunity public water system is a school or child care facility that serves children under nine years of age, the public water system shall provide the public notice in writing to the legal guardians of each child within the time period specified by the department.

(2) Initial notice. Public notice must be provided as soon as practical but no later than three months from the day the water system learns of the exceedance. A copy of the notice must also be sent to all new billing units and new customers at the time service begins and to the Public Health Dental Director, Iowa Department of Public Health, Lucas State Office Building, Des Moines, Iowa 50319-0075.

(3) Repeat notice. The public water system must repeat the notice at least every three months for as long as the fluoride level exceeds 2.0 mg/L. If the public notice is posted, the notice must remain in place for as long as the fluoride level exceeds 2.0 mg/L, but in no case less than seven days (even if the exceedance is eliminated). The department may require the repeat notice to be conducted more frequently.

(4) Form and manner of notice. The form and manner of the public notice, including repeat notices, must follow the requirements for a Tier 3 public notice in paragraph 42.1(4)“c.”

(5) Mandatory language. The notice must contain the following language, including the bracketed language necessary to complete the notice:

This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth, called dental fluorosis. The drinking water provided by your public water system [PWS name] has a fluoride concentration of [analytical result] mg/L.

Dental fluorosis, in its moderate or severe forms, may result in a brown staining and pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4.0 mg/L of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4.0 mg/L of fluoride, but we are required to notify you when we discover that the fluoride levels in your drinking water exceed 2.0 mg/L because of this cosmetic dental problem.

For more information, please call [name of the person designated as the water system contact] of [name of public water system] at [telephone number]. Some home water treatment units are also available to remove fluoride from drinking water. In Iowa, home water treatment units are regulated under 641—Chapter 14, with the water treatment unit registration program administered by the Iowa department of public health's environmental health division. In addition, you may call the National Sanitation Foundation (NSF) International, at 1-877-867-3435.

c. Nitrate level between 10 and 20 mg/L for noncommunity water systems, where allowed by the department.

(1) Applicability. The owner or operator of a noncommunity water system granted permission by the department under 567—paragraph 41.3(1)“a” to exceed the nitrate MCL must provide notice to persons served according to the requirements for a Tier 1 notice under paragraphs 42.1(2)“a” and “b.”

(2) Form and manner of notice. Noncommunity water systems granted permission by the department to exceed the nitrate MCL under 567—paragraph 41.3(1)“a” must provide continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effects of exposure, according to the requirements for Tier 1 notice delivery under paragraph 42.1(2)“c” and the content requirements under subrule 42.1(5).

d. Repeated failure to conduct monitoring of the source water for Cryptosporidium.

(1) Applicability. The owner or operator of any public water system that is required to monitor source water under 567—43.11(455B) must notify persons served by the water system that monitoring has not been completed as specified no later than 30 days after the system has failed to collect samples in any three months of monitoring as specified in 567—paragraph 43.11(3)“a.” The notice must be repeated as specified in 42.1(3).

(2) Form and manner of notice. The form and manner of the special notice must follow the Tier 2 public notice requirements in 42.1(3) and be presented as required in 42.1(5)“b.”

(3) Mandatory language. The special notice must contain the following language, including the language necessary to fill in the brackets.

“We are required to monitor the source of your drinking water for *Cryptosporidium*. Results of the monitoring are to be used to determine whether water treatment at the [treatment plant name] is sufficient to adequately remove *Cryptosporidium* from your drinking water. We are required to complete this monitoring and make this determination by [required bin determination date]. We [“did not monitor or test” or “did not complete all monitoring or testing”] on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate *Cryptosporidium* removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of [date]. For more information, please call [name of water system contact] of [name of water system] at [telephone number].”

(4) Each special notice must also include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

e. Failure to determine bin classification or mean Cryptosporidium level.

(1) Applicability. The owner or operator of a public water system that is required to determine a bin classification under 567—subrule 43.11(5) must notify persons served by the water system that the determination has not been made as required no later than 30 days after the system has failed to report the determination as specified in 567—paragraph 43.11(5)“c.” The notice must be repeated as specified in 42.1(3). The notice is not required if the system is in compliance with a department-approved schedule to address the violation.

(2) Form and manner of notice. The form and manner of the special notice must follow the Tier 2 public notice requirements in 42.1(3) and be presented as required in 42.1(5)“b.”

(3) Mandatory language. The special notice must contain the following language, including the language necessary to fill in the brackets.

“We are required to monitor the source of your drinking water for *Cryptosporidium* in order to determine by [date] whether water treatment at the [treatment plant name] is sufficient to adequately remove *Cryptosporidium* from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of [date]. For more information, please call [name of water system contact] of [name of water system] at [telephone number].”

(4) Each special notice must also include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

42.1(8) *Notice by department on behalf of the public water system.* The department may give the public notice on behalf of the owner or operator of the public water system if the department complies with the public notification requirements of this rule. However, the owner or operator of the public water system remains responsible for ensuring the public notification requirements of this rule are met.

42.1(9) *Public notice requirements in the operation permit compliance schedule.* When the department determines that a public water supply system cannot promptly comply with one or more maximum contaminant levels pursuant to 567—Chapter 41, and that there is no immediate, unreasonable risk to the health of persons served by the system, an operation permit will be drafted that may include interim contaminant levels or a compliance schedule. The permit applicant may be required by the department to present the reasons the system cannot come into immediate compliance. Prior to issuance of a final permit, notice and opportunity for public participation must be given in accordance with this subrule. The notice shall be circulated in a manner designed to inform interested and potentially interested persons of any proposed interim contaminant level or compliance schedule.

a. Preparation of notice. The public notice shall be prepared by the department and circulated by the applicant within its geographical area through publication in a local newspaper with general circulation or through mail or direct delivery to the system’s customers. The public notice shall be mailed by the department to any person upon request.

b. Public comment period. The department shall provide a period of at least 30 days following the date of the public notice during which time interested persons may submit their written views on the tentative determinations with respect to the operation permit. All written comments submitted during the 30-day comment period shall be retained by the department and considered in the formulation of the department’s final determination with respect to the operation permit. The department may extend the comment period.

c. Content of notice. The content of the public notice of a proposed operation permit shall include at least the following:

- (1) The name, address, and telephone number of the department.
- (2) The name and address of the applicant.
- (3) A statement of the department’s tentative determination to issue the operation permit.
- (4) A brief description of each applicant’s water supply operations which necessitate the proposed permit conditions.
- (5) A brief description of the procedures for the formulation of final determinations, including the 30-day comment period required by 42.1(9) “b.”
- (6) The right to request a public hearing pursuant to 42.1(9) “d” and any other means by which interested persons may influence or comment upon those determinations.
- (7) The address and telephone number of places at which interested persons may obtain further information, request a copy of the proposed operation permit prepared pursuant to 42.1(9), and inspect and copy the application forms and related documents.

d. Public hearings on proposed operation permits. The applicant or any interested agency, person or group of persons may request or petition for a public hearing with respect to the proposed action. Any such request shall clearly state issues and topics to be addressed at the hearing. Any such request or petition for public hearing must be filed with the department within the 30-day period prescribed in 42.1(9) “b” and shall indicate the interest of the party filing such request and the reasons why a hearing is warranted. The

department shall hold an informal and noncontested case hearing if there is a significant public interest (including the filing of requests or petitions for such hearing) in holding such a hearing. Frivolous or insubstantial hearing requests may be denied by the department. Instances of doubt should be resolved in favor of holding the hearing. Any hearing held pursuant to this subrule shall be held in the geographical area of the system, or other appropriate area at the discretion of the department. The department may, as appropriate, consider related groups of permit applications at the hearing.

e. Public notice of public hearings.

(1) Public notice of any hearing held pursuant to 42.1(9) shall be circulated at least as widely as the notice under 42.1(9)“a” at least 30 days in advance of the hearing.

(2) The contents of the public notice of any hearing held pursuant to 42.1(9) shall include at least the following:

1. The name, address, and telephone number of the department;
2. The name and address of each applicant whose application will be considered at the hearing;
3. A brief reference to the public notice previously issued, including identification number and date of issuance;
4. Information regarding the time and location for the hearing;
5. The purpose of the hearing;
6. A concise statement of the issues raised by the person requesting the hearing;
7. The address and telephone number of the premises where interested persons may obtain further information, request a copy of the draft operation permit or modification prepared pursuant to 42.1(9), and inspect and copy the application forms and related documents; and
8. A brief description of the nature of the hearing, including the rules and procedures to be followed.

f. Decision by the department. The department shall issue or deny the operation permit within 30 days after the termination of the public hearing held pursuant to 42.1(9), or, if no public hearing is held, within 30 days after the termination of the period for requesting a hearing.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—42.2(455B) Lead consumer notice and public education for lead action level exceedance. All CWS and NTNC systems must comply with the lead consumer notice in accordance with 42.2(1). A CWS or NTNC system that exceeds the lead action level based on tap water samples collected in accordance with 567—paragraph 41.4(1)“c” must comply with the public education requirements in accordance with 42.2(2).

42.2(1) Lead consumer notice. All CWS and NTNC systems must provide a consumer notice of lead tap water monitoring results to persons served at the sites (taps) that are tested as listed in 567—42.2(455B). Any system exceeding the lead action level shall also implement the public education requirements of 42.2(2).

a. Reporting requirement. All CWS and NTNC systems must provide a notice of the individual tap results from lead tap water monitoring carried out under the requirements of 567—paragraph 41.4(1)“c” to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested).

b. Timing of notification. A water system must provide the consumer notice as soon as practical, but no later than 30 days after the system learns of the tap monitoring results.

c. Content of notice. The consumer notice must include the following:

- (1) Results of the lead tap water monitoring for the tap that was tested,
- (2) An explanation of the health effects of lead,
- (3) A list of steps consumers can take to reduce exposure to lead in drinking water,
- (4) Contact information for the water utility, and
- (5) The lead maximum contaminant level goal of 0 mg/L and the 90th percentile lead action level of 0.015 mg/L and the definitions for these two terms from rule 567—40.2(455B).

d. Delivery of notice. The consumer notice must be provided to persons served at the tap that was tested, either by mail or by another method approved by the department. For example, upon approval by the department, an NTNC system could post the results on a bulletin board in the facility to allow users to

review the information. The system must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.

e. Inclusion of copper results. The system may also include results of copper testing in the notice along with the 90th percentile copper action level of 1.3 mg/L, copper MCLG of 1.3 mg/L, and health effects language.

42.2(2) *Lead public education for lead action level exceedance.* A water system that exceeds the lead action level based on tap water samples collected in accordance with 567—paragraph 41.4(1)“c” shall deliver the public education materials contained in 42.2(2)“a” in accordance with 42.2(2)“b.” Water systems that exceed the lead action level must sample the tap water of any customer who requests it in accordance with 42.2(2)“c.”

a. Content of written public education materials. CWS and NTNC systems must include the following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed in this paragraph. In addition, language in 42.2(2)“a”(1), (2), and (6) must be included in the materials exactly as written, except for the text in brackets in these paragraphs for which the water system must substitute system-specific information. Any additional information presented by a water system must be consistent with the information in 42.2(2)“a” and be in plain language that can be understood by the general public. Water systems must submit all written public education materials to the department prior to delivery. The department may require the system to obtain approval of the content of written public education materials prior to delivery.

(1) The following information must be included exactly as written. “IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [Insert name of water system] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.”

(2) The following information must be included exactly as written. “Health effects of lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother’s bones, which may affect brain development.”

(3) Sources of lead. The printed materials must:

1. Explain what lead is.
2. Explain possible sources of lead in drinking water and how lead enters drinking water and include information on home/building plumbing materials and service lines that may contain lead.

3. Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

(4) Discuss the steps the consumers can take to reduce their exposure to lead in drinking water as follows:

1. Encourage running the water to flush out the lead.
2. Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.
3. Explain that boiling the water does not reduce lead levels.
4. Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water.

5. Suggest that parents have their child’s blood tested for lead.

(5) The printed materials must explain why there are elevated levels of lead in the system’s drinking water (if known) and what the water system is doing to reduce the lead levels in homes/buildings in this area.

(6) The following information must be included exactly as written. “For more information, call us at [insert your telephone number] or visit our website at [insert your website link here]. For more information

on reducing lead exposure around your home/building and the health effects of lead, visit EPA's website at www.epa.gov/lead or contact your health care provider."

(7) Community water systems must also include the following elements:

1. Tell consumers how to get their water tested.
2. Discuss lead in plumbing components and the difference between low lead and lead free.
- b. *Delivery of public education materials.*

(1) Outreach to non-English speaking consumers. For public water systems serving a large proportion of non-English speaking consumers, as determined by the department, the public education materials must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the public education materials or to request assistance in the appropriate language.

(2) Delivery of public education at CWS. A CWS that exceeds the lead action level on the basis of tap water samples collected in accordance with 567—paragraph 41.4(1)"c" and that is not already conducting public education tasks under 42.2(2) must conduct the public education tasks within 60 days of the date of notification of the action level exceedance:

1. Deliver printed materials meeting the content requirements of 42.2(2)"a" to all bill-paying customers.

2. Contact customers who are most at risk by delivering education materials that meet the content requirements of 42.2(2)"a" to local public health agencies even if they are not located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or CWS's users. The water system must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community-based organizations serving target populations, which may include organizations outside the service area of the water system. If such lists are provided, systems must deliver education materials that meet the content requirement of 42.2(2)"a" to all organizations on the provided lists.

3. Contact customers who are most at risk by delivering materials that meet the content requirements of 42.2(2)"a" to the following organizations that are located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community public water supply system's users:

- Public and private schools or school boards;
- Women, Infants, and Children (WIC) and Head Start programs;
- Public and private hospitals and medical clinics;
- Pediatricians;
- Family planning clinics; and
- Local welfare agencies.

4. Make a good-faith effort to locate the following organizations within the service area and to deliver to them materials that meet the content requirements of 42.2(2)"a," along with an informational notice that encourages distribution to all potentially affected customers or users. The good-faith effort to contact at-risk customers may include requesting a specific contact list of these organizations from the local public health agencies, even if the agencies are not located within the water system's service area:

- Licensed child care centers;
- Public and private preschools;
- Obstetricians, gynecologists, and midwives.

5. No less often than quarterly, provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the following statement exactly as written except for the text in brackets for which the water system must substitute system-specific information: "[insert name of water system] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information, please call [insert telephone number of water system] or visit [insert your website link here]."

The message or delivery mechanisms can be modified in consultation with the department; specifically, the department may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.

6. Post material meeting the content requirements of 42.2(2) "a" on the water system's website if the system serves a population greater than 100,000.

7. Submit a press release to newspaper, television, and radio stations.

8. In addition to including those items previously listed, systems must implement at least three activities from one or more of the following categories. The educational content and selection of these activities must be determined in consultation with the department.

- Public service announcement;
- Paid advertisement;
- Public area information displays;
- Emails to customers;
- Public meetings;
- Household deliveries;
- Targeted individual customer contact;
- Direct material distribution to all multifamily homes and institutions; and
- Other methods approved by the department.

For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the department has established an alternate monitoring period, the last day of that period.

(3) Continuing public education at a CWS. As long as a CWS exceeds the action level, it must repeat the activities pursuant to 42.2(2) "b"(2) as follows:

1. A CWS shall repeat the tasks contained in 42.2(2) "b"(2) "1," "2," and "8" every 12 months.
2. A CWS shall repeat the tasks contained in 42.2(2) "b"(2) "5" with each billing cycle.
3. A CWS serving a population greater than 100,000 shall post and retain material on a publicly accessible website pursuant to 42.2(2) "b"(2) "6."
4. A CWS shall repeat the task in 42.2(2) "b"(2) "7" twice every 12 months on a schedule agreed upon with the department. The department can allow activities in 42.2(2) "b"(2) to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the department in advance of the 60-day deadline, and the system must already have initiated public education activities prior to the end of the 60-day deadline.

(4) Delivery of public education at an NTNC system. Within 60 days of the date of notification of the action level exceedance, an NTNC system shall deliver the public education materials specified as follows:

1. Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and
2. Distribute informational pamphlets or brochures on lead in drinking water to each person served by the nontransient noncommunity water system. The department may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as at least the same coverage is achieved. If the system serves children 18 years of age and under, such as a school or child care facility, the public education notice must be provided to the parents or legal guardians of the children.

For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs or, if the department has established an alternate monitoring period, the last day of that period.

(5) Continuing public education at an NTNC system. An NTNC system shall repeat the tasks contained in 42.2(2) "b"(4) at least once during each calendar year in which the system exceeds the lead action level. The department can allow activities in 42.2(2) "b"(4) to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the department in advance of the 60-day deadline, and the system must already have initiated public education activities prior to the end of the 60-day deadline.

(6) Discontinuation of public education activities. A CWS or NTNC system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month

monitoring period conducted pursuant to 567—paragraph 41.4(1)“c.” Such system shall recommence public education in accordance with 42.2(2) if the system subsequently exceeds the lead action level during any monitoring period.

(7) Special population CWS allowance. A CWS that meets the following criteria may apply to the department in writing for reduced public education and notification requirements:

1. The CWS is a facility, such as a prison or hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point-of-use treatment devices; and
2. The CWS provides water as part of the cost of services provided and does not separately charge for water consumption.

If the department approves the request in writing, the CWS is not required to include the language in 42.2(2)“a”(7) and must deliver the public education in accordance with 42.2(2)“b”(4) and (5), in lieu of 42.2(2)“b”(2) and (3).

(8) CWS serving 3,300 or fewer people. A CWS serving 3,300 or fewer people may limit certain aspects of its public education programs as follows:

1. The system must implement at least one of the activities listed in 42.2(2)“b”(2)“8.”
2. The system may limit the distribution of the public education materials in 42.2(2)“b”(2)“2” and “3” to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.
3. The department may waive the requirements of 42.2(2)“b”(2)“7” for the system provided the system distributes notices to every household served by the system.

c. Supplemental monitoring and notification of results. A water system that fails to meet the lead action level on the basis of tap samples collected in accordance with 567—paragraph 41.4(1)“c” shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system itself required to collect and analyze the sample.

[ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—42.3(455B) Consumer confidence reports.

42.3(1) *Applicability and purpose.* This rule applies to all community public water supply systems. The purpose of this rule is to establish the minimum requirements for the content of annual reports that community water systems must deliver to their customers. These reports must contain information on the quality of the water delivered by the systems and characterize the risks (if any) from exposure to contaminants in the drinking water in an accurate and understandable manner. The department may assign public notification requirements and assess administrative penalties to any community public water supply system which fails to fulfill the requirements of this rule.

42.3(2) *Reporting frequency.*

a. Existing community water systems. Existing community water systems must deliver the first report by October 19, 1999; the second report by July 1, 2000; and subsequent reports annually by July 1 thereafter.

b. New community water systems. New community water systems must deliver their first report by July 1 of the year after their first full calendar year in operation, and annually thereafter.

c. A CWS which sells water to another CWS. A community water system that sells water to another community water system must deliver the applicable information required in subrule 42.3(3) to the buyer (or consecutive) system:

- (1) No later than April 19, 1999, for the 1998 report; by April 1, 2000, for the 1999 report; and annually by April 1 thereafter, or
- (2) On a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

When a consecutive system sells water to another community water system, the seller must provide all applicable information in 42.3(3) to the CWS buying the water from them.

42.3(3) *Content of the reports.* Each annual consumer confidence report must contain the following information, at a minimum:

a. Source water identification. The report must identify the source(s) of water delivered by the community public water supply system, including the following:

(1) Type of water (e.g., surface water, groundwater, groundwater purchased from another public water supply).

(2) Commonly used name of the aquifer, reservoir, or river (if any) and location of the body (or bodies) of water.

(3) If a source water assessment has been completed, notify consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the department, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the department or its designee, or written by the owner or operator.

b. Definitions. Each report using any of the following terms must include the applicable definitions:

(1) "Maximum Contaminant Level Goal (MCLG)" means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

(2) "Maximum Contaminant Level (MCL)" means the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

(3) "Maximum Residual Disinfectant Level Goal (MRDLG)" means the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

(4) "Maximum Residual Disinfectant Level (MRDL)" means the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

(5) A report which contains data on a contaminant for which EPA has set a treatment technique or an action level must include one or both of the following definitions, as applicable:

1. "Treatment technique (TT)" means a required process intended to reduce the level of a contaminant in drinking water.

2. "Action level (AL)" means the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

(6) A report that contains information regarding a Level 1 or Level 2 assessment required under 567—subrule 41.2(1) must include the applicable definitions:

1. "Level 1 Assessment" is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

2. "Level 2 Assessment" is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred or why total coliform bacteria have been found in our water system on multiple occasions.

c. Information on detected contaminants. This paragraph specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring (except *Cryptosporidium*, which is listed in 42.3(3)"c"(2)) as follows: contaminants subject to an MCL, action level, MRDL, or treatment technique (regulated contaminants); contaminants for which monitoring is required by CFR Title 40, Part 141.40 (unregulated contaminants), 567—subrule 41.11(1) (sodium monitoring), and 567—41.15(455B) (other contaminants); and disinfection byproducts or microbial contaminants for which monitoring is required by 567—Chapters 40 to 43, except as provided under 42.3(3)"e"(1), and which are detected in the finished water. The ammonia monitoring conducted pursuant to 567—subrule 41.11(2) is not subject to this paragraph. For the purposes of this subrule, "detected" means at or above the levels prescribed by the following: inorganic contaminants in 567—subparagraph 41.3(1)"e"(1); volatile organic contaminants in 567—paragraph 41.5(1)"b"; synthetic organic contaminants in 567—paragraph 41.5(1)"b"; radionuclide contaminants in 567—paragraph 41.8(1)"c"; disinfection byproducts in 567—paragraph 83.6(7)"a"(6)"3"; and other contaminants with health advisory levels, as assigned by the department.

(1) The data relating to these contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results which a community water system chooses to include in its report must be displayed separately.

1. The data must be derived from data collected to comply with departmental monitoring and analytical requirements during calendar year 1998 for the first report and subsequent calendar years thereafter. Where a system is allowed to monitor for contaminants less often than once a year, the table(s) must include the results and date of the most recent sampling and a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. No data older than five years need be included.

2. For detected regulated contaminants, which are listed in Appendix C, the table(s) must contain:

- The MCL for that contaminant, expressed as a number equal to or greater than 1.0 (as provided in Appendix C);

- The MCLG for that contaminant, expressed in the same units as the MCL;

- If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report must include the definition for treatment technique or action level, as appropriate, specified in 42.3(3) "b"(4).

3. For contaminants subject to an MCL, except turbidity and total coliforms, the table must contain the highest contaminant level used to determine compliance with a primary drinking water standard and the range of detected levels, as follows:

- When compliance with the MCL is determined annually or less frequently: the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL (such as inorganic compounds).

- When compliance with the MCL is determined by calculating a running annual average of all samples taken at a sampling point: the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL (such as organic compounds and radionuclides). For TTHM and HAA5 MCLs, systems must include the highest locational running annual average for TTHM and HAA5 and the range of individual sample results for all monitoring locations expressed in the same units as the MCL. If more than one location exceeds the TTHM or HAA5 MCL, the system must include the locational running annual averages for all locations that exceed the MCL.

- When compliance with an MCL is determined on a systemwide basis by calculating a running annual average of all samples at all sampling points: the average and range of detection expressed in the same units as the MCL.

NOTE: When rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in Appendix C.

4. For turbidity: When it is reported pursuant to 567—43.5(455B), 567—43.9(455B), or 567—43.10(455B): the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in 567—43.5(455B), 567—43.9(455B), or 567—43.10(455B) for the filtration technology being used. The report should include an explanation of the reasons for measuring turbidity.

5. For lead and copper: the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level.

6. Rescinded IAB 4/11/18, effective 5/16/18.

7. For *E. coli* analytical results under 567—subrule 41.2(1), the total number of positive samples.

8. The likely source(s) of detected contaminants to the best of the owner's or operator's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and should be used when available to the owner or operator. If the owner or operator lacks specific information on the likely contaminant source, the report must include one or more of the typical sources for that contaminant listed in Appendix C, which are most applicable to the system.

9. If a community water system distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table should contain a separate column for each service area and the report should identify each separate distribution system. Alternatively, systems may produce separate reports tailored to include data for each service area.

10. The table(s) must clearly identify any data indicating MCL, MRDL, or TT violations, and the report must contain a clear and readily understandable explanation of the violation including:

- The length of the violation,
- The potential adverse health effects,

- Actions taken by the system to address the violation, and
 - The relevant language from Appendix C to describe the potential health effects.
11. For detected unregulated contaminants for which monitoring is required, except *Cryptosporidium*, the table(s) must contain the average and range at which the contaminant was detected. The report may include a brief explanation of the reasons for monitoring for unregulated contaminants.
 12. Community public water supply systems may list the most recent results of the special sodium monitoring requirement according to 567—subrule 41.11(1) in the annual report, instead of providing a separate public notification.
 13. If a contaminant which does not have an MCL, MRDL, TT, or AL is detected in the water, the PWS must contact the department for the specific health effects language, health advisory level, and contamination sources.
 - (2) If monitoring indicates that *Cryptosporidium* may be present in the source water or the finished water, or that radon may be present in the finished water, the report must include:
 1. A summary of the *Cryptosporidium* monitoring results;
 2. The radon monitoring results; and
 3. An explanation of the significance of the results.
 - (3) If the system has performed additional monitoring which indicates the presence of other contaminants in the finished water, the system must report any results which may indicate a health concern. To determine if results may indicate a health concern, the community public water supply can determine if there is a current or proposed maximum contaminant level, maximum residual disinfectant level, treatment technique, action level, or health advisory by contacting the department or by calling the national Safe Drinking Water Hotline ((800)426-4791). The department considers the detection of a contaminant above a proposed MCL or health advisory to indicate possible health concerns. For such contaminants, the report should include:
 1. The results of the monitoring; and
 2. An explanation of the significance of the results noting the existence of a health advisory or a proposed regulation.
 - (4) If the system was required to comply with the federal Information Collection Rule pursuant to the Code of Federal Regulations Title 40 Part 141, it must include the results of monitoring in compliance with Sections 141.142 and 141.143. These results need only be included for five years from the date of the sample or until any of the detected contaminants become regulated and subject to routine monitoring requirements, whichever comes first.
 - d. *Compliance with 567—Chapters 40, 41, 42, and 43.* In addition to the requirements of paragraph 42.3(3)“c”(1)“9,” the report must note any violation that occurred during the year covered by the report of a requirement listed below and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the system has taken to correct the violation. Note any violation of the following requirements:
 - (1) Monitoring and reporting of compliance data pursuant to 567—Chapters 41 and 43, which includes any contaminant with a maximum contaminant level, treatment technique, action level, or health advisory;
 - (2) Treatment techniques:
 1. Filtration and disinfection prescribed by 567—43.5(455B). For systems which have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes which constitutes a violation, the report must include the following language as part of the explanation of potential adverse health effects: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
 2. Lead and copper control requirements. For systems which fail to take one or more actions prescribed by 567—Chapters 41 to 43 pertaining to lead and copper, the report must include the applicable language of Appendix C to this chapter for lead or copper, or both.

3. Acrylamide and epichlorohydrin control technologies prescribed by 567—subparagraph 41.5(1) “b”(3). For systems which violate the requirements of 567—subparagraph 41.5(1) “b”(3), the report must include the relevant language from Appendix C to this chapter.

(3) Record keeping of compliance data pursuant to 567—Chapters 40 to 43;

(4) Special monitoring requirements; and

(5) Violation of the terms of operation permit compliance schedule, or an administrative order or judicial order.

e. Operation permit or administrative order with a schedule which extends the time period in which compliance must be achieved. If a system has been issued a compliance schedule with an extension for compliance, the report must contain:

(1) An explanation of the reasons for the extension;

(2) The date on which the extension was issued;

(3) A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms of the compliance schedule; and

(4) A notice of any opportunity for public input in the review or renewal of the compliance schedule.

f. Mandatory report language for explanation of contaminant occurrence. The reports must contain a brief explanation regarding contaminants which may reasonably be expected to be found in drinking water including bottled water. This explanation may include the language of the following subparagraphs (1) to (3). Subparagraph (4) is provided as a minimal alternative to subparagraphs (1) to (3). Systems may also develop their own comparable language. The report also must include the language of 42.3(3) “g.”

(1) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

(2) Contaminants that may be present in source water include:

1. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

2. Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

3. Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

4. Organic chemical contaminants, including synthetic and volatile organics, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.

5. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

(3) In order to ensure that tap water is safe to drink, the department prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The United States Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

(4) Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the national Safe Drinking Water Hotline ((800)426-4791).

g. Required additional health information.

(1) All systems. All reports must prominently display the following language: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The EPA/CDC guidelines on appropriate means to lessen the risk of infection by

Cryptosporidium and other microbial contaminants are available from the national Safe Drinking Water Hotline ((800)426-4791).

(2) Arsenic levels greater than 0.005 mg/L.

1. A system which detects arsenic at levels above 0.005 mg/L and less than or equal to 0.010 mg/L:

- Must include in its report a short information statement about arsenic, using language such as: While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

- May write its own educational statement, but only in consultation with the department.

2. A community water system that detects arsenic above 0.010 mg/L and less than or equal to 0.05 mg/L must include the arsenic health effects language prescribed by Appendix C to this chapter.

(3) Nitrate levels greater than half the MCL (5.0 mg/L). A system which detects nitrate at levels above 5.0 mg/L, but below the MCL:

1. Must include a short informational statement about the impacts of nitrate on children using language such as: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

2. May write its own education statement, but only in consultation with the department.

(4) Nitrite levels greater than half the MCL (0.50 mg/L). A system which detects nitrite at levels above 0.50 mg/L, but below the MCL:

1. Must include a short informational statement about the impacts of nitrite on children using language such as: Nitrite in drinking water at levels above 1 ppm is a health risk for infants of less than six months of age. High nitrite levels in drinking water can cause blue baby syndrome. If you are caring for an infant you should ask advice from your health care provider.

2. May write its own education statement, but only in consultation with the department.

(5) Lead information statement for all CWS. Every report must include the following lead-specific information:

1. A short informational statement about lead in drinking water and the effects it has on children. The statement must include the following information:

"If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from material and components associated with service lines and home plumbing. [insert name of system] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800)426-4791 or at www.epa.gov/safewater/lead."

2. A system may write its own educational statement, but only in consultation with the department.

(6) Total trihalomethane (TTHM) levels above 0.080 mg/L but less than the MCL. Community water systems that detect TTHM above 0.080 mg/L, but below the MCL in 567—subrule 41.5(1), as an annual average, monitored and calculated under the provisions of 567—paragraph 41.5(1) "e," must include the health effects language for total trihalomethanes listed in Appendix C.

h. Additional mandatory report requirements.

(1) The report must include the telephone number of the owner, operator, or designee of the community water system as a source of additional information concerning the report.

(2) In communities with a large proportion of non-English speaking residents, as determined by the department, the report must contain information in the appropriate language(s) regarding the importance of

the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

(3) The report must include information (e.g., time and place of regularly scheduled board meetings) about opportunities for public participation in decisions that may affect the quality of the water.

(4) The systems may include such additional information as they deem necessary for the public education consistent with, and not detracting from, the purpose of the report.

(5) Systems required to comply with 567—41.7(455B), the groundwater rule, must include the following when applicable:

1. Any groundwater system that receives notice from the department of a significant deficiency must inform its customers of any significant deficiency that is uncorrected at the time of the next report. The system must continue to inform the public annually until the department determines that particular significant deficiency is corrected. Each report must include the following elements:

- The nature of the particular significant deficiency and the date the significant deficiency was identified by the department; and
- For each significant deficiency, the department-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed.

Only if directed by the department, a system with significant deficiencies that have been corrected before the next report is issued must inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction.

2. Any groundwater system that receives notice from the department or laboratory of a fecal indicator-positive groundwater source sample that is not invalidated by the department under 567—paragraph 41.7(3) “d” must inform its customers of any fecal indicator-positive groundwater source sample in the next report. The system must continue to inform the public annually until the department determines that the fecal contamination in the groundwater source is addressed under 567—paragraph 41.7(4) “a.” Each report must include the following elements:

- The source of the fecal contamination (if the source is known) and the dates of the fecal indicator-positive groundwater source samples;
- Whether the fecal contamination in the groundwater source has been addressed under 567—paragraph 41.7(4) “a” and the date of such action;
- For each fecal contamination in the groundwater source that has not been addressed under 567—paragraph 41.7(4) “a,” the department-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and
- If the system receives notice of a fecal indicator-positive groundwater source sample that is not invalidated by the department under 567—paragraph 41.7(3) “d,” the potential health effects, using the “Fecal coliform or *E. coli*” or “Fecal Indicators (enterococci or coliphage)” health effects language of Appendix C in Chapter 42.

(6) Pursuant to 567—subrule 41.2(1), any system required to comply with the Level 1 assessment requirement or a Level 2 assessment requirement that is not due to an *E. coli* MCL violation must include in the report the text in 42.3(3) “h”(6) “1” to “3” as appropriate, filling in the blanks accordingly and including the text found in the bulleted paragraphs of 42.3(3) “h”(6) “4” if appropriate.

1. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that the potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

2. During the past year, we were required to conduct [*insert number of required Level 1 assessments*] Level 1 assessment(s). [*insert number of completed Level 1 assessments*] Level 1 assessment(s) were completed. In addition, we were required to take [*insert number of required corrective actions*] corrective actions, and we completed [*insert number of completed corrective actions*] of these actions.

3. During the past year, [*insert number of required Level 2 assessments*] Level 2 assessments were required to be completed for our water system. [*insert number of completed Level 2 assessments*] Level 2

assessment(s) were completed. In addition, we were required to take [insert number of required corrective actions] corrective actions, and we completed [insert number of completed corrective actions] of these actions.

4. Any system that has failed to complete all the required assessments or correct all identified sanitary defects is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate:

- During the past year, we failed to conduct all of the required assessment(s).
- During the past year, we failed to correct all identified defects that were found during the assessment.

(7) Pursuant to 567—subrule 41.2(1), any system required to conduct a Level 2 assessment due to an *E. coli* MCL violation must include in the report the text in 42.3(3) “h”(7) “1” and “2” as appropriate, filling in the blanks accordingly and including the text found in the bulleted paragraphs of 42.3(3) “h”(7) “3” if appropriate.

1. *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

2. We were required to complete a Level 2 assessment because we found *E. coli* bacteria in our water system. In addition, we were required to take [insert number of required corrective actions] corrective actions, and we completed [insert number of completed corrective actions] of these actions.

3. Any system that has failed to complete the required assessment or correct all identified sanitary defects is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate:

- We failed to conduct the required assessment.
- We failed to correct all sanitary defects that were identified during the assessment that we conducted.

(8) Pursuant to 567—subrule 41.2(1), if a system detects *E. coli* and violated the *E. coli* MCL, in addition to completing the table as required in 42.3(3) “c,” the system must include one or more of the following statements to describe any noncompliance, as applicable:

1. We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample.
2. We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample.
3. We failed to take all required repeat samples following an *E. coli*-positive routine sample.
4. We failed to test for *E. coli* when any repeat sample tested positive for total coliform.

(9) Pursuant to 567—subrule 41.2(1), if a system detects *E. coli* and has not violated the *E. coli* MCL, in addition to completing the table as required in 42.3(3) “c,” the system may include a statement that explains that although the system has detected *E. coli*, the system is not in violation of the *E. coli* MCL.

42.3(4) Report delivery.

a. *Required report recipients.* Each community water system must mail or otherwise directly deliver one copy of the report to each customer.

(1) The system must make a good-faith effort to reach consumers who do not get water bills, using means recommended by the department. An adequate good-faith effort will be tailored to the consumers who are served by the system but are not bill-paying customers, such as renters or workers. A good-faith effort to reach consumers would include a mix of methods appropriate to the particular system such as:

1. Posting the reports on the Internet;
2. Mailing to postal patrons in metropolitan areas;
3. Advertising the availability of the report in the news media;
4. Publication in a local newspaper;
5. Posting in public places such as cafeterias or lunchrooms of public buildings;

6. Delivery of multiple copies for distribution by single-billed customers such as apartment buildings or large private employers;

7. Delivery to community organizations.

(2) No later than the date the system is required to distribute the report to its customers, each community water system must mail a copy of the report to the department, followed within three months by a certification that the report has been distributed to customers, and that the information is correct and consistent with the compliance monitoring data previously submitted to the department.

(3) No later than the date the system is required to distribute the report to its customers, each community water system must deliver the report to any other agency or clearinghouse identified by the department, such as the Iowa department of public health or county board of health.

b. Availability of report. Each community water system must make its report available to the public upon request. Each community water system serving 100,000 or more persons must post its current year's report to a publicly accessible site on the Internet.

c. Waiver from mailing requirements for systems serving fewer than 10,000 persons. All community public water supply systems with fewer than 10,000 persons served will be granted the waiver, except for those systems which have the following: one or more exceedances of a maximum contaminant level, treatment technique, action level, or health advisory; an administrative order; a court order; significant noncompliance with monitoring or reporting requirements; or an extended compliance schedule contained in the operation permit. Even though a public water supply system has been granted a mailing waiver, subparagraphs 42.3(4) "a"(2) and (3) and paragraph 42.3(4) "b" still apply to all community public water supply systems. A mailing waiver is not allowed for the report covering the year during which one of the previously listed exceptions occurred. Systems which use the mailing waiver must:

(1) Publish the reports in one or more local newspapers serving the area in which the system is located;

(2) Inform the customers that the reports will not be mailed, either in the newspapers in which the reports are published or by other means approved by the department; and

(3) Make the reports available to the public upon request.

d. Waiver from mailing requirements for systems serving 500 or fewer in population. All community public water supply systems serving 500 or fewer persons will be granted the waiver, except for those systems which have the following: one or more exceedances of a maximum contaminant level, treatment technique, action level, or health advisory; an administrative order; a court order; significant noncompliance with monitoring or reporting requirements; or an extended compliance schedule contained in the operation permit. Systems serving 500 or fewer persons which use the waiver may forego the requirements of subparagraphs 42.3(4) "c"(1) and (2) if they provide notice at least once per year to their customers by mail, door-to-door delivery, or by posting that the report is available upon request, in conspicuous places within the area served by the system acceptable to the department. A mailing waiver is not allowed for the report covering the year during which one of the previously listed exceptions occurred. Even though a public water supply system has been granted a mailing waiver, subparagraphs 42.3(4) "a"(2) and (3) and paragraph 42.3(4) "b" still apply to all community public water supply systems.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—42.4(455B) Reporting.

42.4(1) Reporting requirements other than for lead and copper.

a. When required by the department, the supplier of water shall report to the department within ten days following a test, measurement or analysis required to be made by 567—Chapter 40, 41, 42, or 43 the results of that test, measurement or analysis in the form and manner prescribed by the department. This shall include reporting of all positive detects within the same specific analytical method.

b. Except where a different reporting period is specified in this rule or 567—Chapters 41 and 43, the supplier of water shall report to the department within 48 hours after any failure to comply with the monitoring requirements set forth in 567—Chapters 41 and 43. The supplier of water shall also notify the department within 48 hours of failure to comply with any primary drinking water regulations.

c. The public water supply system, within ten days of completion of each public notification required pursuant to 567—42.1(455B) for the initial public notice and any repeat notices, shall submit to the

department a certification that it has fully complied with the public notification rules. The public water system must include with this certification a representative copy of each type of notice distributed, published, posted, or made available to the persons served by the system or to the media.

d. Groundwater rule. Additional reporting requirements for the groundwater rule are listed in 567—paragraph 41.7(6) “a.”

e. Coliform rule. Additional reporting requirements for the coliform rule are listed in 567—paragraph 41.2(1) “n.”

42.4(2) *Lead and copper reporting requirements.* All water systems shall report all of the following information to the department in accordance with this subrule.

a. Reporting requirements for tap water monitoring for lead and copper and for water quality parameter monitoring.

(1) Except as provided in 42.4(2) “a”(1) “8,” a water system shall report the information specified below for all tap water samples specified in 567—paragraph 41.4(1) “c” and for all water quality parameter samples specified in 567—paragraph 41.4(1) “d” within the first ten days following the end of each applicable monitoring period specified in 567—41.4(455B) (i.e., every six months, annually, or every three years). For monitoring periods with a duration of less than six months, the end of the monitoring period is the last date samples can be collected during that period as specified in 567—paragraphs 41.4(1) “c” and 41.4(1) “d.”

1. The results of all tap samples for lead and copper including the location of each site and the criteria under which the site was selected for the system’s sampling pool;

2. Documentation for each tap water lead or copper sample for which the water system requests invalidation pursuant to 567—paragraph 41.4(1) “c”(6) “2”;

3. Rescinded IAB 1/7/04, effective 2/11/04;

4. The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period (calculated in accordance with 567—subparagraph 41.4(1) “b”(3));

5. With the exception of initial tap sampling conducted pursuant to 567—paragraph 41.4(1) “c”(4) “1,” the system shall designate any site which was not sampled during previous monitoring periods, and include an explanation of why sampling sites have changed;

6. The results of all tap samples for pH and, where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under 567—subparagraphs 41.4(1) “d”(2) through (5);

7. The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under 567—subparagraphs 41.4(1) “d”(2) and (5); and

8. A water system shall report the results of all water quality parameter samples collected under 567—subparagraphs 41.4(1) “d”(3) through (6) during each six-month monitoring period specified in 567—subparagraph 41.4(1) “d”(4) within the first ten days following the end of the monitoring period, unless the department has specified a more frequent reporting requirement.

(2) Certain systems that do not have enough taps that can provide first-draw samples that have met the six-hour stand time criteria, such as an NTNC that has 24-hour operation or a CWS that meets the criteria of 42.2(2) “b”(7), must either:

1. In the case where the department has not approved the non-first-draw sample sites, provide written documentation to the department identifying stand times and locations for enough non-first-draw samples to make up its sampling pool under 567—paragraph 41.4(1) “c”(2) “5” by July 1, 2003; or

2. If the department has already approved the non-first-draw sample sites selected by the system, identify each site that did not meet the six-hour minimum stand time and the length of stand time for that particular substitute sample collected pursuant to 567—paragraph 41.4(1) “c”(2) “5.” Certain systems include this information in writing with the lead and copper tap sample results required to be submitted pursuant to 567—paragraph 41.4(1) “d”(1) “1.”

(3) At a time specified by the department or, if no specific time is designated by the department, then as early as possible prior to the addition of a new source or any long-term change in water treatment, a water system that has optimized corrosion control under 567—subparagraph 43.7(1) “b”(3), a water system subject to reduced monitoring pursuant to 567—paragraph 41.4(1) “c”(4) “4,” or a water system subject to a

monitoring waiver pursuant to 567—subparagraph 41.4(1)“c”(7) shall send written documentation to the department describing the change or addition. The department must review and approve the addition of a new source or long-term change in treatment before it is implemented by the water system. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include the switching of secondary disinfectants, switching of coagulants (e.g., alum to ferric chloride), and switching of corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can include dose changes to existing chemicals if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily water quality changes. In those instances where prior department approval of the treatment change or new source is not required, water systems are encouraged to provide the notification to the department beforehand to minimize the risk that the treatment change or new source will adversely affect optimal corrosion control.

(4) Any small system applying for a monitoring waiver under 567—subparagraph 41.4(1)“c”(7), or subject to a waiver granted pursuant to 567—paragraph 41.4(1)“c”(7)“3,” shall provide the following information to the department in writing by the specified deadline:

1. By the start of the first applicable monitoring period in 567—subparagraph 41.4(1)“c”(4), any small water system applying for a monitoring waiver shall provide the documentation required to demonstrate that it meets the waiver criteria of 567—paragraphs 41.4(1)“c”(7)“1” and “2.”

2. No later than nine years after the monitoring previously conducted pursuant to 567—paragraph 41.4(1)“c”(7)“2” or 567—paragraph 41.4(1)“c”(7)“4,” first bulleted paragraph, each small system desiring to maintain its monitoring waiver shall provide the information required by 567—paragraph 41.4(1)“c”(7)“4,” first and second bulleted paragraphs.

3. No later than 60 days after the system becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate, each small system with a monitoring waiver shall provide written notification to the department, setting forth the circumstances resulting in the lead-containing or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials.

- (5) Each groundwater system that limits water quality parameter monitoring to a subset of entry points under 567—paragraph 41.4(1)“d”(3)“3” shall provide, by the commencement of such monitoring, written correspondence to the department that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

b. Source water monitoring reporting requirements.

- (1) A water system shall report the sampling results for all source water samples collected in accordance with 567—paragraph 41.4(1)“e” within the first ten days following the end of each source water monitoring period (i.e., annually, per compliance period or per compliance cycle) specified in 567—paragraph 41.4(1)“e.”

- (2) With the exception of the first round of source water sampling conducted pursuant to 567—subparagraph 41.4(1)“e”(2), the system shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

c. Corrosion control treatment reporting requirements. By the applicable dates under 567—subrule 43.7(1), systems shall report the following information:

- (1) For systems demonstrating that they have already optimized corrosion control, information required in 567—subparagraph 43.7(1)“b”(2) or (3).

- (2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under 567—paragraph 43.7(2)“a.”

- (3) For systems required to evaluate the effectiveness of corrosion control treatments under 567—paragraph 43.7(2)“c,” the information required by that paragraph.

- (4) For systems required to install optimal corrosion control designated by the department under 567—paragraph 43.7(2)“d,” a letter certifying that the system has completed installing that treatment.

d. Source water treatment reporting requirements. By the applicable dates in 567—subparagraph 43.7(3)“b”(1), systems shall provide the following information to the department:

(1) If required under 567—subparagraph 43.7(3) “b”(1), their recommendation regarding source water treatment;

(2) For systems required to install source water treatment under 567—subparagraph 43.7(3) “b”(1), a letter certifying that the system has completed installing the treatment designated by this department within 24 months after the department designated the treatment.

e. Lead service line replacement reporting requirements. Systems shall report the following information to demonstrate compliance with the requirements of 567—subrule 43.7(4):

(1) No later than 12 months after the end of a monitoring period in which a system exceeds the lead action level in sampling referred to in 567—paragraph 43.7(4) “a,” the system must submit to the department written documentation of the material evaluation pursuant to 567—subparagraph 41.4(1) “c”(1), identify the initial number of lead service lines in its distribution system at the time the system exceeds the lead action level, and provide the department with the system’s schedule for replacing annually at least 7 percent of the initial number of lead service lines in its distribution system.

(2) No later than 12 months after the end of a monitoring period in which a system exceeds the lead action level in sampling referred to in 567—paragraph 43.7(4) “a” and every 12 months thereafter, the system shall demonstrate in writing that the system has either:

1. Replaced in the previous 12 months at least 7 percent of the initial lead service lines (or a greater number of lines specified by the department under 567—paragraph 43.7(4) “e” in its distribution system), or

2. Conducted sampling which demonstrates that the lead concentration in all service line samples from individual line(s), taken pursuant to 567—paragraph 41.4(1) “c”(2) “3,” is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced and those lines which meet the criteria in 567—paragraph 43.7(4) “c” shall equal at least 7 percent of the initial number of lead lines identified under 42.4(2) “e”(1) or the percentage specified by the department under 567—paragraph 43.7(4) “e.” A lead service line meeting the criteria of 567—paragraph 43.7(4) “c” may only be used to comply with the 7 percent criteria for a specific year, and may not be used again to calculate compliance with the 7 percent criteria in future years.

(3) The annual letter submitted to the department under 42.4(2) “e”(2) shall contain the following information:

1. The number of lead service lines scheduled to be replaced during the previous year of the system’s replacement schedule;

2. The number and location of each lead service line replaced during the previous year of the system’s replacement schedule;

3. If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

(4) Any system which collects lead service line samples following partial lead service line replacement required by 567—subrule 43.7(4) shall report the results to the department within the first ten days of the month following the month in which the system receives the laboratory results, or as specified by the department. Systems shall also report any additional information as specified by the department, and in a time and manner prescribed by the department, to verify that all partial lead service line replacement activities have taken place.

f. Public education program reporting requirements.

(1) Any water system that is subject to the public education requirements in 42.2(2) shall, within ten days after the end of each period in which the system is required to perform public education in accordance with 42.2(2) “b,” send written documentation to the department that contains:

1. A demonstration that the system has delivered the public education materials that meet the content requirements in 42.2(2) “a” and the delivery requirements in 42.2(2) “b”; and

2. A list of all the newspapers, radio stations, television stations, facilities and organizations to which the system delivered public education materials during the period in which the system was required to perform public education tasks.

(2) Unless required by the department, a system that previously has submitted the information required by 42.4(2) “f”(1) “2” need not resubmit the same information, provided there have been no changes

in the distribution list and the system certifies that the public education materials were distributed to the same list previously submitted. The certification is due within ten days after the end of each period in which the system is required to perform public education.

(3) No later than three months following the end of the monitoring period, each system must mail a sample copy of the consumer notification of tap results to the department along with a certification that the notification has been distributed in a manner consistent with the requirements of 42.2(1).

g. Reporting of additional monitoring data. A system which collects sampling data in addition to that required by 567—Chapters 41 and 43 shall report the results to the department within the first ten days following the end of the applicable monitoring period under 567—paragraphs 41.4(1) “c,” “d,” and “e” during which the samples are collected.

42.4(3) Operation and maintenance for PWS.

a. Required records of operation.

(1) Applicability. Monthly records of operation shall be completed by all public water supplies, on forms provided by the department or on similar forms, unless a public water supply meets all of the following conditions:

1. Supplies an annual average of not more than 25,000 gpd or serves no more than an average of 250 individuals daily;

2. Is a community public water supply and does not provide any type of treatment, or is a noncommunity system (NTNC and TNC) which has only a cation-exchange softening or iron/manganese removal treatment unit, and meets the requirements of 42.4(3) “a”(2)“7”;

3. Does not utilize either a surface water or a groundwater under the direct influence of surface water either in whole or in part as a water source;

4. Does not use a treatment technique such as blending to achieve compliance with a maximum contaminant level, treatment technique, action level, or health advisory.

The reports shall be completed as described in 42.4(3) “a”(2) and maintained at the facility for inspection by the department for a period of five years. For CWS and NTNC PWSs, the monthly operation report must be signed by the certified operator in charge. For TNC PWSs, the monthly operation report, if required by the department, must be signed by the owner or the owner’s designee.

All public water supplies using a surface water or influenced groundwater source must also comply with the applicable record-keeping requirements in 567—43.5(455B), 567—43.9(455B), 567—43.10(455B), and 567—43.11(455B).

(2) Contents. Monthly operation reports shall be completed as follows:

1. Pumpage or flow. Noncommunity supplies shall measure and record the total water used each week. It is recommended that a daily measurement and recording be made. Community supplies shall measure and record daily water used. Reporting of pumpage or flow may be required in an operation permit where needed to verify MCL compliance.

2. Treatment effectiveness. Where treatment is practiced, the intended effect of the treatment shall be measured at locations and by methods which best indicate effectiveness of the treatment process. These measurements shall be made pursuant to Appendix B of this chapter. Daily monitoring is seven days a week unless otherwise specified by the department.

3. Treatment effectiveness for a primary standard. Where the raw water quality does not meet the requirements of 567—Chapters 41 and 43 and treatment is practiced for the purpose of complying with a maximum contaminant level, action level, health advisory, or treatment technique criteria, daily measurement of the primary standard constituent or an appropriate indicator constituent designated by the department shall be recorded. The department will require reporting of these results in the operation permit to verify MCL compliance.

4. Treatment effectiveness for a secondary standard. Where treatment is practiced for the purpose of achieving the recommended level of any constituent designated in the federal secondary standards, measurements shall be measured and recorded at a frequency specified in Appendix B. Daily monitoring is seven days a week unless otherwise specified by the department.

5. Chemical application. Chemicals such as fluoride, iodine, bromine and chlorine, which are potentially toxic in excessive concentration, shall be measured and recorded daily. Recording shall include

the amount of chemical applied each day. Where the supplier of water is attempting to maintain a residual of the chemical throughout the system, such as chlorine, the residual in the system shall be recorded daily. The quantity of all other chemicals applied shall be measured and recorded at least once each week.

6. Static water levels and pumping water levels must be measured and recorded once per month for all groundwater sources. More or less frequent measurements may be approved by the department where historical data justifies it.

7. Noncommunity systems (NTNC and TNC) are exempt from the self-monitoring requirements for cation-exchange softening and iron/manganese removal if the treatment unit:

- Is a commercially available “off-the-shelf” unit designed for home use;
- Is self-contained, requiring only a piping connection for installation;
- Operates throughout a range of 35 to 80 psi; and
- Has not been installed for the purpose of removing a contaminant which has a maximum contaminant level, treatment technique, action level, or health advisory.

b. Chemical quality and application. Any drinking water system chemical which is added to raw, partially treated, or finished water must be suitable for the intended use in a potable water system. Effective on October 1, 2000, the chemical must be certified by an American National Standards Institute (ANSI) accredited third party for conformance with American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 60, if such certification exists for the particular product, unless certified chemicals are not reasonably available for use, in accordance with guidelines provided by the department. If the chemical is not certified to meet the ANSI/NSF Standard 60 or no certification is available, the person seeking to supply or use the chemical must prove to the satisfaction of the department that the chemical is not toxic or otherwise a potential hazard in a potable public water supply system.

The supplier of water shall keep a record of all chemicals used. This record should include a clear identification of the chemical by brand or generic name and the dosage rate. When chemical treatment is applied with the intent of obtaining an in-system residual, the residuals will be monitored regularly. When chemical treatment is applied and in-system residuals are not expected, the effectiveness of the treatment will be monitored through an appropriate indicative parameter.

(1) Continuous disinfection.

1. When required. Continuous disinfection must be provided at all public water supply systems, except for the following: groundwater supplies that have no treatment facilities or have only fluoride, sodium hydroxide or soda ash addition and that meet the bacterial standards as provided in 567—subrule 41.2(1) and do not show other actual or potential hazardous contamination by microorganisms. For a noncommunity system that only uses a cation-exchange softening unit that meets the requirements of 42.3(4)“a”(7), the requirement for continuous disinfection is based upon the system’s history of both coliform bacteria detection and compliance with the coliform bacteria monitoring requirements as provided in 567—subrule 41.2(1).

2. Method. Chlorine is the preferred disinfecting agent. Chlorination may be accomplished with liquid chlorine, calcium or sodium hypochlorites or chlorine dioxide. Other disinfecting agents will be considered, provided a residual can be maintained in the distribution system, reliable application equipment is available and testing procedures for a residual are recognized in Standard Methods for the Analysis of Water and Wastewater.

3. Chlorine residual. A minimum free available chlorine residual of 0.3 mg/L or a minimum total available chlorine residual of 1.5 mg/L must be continuously maintained throughout the water distribution system, except for those points in the distribution system that terminate as dead ends or areas that represent very low use when compared to usage throughout the rest of the distribution system as determined by the department. All systems using water to which chlorine has been added must monitor daily in the distribution system to ensure the minimum disinfectant residual concentration is met, including both wholesale systems and consecutive systems.

4. Test kit. A test kit capable of measuring free and combined chlorine residuals in increments no greater than 0.1 mg/L in the range below 0.5 mg/L, and in increments no greater than 0.2 mg/L in the range from 0.5 mg/L to 1.0 mg/L, and in increments no greater than 0.3 mg/L in the range from 1.0 mg/L to 2.0

mg/L must be provided at all chlorination facilities. The test kit must use a method of analysis that is recognized in Standard Methods for the Examination of Water and Wastewater.

5. Leak detection, control and operator protection. A bottle of at least 56 percent ammonium hydroxide must be provided at all gas chlorination installations for leak detection. Leak repair kits must be available where ton chlorine cylinders are used.

6. Other disinfectant residuals. If an alternative disinfecting agent is approved by this department, the residual levels and type of test kit used will be assigned by the department in accordance with and based upon analytical methods contained in Standard Methods for the Examination of Water and Wastewater.

(2) Phosphate compounds.

1. When phosphate compounds are to be added to any public water supply system which includes iron or manganese removal or ion-exchange softening, such compounds must be applied after the iron or manganese removal or ion-exchange softening treatment units, unless the director has received and approved an engineering report demonstrating the suitability for addition prior to these units in accordance with the provisions of 567—subrule 43.3(2). The department may require the discontinuance of phosphate addition where it interferes with other treatment processes, the operation of the water system or if there is a significant increase in microorganism populations associated with phosphate application.

2. The total phosphate concentration in the finished water must not exceed 10 mg/L as PO_4 .

3. Chlorine shall be applied to the phosphate solution in sufficient quantity to give an initial concentration of 10 mg/L in the phosphate solution. A chlorine residual must be maintained in the phosphate solution at all times.

4. Test kits capable of measuring polyphosphate and orthophosphate in a range from 0.0 to 10.0 mg/L in increments no greater than 0.1 mg/L must be provided.

5. Continuous application or injection of phosphate compounds directly into a well is prohibited.

(3) Fluorosilicic acid. Where fluorosilicic acid (H_2SiF_6 , also called hydrofluosilicic acid) is added to a public water supply, the operator shall be equipped with a fluoride test kit with a minimum range of from 0.0 to 2.0 mg/L in increments no greater than 0.1 mg/L. Distilled water and standard fluoride solutions of 0.2 mg/L and 1.0 mg/L must be provided.

c. *Reporting and record-keeping requirements for systems using surface water and groundwater under the direct influence of surface water.* In addition to the monitoring requirements required by 42.4(3) “a” and “b,” a public water system that uses a surface water source or a groundwater source under the direct influence of surface water must report monthly to the department the information specified in this subrule beginning June 29, 1993, or when filtration is installed, whichever is later.

(1) Turbidity measurements as required by 567—subrule 43.5(3) must be reported within ten days after the end of each month the system serves water to the public. Information that must be reported includes:

1. The total number of filtered water turbidity measurements taken during the month.

2. The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limits specified in 567—paragraphs 43.5(3) “b” through “e” for the filtration technology being used.

3. The date and value of any turbidity measurements taken during the month which exceed 5 NTU. If at any time the turbidity exceeds 5 NTU, the system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements in 42.1(2). This requirement is in addition to the monthly reporting requirement, pursuant to 567—43.5(455B).

(2) Disinfection information specified in 567—subrule 43.5(2) and paragraph 42.4(3) “b” must be reported to the department within ten days after the end of each month the system serves water to the public. Information that must be reported includes:

1. For each day, the lowest measurement of residual disinfectant concentration in mg/L in water entering the distribution system.

2. The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.3 mg/L free residual chlorine or 1.5 mg/L total residual chlorine and when the department was notified of the occurrence.

If at any time the residual falls below 0.3 mg/L free residual chlorine or 1.5 mg/L total residual chlorine in the water entering the distribution system, the system must notify the department as soon as possible, but no later than by the end of the next business day. The system also must notify the department by the end of the next business day whether or not the residual was restored to at least 0.3 mg/L free residual chlorine or 1.5 mg/L total residual chlorine within four hours. This requirement is in addition to the monthly reporting requirement, pursuant to 567—43.5(455B).

3. The information on the samples taken in the distribution system in conjunction with total coliform monitoring listed in 567—paragraph 43.5(2) “d” and pursuant to 567—subparagraph 41.2(1) “c”(7).

(3) Total inactivation ratio. The total inactivation ratio must be calculated each day the treatment plant is in operation, pursuant to 567—paragraph 43.5(2) “a,” and reported on the monthly operation report. If the total inactivation ratio is below 1.0, the system must notify the department within 24 hours.

d. Reporting and record-keeping requirements for disinfection byproducts, disinfectants, and disinfection byproduct precursors.

(1) General requirements.

1. In addition to the monitoring requirements required by 42.4(3) “a” and “b,” a CWS or NTNC public water system that adds a chemical disinfectant to the water in any part of the drinking water treatment process or which provides water that contains a chemical disinfectant must report monthly to the department the information specified in this paragraph by the dates listed in 567—subparagraphs 41.6(1) “a”(3) and 43.6(1) “a”(3). A TNC public water system which adds chlorine dioxide as a disinfectant or oxidant must report monthly to the department the information specified in this paragraph by the dates listed in 567—paragraph 43.6(1) “a”(3) “3.”

2. Systems required to sample quarterly or more frequently must report to the department within ten days after the end of each quarter in which samples were collected, notwithstanding the public notification provisions of 567—42.1(455B). Systems required to sample less frequently than quarterly must report to the department within ten days after the end of each monitoring period in which samples were collected.

(2) Disinfection byproducts. Systems must report the information specified in the following table:

Disinfection Byproducts Reporting Table

If you are a ...	You must report ...
System monitoring for TTHMs and HAA5 under the requirements of 567—subparagraph 41.6(1) “c”(4) on a quarterly or more frequent basis	1. The number of samples taken during the last quarter. 2. The location, date, and result of each sample taken during the last quarter. 3. The arithmetic average of all samples taken in the last quarter. 4. The annual arithmetic average of the quarterly arithmetic averages for the last four quarters.* 5. Whether the MCL was exceeded. 6. Under Stage 2, any operational evaluation levels that were exceeded during the quarter, including the location and date and the calculated TTHM and HAA5 levels.
System monitoring for TTHMs and HAA5 under the requirements of 567—subparagraph 41.6(1) “c”(4) less frequently than quarterly, but at least annually	1. The number of samples taken during the last year. 2. The location, date, and result of each sample taken during the last monitoring period. 3. The arithmetic average of all samples taken over the last year.* 4. Whether the MCL was exceeded.
System monitoring for TTHMs and HAA5 under the requirements of 567—subparagraph 41.6(1) “c”(4) less frequently than annually	1. The location, date, and result of the last sample taken. 2. Whether the MCL was exceeded.
System monitoring for chlorite under the requirements of 567—subparagraph 41.6(1) “c”(3)	1. The number of samples taken each month for the last 3 months. 2. The location, date, and result of each sample taken during the last quarter. 3. For each month in the reporting period, the arithmetic average of all samples taken in each three sample set taken in the month. 4. Whether the MCL was exceeded, and in which month it was exceeded.
System monitoring for bromate under the requirements of 567—subparagraph 41.6(1) “c”(2)	1. The number of samples taken during the last quarter. 2. The location, date, and result of each sample taken during the last quarter.

If you are a ...	You must report ...
	3. The arithmetic average of the monthly arithmetic averages of all samples taken in the last year. 4. Whether the MCL was exceeded.

*The calculation of the running annual average will transition from a system-wide RAA calculation under Stage 1 to a locational running annual average (LRAA) under Stage 2. The transition will commence according to the system schedule listed in 567—paragraph 41.6(1)“b.” Beginning at the end of the fourth calendar quarter that follows the compliance date, and at the end of each subsequent quarter, the system must report the arithmetic average of quarterly results for the last four quarters of each monitoring location. If the calculated LRAA based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, the system must report this information to the department no later than the due date of the next compliance report.

(3) Disinfectants. In addition to the requirements in 567—subparagraph 41.2(1)“c”(7), systems must report the information specified in the following table:

Disinfectants Reporting Table

If you are a ...	You must report ...
System monitoring for chlorine or chloramines under the requirements of 567—paragraph 43.6(1)“c”(1)“2”	1. The number of samples taken during each month of the last quarter. 2. The monthly arithmetic average of all samples taken in each month for the last 12 months. 3. The arithmetic average of all monthly averages for the last 12 months. 4. Whether the MRDL was exceeded.
System monitoring for chlorine dioxide under the requirements of 567—paragraph 43.6(1)“c”(1)“3”	1. The dates, results, and locations of samples taken during the last quarter. 2. Whether the MRDL was exceeded. 3. Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acute or nonacute.

(4) Disinfection byproduct precursors and enhanced coagulation or enhanced softening. Systems must report the information specified in the following table:

Disinfection Byproduct Precursors and Enhanced Coagulation or
Enhanced Softening Reporting Table

If you are a ...	You must report ...
System monitoring monthly or quarterly for TOC under the requirements of 567—subparagraph 43.6(1) “c”(2) and required to meet the enhanced coagulation or enhanced softening requirements in 567—subparagraph 43.6(3) “b”(2) or (3)	1. The number of paired (source water and treated water, prior to continuous disinfection) samples taken during the last quarter. 2. The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. 3. For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal. 4. Calculations for determining compliance with the TOC percent removal requirements, as provided in 567—subparagraph 43.6(3) “c”(1). 5. Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in 567—paragraph 43.6(3) “b” for the last four quarters.
System monitoring monthly or quarterly for TOC under the requirements of 567—subparagraph 43.6(1) “c”(2) and meeting one or more of the alternative compliance criteria in 567—subparagraph 43.6(3) “a”(2) or (3)	1. The alternative compliance criterion that the system is using. 2. The number of paired samples taken during the last quarter. 3. The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. 4. The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in 567—paragraph 43.6(3) “a”(2) “1” or “3” or of treated water TOC for systems meeting the criterion in 567—paragraph 43.6(3) “a”(2) “2.” 5. The running annual arithmetic average based on monthly averages (or quarterly samples) of source water SUVA for systems meeting the criterion in 567—paragraph 43.6(3) “a”(2) “5” or of treated water SUVA for systems meeting the criterion in 567—paragraph 43.6(3) “a”(2) “6.” 6. The running annual average of source water alkalinity for systems meeting the criterion in 567—paragraph 43.6(3) “a”(2) “3” and of treated water alkalinity for systems meeting the criterion in 567—paragraph 43.6(3) “a”(3) “1.” 7. The running annual average for both TTHM and HAA5 for systems meeting the criterion in 567—paragraph 43.6(3) “a”(2) “3” or “4.” 8. The running annual average for the amount of magnesium hardness removal (as CaCO₃, in mg/L) for systems meeting the criterion in 567—paragraph 43.6(3) “a”(3) “2.” Whether the system is in compliance with the particular alternative compliance criterion in 567—subparagraph 43.6(3) “a”(2) or (3).
SW/IGW system on reduced monitoring for TTHM/HAA5 under the requirements of 567—paragraph 41.6(3) “d”	For each treatment plant that treats surface or IGW source water, report the following: 1. The number of source water TOC samples taken each month during the last quarter. 2. The date and result of each sample taken during the last quarter. 3. The quarterly average of monthly samples taken during the last quarter or the result of the quarterly sample. 4. The running annual average (RAA) of quarterly averages from the past four quarters. 5. Whether the TOC RAA exceeded 4.0 mg/L.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—42.5(455B) Record maintenance.

42.5(1) Record maintenance requirements. Any owner or operator of a public water system subject to the provisions of this rule shall retain on its premises or at a convenient location near its premises the following records:

a. Analytical records.

(1) Actual laboratory reports shall be kept, or data may be transferred to tabular summaries, provided that the following information is included:

1. The date, place, and time of sampling, and the name of the person who collected the sample;
2. Identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample or other special purpose sample;
3. Date of analysis;

4. Laboratory and person responsible for performing analysis;
5. The analytical technique or method used; and
6. The results of the analysis.
- (2) Record retention for specific analytes.
 1. Microbiological and turbidity: Records of microbiological analyses and turbidity analyses made pursuant to 567—Chapters 41 and 43 shall be kept for not less than five years.
 2. Chemical: radionuclide, inorganic compounds, organic compounds. Records of chemical analyses made pursuant to 567—Chapter 41 shall be kept for not less than ten years. Additional lead and copper requirements are listed in 42.5(1) “b.”
 - b. *Lead and copper record-keeping requirements.* A system subject to the requirements of 42.4(2) shall retain on its premises original records of all data and analyses, reports, surveys, public education, letters, evaluations, schedules, and any other information required by 567—41.4(455B) and 567—Chapter 43. Each water system shall retain the records required by this subrule for 12 years.
 - c. *Records of action (violation correction).* Records of action taken by the system to correct violations of primary drinking water regulations (including administrative orders) shall be kept for not less than five years after the last action taken with respect to the particular violation involved.
 - d. *Reports and correspondence relating to sanitary surveys.* Copies of any written reports, summaries, or communications relating to sanitary surveys of the system conducted by the system itself, by a private consultant, or by any local, state or federal agency, shall be kept for a period of not less than ten years after completion of the sanitary survey involved.
 - e. *Operation or construction permits.* Records concerning an operation or a construction permit issued pursuant to 567—Chapter 43 to the system shall be kept for a period ending not less than ten years after the system achieves compliance with the maximum contaminant level, treatment technique, action level, or health advisory, or after the system in question completes the associated construction project.
 - f. *Public notification.* Records of public notification, including the Consumer Confidence Report, public notification examples, and public notice certifications, must be kept for at least five years.
 - g. *Self-monitoring requirement records.* The monthly records of operation must be completed as described in 42.4(3) “a”(2) and maintained at the facility for inspection by the department for a period of at least five years. All data generated at the facility to comply with the self-monitoring requirements must be retained for a period of at least five years, and must be maintained at the facility for inspection by the department. The data shall be in a form that allows easy retrieval and interpretation. Examples of data that must be retained include, but are not limited to, recorder charts, logbooks, bench sheets, SCADA records, and electronic files.
 - h. *Monitoring plans.* Copies of monitoring plans developed pursuant to 567—Chapters 41, 42, and 43 shall be kept for the same period of time as the records of analyses taken under the plans are required to be kept, unless otherwise specified.
 - i. *Groundwater rule.* Additional record-keeping requirements for the groundwater rule are listed in 567—paragraph 41.7(6) “b.”
 - j. *Level 1 and 2 assessment forms and corrective action.* These record-keeping requirements pertain to the coliform bacteria requirements in 567—subrule 41.2(1).
 - (1) The system must maintain any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of those assessments, or other available summary documentation of the sanitary defects and corrective actions taken under 567—paragraph 41.2(1) “m” for department review. This record must be maintained by the system for a period not less than five years after completion of the assessment or corrective action.
 - (2) The system must maintain a record of any repeat sample taken that meets department criteria for an extension of the 24-hour period for collecting repeat samples as provided for under 567—paragraph 41.2(1) “j.”

42.5(2) Reserved.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

These rules are intended to implement Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192.

APPENDIX A:
STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

Contaminant	Standard Health Effects Language
Microbiological Contaminants	
Coliform assessment and/or corrective action violations, under 567—subrule 41.2(1)	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found. [THE SYSTEM MUST INCLUDE THE FOLLOWING APPLICABLE SENTENCES] ● We failed to conduct the required assessment. ● We failed to correct all identified sanitary defects that were found during the assessment(s).
<i>E. coli</i>	<i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.
<i>E. coli</i> assessment and/or corrective action violations, under 567—subrule 41.2(1)	<i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for <i>E. coli</i> , indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found. [THE SYSTEM MUST INCLUDE THE FOLLOWING APPLICABLE SENTENCES] ● We failed to conduct the required assessment. ● We failed to correct all identified sanitary defects that were found during the assessment(s).
Seasonal system treatment technique violation	● When this violation includes the failure to monitor for total coliforms or <i>E. coli</i> prior to serving water to the public, the mandatory language for monitoring violation in 42.1(5) “c”(2) must be used. ● When this violation includes failure to complete other actions, the appropriate elements found in 42.1(5) “c” to describe the violation must be used.
Fecal indicators for the groundwater rule (<i>E. coli</i> , enterococci, and coliphage)	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
Groundwater Treatment Technique Requirements	
Groundwater rule treatment technique violations	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.
Surface Water Treatment Technique Requirements	
Turbidity	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, protozoa, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches, and can lead to death.
Surface water/IGW system treatment technique	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, protozoa, and parasites, which can cause

Contaminant	Standard Health Effects Language
requirements: CT ratio; residual disinfectant; log removal/ inactivation of <i>Giardia</i> , viruses, and <i>Cryptosporidium</i> ; or filter backwash recycling	symptoms such as nausea, cramps, diarrhea, and associated headaches, and can lead to death.
Inorganic Chemical Contaminants	
Antimony	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
Arsenic	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
Asbestos	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
Barium	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Beryllium	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
Cadmium	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
Chromium, total	Some people who drink water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
Copper	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
Cyanide	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
Fluoride	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water above 2.0 mg/L may cause mottling of children's teeth, usually in children less than nine years of age. Mottling, also known as dental fluorosis, may include brown staining and pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
Lead	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
Mercury, inorganic	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
Nitrate	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Nitrite	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Total Nitrate and Nitrite	Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Selenium	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience loss of hair or fingernails, numbness in fingers or toes, or problems with their circulation.

Contaminant	Standard Health Effects Language
Thallium	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
Synthetic Organic Chemical Contaminants	
2,4-D	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
2,4,5-TP (Silvex)	Some people who drink water containing Silvex in excess of the MCL over many years could experience liver problems.
Alachlor	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
Atrazine	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or have reproductive difficulties.
Benzo(a)pyrene (PAHs)	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
Carbofuran	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
Chlordane	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
Dalapon	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
Di(2-ethylhexyl)adipate	Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement, or possible reproductive difficulties.
Di(2-ethylhexyl)-phthalate	Some people who drink water containing di(2-ethylhexyl)phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
Dibromochloropropane (DBCP)	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
Dinoseb	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
Dioxin (2,3,7,8-TCDD)	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
Diquat	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
Endothall	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
Endrin	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
Ethylene dibromide	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.

Contaminant	Standard Health Effects Language
Glyphosate	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
Heptachlor	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
Heptachlor epoxide	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
Hexachlorobenzene	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
Hexachloro-cyclopentadiene	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
Lindane	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
Methoxychlor	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
Oxamyl (Vydate)	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
Pentachlorophenol	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
Picloram	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
Polychlorinated byphenyls (PCBs)	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
Simazine	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
Toxaphene	Some people who drink water containing toxaphene in excess of the MCL over many years could experience problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
Volatile Organic Chemical Contaminants (VOCs)	
Benzene	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
Carbon tetrachloride	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Chlorobenzene (monochlorobenzene)	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
o-Dichlorobenzene	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory system.
p-Dichlorobenzene	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
1,2-Dichloroethane	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant	Standard Health Effects Language
1,1-Dichloroethylene	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
cis-1,2-Dichloroethylene	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
trans-1,2-Dichloroethylene	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
Dichloromethane	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
1,2-Dichloropropane	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
Ethylbenzene	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
Styrene	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
Tetrachloroethylene	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
Toluene	Some people who drink water containing toluene in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
1,2,4-Trichlorobenzene	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
1,1,1-Trichloroethane	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
1,1,2-Trichloroethane	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune system.
Trichloroethylene	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Vinyl chloride	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
Xylene (total)	Some people who drink water containing total xylene in excess of the MCL over many years could experience damage to their nervous system.
Radionuclide Contaminants	
Alpha emitters	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Beta/photon emitters	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Combined radium (226 & 228)	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
Uranium	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
Disinfection Byproducts	
Bromate	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant	Standard Health Effects Language
Chlorite	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
Haloacetic Acids (HAA)	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Total Trihalomethanes (TTHMs)	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
Residual Disinfectants	
Chloramines	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
Chlorine	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
Chlorine dioxide—acute (one or more distribution samples exceed the MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. The chlorine dioxide violations reported today include exceedances of the standard within the distribution system which delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.
Chlorine dioxide—non-acute (two consecutive daily samples taken at the source entry point to the distribution system are above the MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system which delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.
Disinfection Byproduct Precursors	
Total Organic Carbon (TOC)	Total organic carbon has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes and haloacetic acids. Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver, or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
Other Treatment Techniques	
Acrylamide	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
Epichlorohydrin	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

APPENDIX B:

MINIMUM SELF-MONITORING REQUIREMENTS (SMR)

I. Minimum Self-Monitoring Requirements for TNCs (excluding surface water or influenced groundwater PWSs)

Notes:

- The self-monitoring requirements (SMRs) only apply to those supplies meeting the required operation records applicability criteria in 42.4(3) “a”(1).
- TNCs are exempt from the self-monitoring requirements for point-of-use treatment devices, unless the device is used to remove a contaminant which has a maximum contaminant level or treatment technique, in which case additional SMRs will be assigned by the department.
- Daily monitoring for TNCs applies only when the facility is in operation.
- Additional or more frequent monitoring requirements may be assigned by the department in the operation permit.
- Additional SMRs are required if treatment is used to remove a regulated contaminant. See Section II for the requirements under the specific treatment type.

General Requirements

All TNCs which meet the required operation records applicability criteria in 42.4(3) “a”(1) must measure the following parameters, where applicable. Additional SMRs are required if treatment is used to remove a contaminant which has a maximum contaminant level or treatment technique. See Section II for the requirements under the specific treatment type.

	PWS Type:	TNC*
Parameter	Sample Site	Frequency
Pumpage (Flow)	raw: final:	1/week 1/week
Disinfectant Residual***	final: distribution system**:	1/day 1/day
Disinfectant, quantity used	day tank/scale:	1/day
Static Water and Pumping Water Levels (Drawdown)	each active well:	1/month

*TNCs must measure and record the total water used each week, but daily measurements are recommended, and may be required by the department in specific PWSs.

**Monitoring is to be conducted at representative points in the distribution system which adequately demonstrate compliance with 42.4(3) “b”(1).

***The department may reduce the required sample site locations for a system with a minimal distribution system and only hydropneumatic tank storage.

II. Minimum Self-Monitoring Requirements for CWS, NTNC, and IGW/SW TNC

Notes:

- The self-monitoring requirements (SMR) only apply to those supplies meeting the required operation records applicability criteria in 42.4(3) “a”(1).
- NTNCs are exempt from the self-monitoring requirements for point-of-use treatment devices, unless the device is used to remove a contaminant which has a maximum contaminant level, treatment technique, action level, or health advisory, in which case additional SMRs will be assigned by the department.
- Daily monitoring for NTNCs applies only when the facility is in operation.
- These are the minimum self-monitoring requirements. Additional or more frequent monitoring requirements may be assigned by the department in the operation permit.

A. General Requirements

All PWSs which meet the required operation records applicability criteria in 42.4(3)“a”(1) must measure the following parameters, where applicable:

	PWS Type:	NTNC* & IGW/SW TNC	CWS
Parameter	Sample Site	Frequency	Frequency
Pumpage (Flow)	raw: bypass: final:	1/week 1/week 1/week	1/day 1/day 1/day
Static Water and Pumping Water Levels (Drawdown)	each active well:	1/month	1/month

*NTNCs must measure and record the total water used each week, but daily measurements are recommended, and may be required by the department in specific PWSs.

B. Chemical Addition

All PWSs which apply chemicals in the treatment process must monitor the following parameters, for the applicable processes:

	Pumpage or Flow:	<0.1 MGD	0.1-0.5 MGD	>0.5 MGD
Parameter	Sample Site	Frequency	Frequency	Frequency
DISINFECTION				
Disinfectant Residual**	final: distribution system*:	1/day 1/day	1/day 1/day	1/day 1/day
Disinfectant, quantity used	day tank/scale:	1/day	1/day	1/day
FLUORIDATION				
Fluoride	raw: final:	1/quarter 1/day	1/month 1/day	1/month 1/day
Fluoride, quantity used	day tank/scale:	1/day	1/day	1/day
pH ADJUSTMENT				
pH	final:	1/week	2/week	1/day
Caustic Soda, quantity used	day tank/scale:	1/week	1/week	1/week
PHOSPHATE ADDITION				
Phosphate, as PO ₄	final:	1/week	2/week	1/day
Phosphate, quantity used	day tank/scale:	1/week	1/week	1/week
OTHER CHEMICALS				
Chemical	final:	1/week	2/week	1/day
Chemical, quantity used	day tank/scale:	1/week	1/week	1/week

*Monitoring is to be conducted at representative points in the distribution system which adequately demonstrate compliance with 42.4(3)“b”(1).

**The department may reduce the required sample site locations for a system with a minimal distribution system, only hydropneumatic tank storage, and, if a CWS, it serves less than 100 persons.

C. Iron or Manganese Removal

Nonmunicipalities except rural water systems, benefited water districts, and publicly owned PWSs are exempt from monitoring of iron/manganese removal equipment unless the treatment is or was installed to remove a contaminant which has a maximum contaminant level, treatment technique, action level, or health advisory. Any chemicals which are applied during the treatment process must be measured under section “B. Chemical Addition” of this table.

	Pumpage or Flow:	<0.1 MGD	0.1-0.5 MGD	>0.5 MGD
Parameter	Sample Site	Frequency	Frequency	Frequency
Iron	raw:	1/quarter	1/month	1/month
	final:	1/week	2/week	1/day
Manganese	raw:	1/quarter	1/month	1/month
	final:	1/week	2/week	1/day

D. pH Adjustment for Iron and Manganese Removal, by precipitation and coagulation processes utilizing lime, soda ash, or other chemical additions. Testing is only required if a specific chemical is added.

	Pumpage or Flow:	<0.1 MGD	0.1-0.5 MGD	>0.5 MGD
Parameter	Sample Site	Frequency	Frequency	Frequency
Alkalinity	raw:	1/quarter	1/month	1/month
	final:	1/week	2/week	1/day
Iron	raw:	1/quarter	1/month	1/month
	final:	1/week	2/week	1/day
Manganese	raw:	1/quarter	1/month	1/month
	final:	1/week	2/week	1/day
pH	raw:	1/week	1/week	1/week
	final:	1/week	2/week	1/day

E. Cation Exchange (Zeolite) Softening

Nonmunicipalities except for rural water systems and benefited water districts are exempt from the monitoring of water quality parameters associated with ion-exchange softening unless the treatment is or was installed to remove a contaminant which has a maximum contaminant level, treatment technique, action level, or health advisory. An annual sodium sample of the final water is required of all community systems that use cation exchange softening, and will also meet the special sodium monitoring requirement of 567—paragraph 41.11(1)“f.”

	Pumpage or Flow:	<0.1 MGD	0.1-0.5 MGD	>0.5 MGD
Parameter	Sample Site	Frequency	Frequency	Frequency
Hardness as CaCO ₃	raw:	1/quarter	1/month	1/month
	final:	1/week	2/week	1/day
pH	final:	1/week	2/week	1/day
Sodium*	final:	1/year	1/year	1/year

*The annual sodium sample required in 567—paragraph 41.11(1)“f” will satisfy this requirement.

F. Direct Filtration of Surface Waters or Influenced Groundwaters

	Pumpage or Flow:	All
Parameter	Sample Site	Frequency
CT Ratio	final:	1/day
Disinfectant Residual*	source/entry point: distribution system*:	continuous daily
Disinfectant, quantity used	day tank/scale:	1/day
pH	final:	1/day
Temperature	raw:	1/day
Turbidity	raw: final:	see 567—subrules 43.5(3) and 43.5(4), and 567—43.9(455B) for the specific requirements

*Monitoring is to be conducted to demonstrate compliance with paragraph 42.4(3) “b,” 567—subrules 43.5(2) and 43.5(4), and 567—43.6(455B).

G. Clarification or Lime Softening of Surface Waters or Influenced Groundwaters

	Pumpage or Flow:	All
Parameter	Sample Site	Frequency
Alkalinity	raw: final:	1/day 1/day
Caustic Soda, quantity used	day tank/scale:	1/week
CT Ratio	final:	1/day
Disinfectant Residual*	source/entry point: distribution system*:	continuous daily
Disinfectant, quantity used	day tank/scale:	1/day
Hardness as CaCO ₃	raw: final:	1/day 1/day
Odor	raw: final:	1/week 1/day
pH	raw: final:	1/day 1/day
Temperature	raw:	1/day
Turbidity	raw: final:	see 567—subrules 43.5(3) and 43.5(4), and 567—43.9(455B) for the specific requirements

*Monitoring is to be conducted to demonstrate compliance with paragraph 42.4(3) “b,” 567—subrules 43.5(2) and 43.5(4), and 567—43.6(455B).

H. Lime Softening of Groundwaters (excluding IGW)

	Pumpage or Flow:	<0.1 MGD	>0.1 MGD
Parameter	Sample Site	Frequency	Frequency
Alkalinity	raw:	1/quarter	1/month
	final:	1/day	1/day
Hardness as CaCO ₃	raw:	1/quarter	1/month
	final:	1/day	1/day
pH	raw:	1/week	1/week
	final:	1/day	1/day
Temperature	raw:	1/week	1/week

I. Reverse Osmosis or Electrodialysis

	Pumpage or Flow:	<0.1 MGD	>0.1 MGD
Parameter	Sample Site	Frequency	Frequency
Alkalinity	raw:	1/quarter	1/month
	final:	1/day	1/day
Hardness as CaCO ₃	raw:	1/quarter	1/month
	final:	1/day	1/day
Iron	raw:	1/day	1/day
Manganese	raw:	1/day	1/day
pH	raw:	1/week	1/week
	final:	1/day	1/day
Total Dissolved Solids	raw:	1/month	1/month

J. Anion Exchange (i.e., Nitrate Reduction)

	Pumpage or Flow:	<0.1 MGD	>0.1 MGD
Parameter	Sample Site	Frequency	Frequency
Nitrate	raw:	1/day	1/day
	final:	1/day	1/day
Sulfate	raw:	1/week	1/week
	final:	1/week	1/week

K. Activated Carbon for TTHM, VOC, or SOC Removal (GAC or PAC)

	Pumpage or Flow:	<0.1 MGD	>0.1 MGD
Parameter	Sample Site	Frequency	Frequency
Total Organic Carbon (TOC)	final:	1/quarter	1/month

L. Air-Stripping for TTHM, VOC, or SOC Removal

	Pumpage or Flow:	<0.1 MGD	>0.1 MGD
Parameter	Sample Site	Frequency	Frequency
Total Organic Carbon (TOC)	final:	1/quarter	1/month

M. Lead and Copper: Corrosion Control and Water Quality Parameters

The specific SMRs for corrosion control and water quality parameters are listed in 567—paragraph 41.4(1) “d” and 567—subrules 43.8(1) and 43.8(2).

N. Consecutive PWSs Supplied by a Surface Water or IGW PWS

	Pumpage or Flow:	All
Parameter	Sample Site	Frequency
Disinfectant Residual	source/entry point: distribution system*:	1/day 1/day
Disinfectant, quantity used (if applicable)	day tank/scale:	1/day
Pumpage or Flow	master meter:	1/day

*Monitoring is to be conducted at representative points in the distribution system.

APPENDIX C:
REGULATED CONTAMINANTS TABLE FOR CONSUMER CONFIDENCE REPORT

Key	
AL	Action Level
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MFL	million fibers per liter
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
mrem/year	millirems per year (a measure of radiation absorbed by the body)
n/a	not applicable
NTU	nephelometric turbidity units (a measure of water clarity)
pCi/L	picocuries per liter (a measure of radioactivity)
ppb	parts per billion, or micrograms per liter (µg/L)
ppm	parts per million, or milligrams per liter (mg/L)
ppq	parts per quadrillion, or picograms per liter (pg/L)
ppt	parts per trillion, or nanograms per liter (ng/L)
TT	Treatment Technique

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Microbiological Contaminants						
Total coliform bacteria	TT		TT	n/a	Naturally present in the environment	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.
<i>E. coli</i>	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive, or system fails to take repeat samples following <i>E. coli</i> -positive routine sample, or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i>		Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive, or system fails to take repeat samples following <i>E. coli</i> -positive routine sample, or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i>	0	Human and animal fecal waste	<i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.
Fecal indicators (enterococci or coliphage)	TT		TT	n/a	Human and animal fecal waste	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
Disinfection Byproduct Precursor Removal Requirements for Surface & Influenced Groundwater Systems						
Total organic carbon (ppm)	TT		TT	n/a	Naturally present in the environment	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver, or kidney

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
						problems, or nervous system effects, and may lead to an increased risk of getting cancer.
Surface Water & Influenced Groundwater System Treatment Requirements						
Turbidity (NTU)	TT		TT	n/a	Soil runoff	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, protozoa, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches, and can lead to death.
Surface water/IGW system treatment technique requirements: CT ratio; residual disinfectant; log removal/inactivation of <i>Giardia</i> , viruses, and <i>Cryptosporidium</i> ; or filter backwash recycling	TT		TT	n/a	Soil runoff	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, protozoa, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches, and can lead to death.
Radionuclide Contaminants						
Gross alpha emitters (pCi/L)	15 pCi/L		15	0	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Beta/photon emitters (mrem/yr)	4 mrem/yr		4	0	Decay of natural and man-made deposits	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Radium, combined 226 and 228 (pCi/L)	5 pCi/L		5	0	Erosion of natural deposits	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
Uranium (µg/L)	30 µg/L (footnote 2)		30	0	Erosion of natural deposits	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
Inorganic Contaminants						
Antimony (ppb)	0.006	1000	6	6	Discharge from petroleum refineries; fire retardants;	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
					ceramics; electronics; solder	
Arsenic (ppb) ³	0.010 ³	1000	10 ³	0 ³	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
Asbestos (MFL)	7 MFL		7	7	Decay of asbestos cement water mains; erosion of natural deposits	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
Barium (ppm)	2		2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Beryllium (ppb)	0.004	1000	4	4	Discharge from metal refineries and coal- burning factories; discharge from electrical, aerospace, and defense industries	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
Bromate (ppb)	0.010	1000	10	0	Byproduct of drinking water disinfection	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
Cadmium (ppb)	0.005	1000	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
Chloramines (ppm)	MRDL = 4.0		MRDL = 4.0	MRDLG = 4.0	Water additive used to control microbes	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Chlorine (ppm)	MRDL = 4.0		MRDL = 4.0	MRDLG = 4.0	Water additive used to control microbes	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
Chlorine dioxide (ppb)	MRDL = 0.8	1000	MRDL = 800	MRDLG = 800	Water additive used to control microbes	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.
Chlorite (ppm)	1.0		1.0	0.8	Byproduct of drinking water disinfection	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
Chromium (ppb)	0.1	1000	100	100	Discharge from steel and pulp mills; erosion of natural deposits	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
Copper (ppm)	AL = 1.3		AL = 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
Cyanide (ppb)	0.2	1000	200	200	Discharge from steel, metal, plastic, and fertilizer factories	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
Fluoride (ppm)	4.0		4.0	4.0	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL (2.0 ppm) or more may cause mottling of children's teeth, usually in children less than nine years of age. Mottling, also known as dental fluorosis, may include brown staining or pitting of the teeth, and occurs only in the developing teeth before they erupt from the gums.

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Lead (ppb)	AL = 0.015	1000	AL = 15	0	Corrosion of household plumbing systems; erosion of natural deposits	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
Mercury, inorganic (ppb)	0.002	1000	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
Nitrate, as N (ppm)	10		10	10	Runoff from fertilizer use; leaching from septic tanks or sewage; erosion of natural deposits	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Nitrite, as N (ppm)	1.0		1.0	1.0	Conversion of ammonia; runoff from fertilizer use; leaching from septic tanks or sewage; erosion of natural deposits	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Selenium (ppb)	0.05	1000	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
Thallium (ppb)	0.002	1000	2	0.5	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, change in their blood, or problems with their kidneys, intestines, or liver.
Synthetic Organic Contaminants						
2,4-D (ppb)	0.07	1000	70	70	Runoff from herbicide used on row crops	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
2,4,5-TP Silvex (ppb)	0.05	1000	50	50	Residue of banned herbicide	Some people who drink water containing Silvex in excess of the MCL over many years could experience liver problems.
Acrylamide	TT		TT	0	Added to water during sewage/ wastewater treatment	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
Alachlor (ppb)	0.002	1000	2	0	Runoff from herbicide used on row crops	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
Atrazine (ppb)	0.003	1000	3	3	Runoff from herbicide used on row crops	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
Benzo(a)pyrene, PAH (ppt)	0.0002	1,000,000	200	0	Leaching from linings of water storage tanks and distribution lines	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
Carbofuran (ppb)	0.04	1000	40	40	Leaching of soil fumigant used on rice and alfalfa	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
Chlordane (ppb)	0.002	1000	2	0	Residue of banned termiticide	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
Dalapon (ppb)	0.2	1000	200	200	Runoff from herbicide used on rights of way	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
Di(2-ethylhexyl)adipate (ppb)	0.4	1000	400	400	Discharge from chemical factories	Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement, or possible reproductive difficulties.
Di(2-ethylhexyl)phthalate (ppb)	0.006	1000	6	0	Discharge from rubber and chemical factories	Some people who drink water containing di(2-ethylhexyl)phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Dibromochloropropane [DBCP] (ppt)	0.0002	1,000,000	200	0	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.
Dinoseb (ppb)	0.007	1000	7	7	Runoff from herbicide used on soybeans and vegetables	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
Diquat (ppb)	0.02	1000	20	20	Runoff from herbicide use	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
Dioxin [2,3,7,8-TCDD] (ppq)	0.00000003	1,000,000,000	30	0	Emissions from waste incineration and other combustion; discharge from chemical factories	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
Endothall (ppb)	0.1	1000	100	100	Runoff from herbicide use	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
Endrin (ppb)	0.002	1000	2	2	Residue of banned insecticide	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
Epichlorohydrin	TT		TT	0	Discharge from industrial chemical factories; an impurity of some water treatment chemicals	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.
Ethylene dibromide (ppt)	0.0005	1,000,000	50	0	Discharge from petroleum refineries	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system or kidneys, and may have an increased risk of getting cancer.
Glyphosate (ppb)	0.7	1000	700	700	Runoff from herbicide use	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
Haloacetic Acids (HAA) (ppb)	0.060	1000	60	(footnote 4)	Byproduct of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Heptachlor (ppt)	0.0004	1,000,000	400	0	Residue of banned pesticide	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
Heptachlor epoxide (ppt)	0.0002	1,000,000	200	0	Breakdown of heptachlor	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
Hexachlorobenzene (ppb)	0.001	1000	1	0	Discharge from metal refineries and agricultural chemical factories	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
Hexachlorocyclopentadiene (ppb)	0.05	1000	50	50	Discharge from chemical factories	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
Lindane (ppt)	0.0002	1,000,000	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
Methoxychlor (ppb)	0.04	1000	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
Oxamyl [Vydate] (ppb)	0.2	1000	200	200	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
PCBs [polychlorinated byphenyls] (ppt)	0.0005	1,000,000	500	0	Runoff from landfills; discharge of waste chemicals	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
Pentachlorophenol (ppb)	0.001	1000	1	0	Discharge from wood preserving factories	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Picloram (ppb)	0.5	1000	500	500	Herbicide runoff	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
Simazine (ppb)	0.004	1000	4	4	Herbicide runoff	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
Toxaphene (ppb)	0.003	1000	3	0	Runoff/ leaching from insecticide used on cotton and cattle	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
Volatile Organic Contaminants						
Benzene (ppb)	0.005	1000	5	0	Discharge from factories; leaching from gasoline storage tanks and landfills	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
Carbon tetrachloride (ppb)	0.005	1000	5	0	Discharge from chemical plants and other industrial activities	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Chlorobenzene (ppb)	0.1	1000	100	100	Discharge from chemical and agricultural chemical factories	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
o-Dichlorobenzene (ppb)	0.6	1000	600	600	Discharge from industrial chemical factories	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory system.
p-Dichlorobenzene (ppb)	0.075	1000	75	75	Discharge from industrial chemical factories	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
1,2-Dichloroethane (ppb)	0.005	1000	5	0	Discharge from industrial chemical factories	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
1,1-Dichloroethylene (ppb)	0.007	1000	7	7	Discharge from industrial chemical factories	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
cis-1,2-Dichloroethylene (ppb)	0.07	1000	70	70	Discharge from industrial chemical factories	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
trans-1,2-Dichloroethylene (ppb)	0.1	1000	100	100	Discharge from industrial chemical factories	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
Dichloromethane (ppb)	0.005	1000	5	0	Discharge from industrial chemical factories	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
1,2-Dichloropropane (ppb)	0.005	1000	5	0	Discharge from industrial chemical factories	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
Ethyl benzene (ppb)	0.7	1000	700	700	Discharge from petroleum refineries; leaching from gasoline storage tanks and landfills	Some people who drink water containing ethyl benzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
Styrene (ppb)	0.1	1000	100	100	Discharge from rubber and plastic factories; leaching from landfills	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
Tetrachloroethylene (ppb)	0.005	1000	5	0	Discharge from factories and dry cleaners	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
1,2,4-Trichlorobenzene (ppb)	0.07	1000	70	70	Discharge from textile-finishing factories	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
1,1,1-Trichloroethane (ppb)	0.2	1000	200	200	Discharge from metal degreasing sites and other factories	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
1,1,2-Trichloroethane (ppb)	0.005	1000	5	3	Discharge from industrial chemical factories	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune system.

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Trichloroethylene (ppb)	0.005	1000	5	0	Discharge from metal degreasing sites and other factories	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Total trihalomethanes (TTHM) (ppb)	0.080	1000	80	(footnote 4)	Byproduct of drinking water disinfection	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
Toluene (ppm)	1		1	1	Discharge from petroleum factories; leaching from gasoline storage tanks and landfills	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
Vinyl chloride (ppb)	0.002	1000	2	0	Leaching from PVC piping; discharge from plastics factories	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
Xylenes (ppm)	10		10	10	Discharge from petroleum factories; discharge from chemical factories; leaching from gasoline storage tanks and landfills	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

¹MCL (for systems that collect >40 samples per month): 5% of monthly samples are positive. MCL (for systems that collect <40 samples per month): 1 positive monthly sample.

²Uranium MCL is effective on December 8, 2003. Until then, there is no MCL.

³Beginning on January 23, 2006, the arsenic MCL is 0.010 mg/L and the MCLG is 0. Until then, the MCL is 0.05 mg/L, and there is no MCLG.

⁴The MCLGs for total trihalomethanes and haloacetic acids:

Disinfection Byproduct	MCLG, mg/L	MCLG in CCR units
Bromodichloromethane	0	0
Bromoform	0	0
Chloroform	0.07	70
Dibromochloromethane	0.06	60
Dichloroacetic acid	0	0
Monochloroacetic acid	0.07	70
Trichloroacetic acid	0.02	20

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 12/14/11, effective 5/16/18]

APPENDIX D:

REGULATED CONTAMINANTS TABLES FOR CONSUMER CONFIDENCE REPORTS

Rescinded IAB 1/7/04, effective 2/11/04

APPENDIX E:

HEALTH EFFECTS LANGUAGE FOR CONSUMER CONFIDENCE REPORTS

Rescinded IAB 1/7/04, effective 2/11/04

APPENDIX F:

HEALTH EFFECTS LANGUAGE FOR FLUORIDE LEVELS BETWEEN 2 AND 4 MG/L

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CHAPTER 43
WATER SUPPLIES—DESIGN AND OPERATION

[Prior to 12/12/90, portions of this chapter appeared in 567—Ch 41]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—43.1(455B) General information.

43.1(1) *Emergency actions regarding water supplies.* When, in the opinion of the director, an actual or imminent hazard exists, the supplier of water shall comply with the directives or orders of the director necessary to eliminate or minimize that hazard.

43.1(2) *Prohibition on the use of lead pipes, solder and flux.* Any pipe, solder or flux which is used in the installation or repair of any public water supply system or any plumbing in a residential or nonresidential facility providing water for human consumption which is connected to a public water supply system shall be lead-free as defined in 567—40.2(455B). This action shall not apply to leaded joints necessary for the repair of cast iron pipe.

43.1(3) *Use of noncentralized treatment devices.*

a. Community PWS. Community public water systems shall not use bottled water, point-of-use (POU) or point-of-entry (POE) devices to achieve permanent compliance with a maximum contaminant level, action level, or treatment technique requirement in 567—Chapters 41 and 43.

b. Noncommunity PWS. Noncommunity public water supply systems may be allowed by the department to use point-of-use devices to achieve MCL compliance provided the contaminant does not pose an imminent threat to health (such as bacteria) nor place a sensitive population at risk (such as infants for nitrate or nitrite).

c. Reduced monitoring requirements. Bottled water, point-of-use, or point-of-entry devices cannot be used to avoid the monitoring requirements of 567—Chapters 41 and 43, but the department may allow reduced monitoring requirements in specific instances.

d. Bottled water requirements. The department may require a public water system exceeding a maximum contaminant level, action level, or treatment technique requirement specified in 567—Chapters 41 and 43 to use bottled water as a condition of an interim compliance schedule or as a temporary measure to avoid an unreasonable risk to health. Any bottled water must, at a minimum, meet the federal Food and Drug Administration bottled water standards, listed in the Code of Federal Regulations, Title 21, Chapter 165.110. The system must meet the following requirements:

(1) Monitoring program. Submit for approval to the department a monitoring program for bottled water. The monitoring program must provide reasonable assurances that the bottled water complies with all maximum contaminant levels, action levels, or treatment technique requirements in 567—Chapters 41 and 43. The public water system must monitor a representative sample of bottled water for all contaminants regulated under 567—Chapters 41 and 43 the first quarter that it supplies the bottled water to the public, and annually thereafter. Results of the monitoring program shall be provided to the department annually. If the bottled water is from a community public water system that currently meets all of the federal Safe Drinking Water Act requirements, the monitoring requirements of this subparagraph shall be waived by the department. The specific supplier of the bottled water must be identified in order for the department to waive the monitoring requirements.

(2) Certification requirements. The public water system must receive a certification from the bottled water company that the bottled water supplied has been taken from an “approved source”; the bottled water company has conducted monitoring in accordance with 43.1(3)“b”(1); and the bottled water meets MCLs, action levels, or treatment technique requirements as set out in 567—Chapters 41 and 43. The public water system shall provide the certification to the department the first quarter after it supplies bottled water and annually thereafter.

(3) Provision of bottled water to consumers. The public water supply system is fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the public water system via door-to-door bottled water delivery.

e. Point-of-use devices. Reserved.

f. Point-of-entry devices. Reserved.

43.1(4) *Cross-connection control.* To prevent backflow or backsiphonage of contaminants into a public water supply, connection shall not be permitted between a public water supply and any other system which does not meet the monitoring and drinking water standards required by this chapter except as provided below in “a” or “b.”

a. Piping and plumbing systems. Piping systems or plumbing equipment carrying nonpotable water, contaminated water, stagnant water, liquids, mixtures or waste mixtures shall not be connected to a public water supply unless properly equipped with an antisiphon device or backflow preventer acceptable to the department.

b. Bulk water loading stations. Positive separation shall be provided through the use of an air gap separation or a backflow preventer, which is acceptable to the department, at all loading stations for bulk transport tanks.

(1) Minimum air gap. The minimum required air gap shall be twice the diameter of the discharge pipe.

(2) Backflow preventer criteria. An approved backflow preventer for this application shall be a reduced pressure backflow preventer or an antisiphon device which complies with the standards of the American Water Works Association and has been approved by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California.

When, in the opinion of the department, evidence clearly indicates the source of contamination within the system is the result of a cross-connection, the department may require a public water supply to conduct public notification, identify and eliminate the connection, and implement a systemwide cross-connection program.

43.1(5) *Requirement for certified operator.* The department maintains a list of operators who are certified in accordance with 567—Chapter 81. The list includes the operator’s name, certification classification (Water Treatment, Water Distribution, or Grade A Water System), and grade (A, I, II, III, or IV), and is periodically updated during the year.

a. CWS and NTNC systems. All community and nontransient noncommunity public water supply systems must have a certified operator in direct responsible charge of the treatment and distribution systems, in accordance with 567—Chapters 40 through 44 and 81.

b. TNC systems. Any transient noncommunity public water supply system which is owned by the state or federal government, such as a state park, state hospital, or interstate rest stop, or is using a groundwater under the direct influence of surface water or surface water source, must have a certified operator in direct responsible charge of the treatment and distribution systems, in accordance with 567—Chapters 40 through 44 and 81. Any TNC which uses chlorine dioxide as a disinfectant or oxidant must have a certified operator in direct responsible charge of the system, pursuant to 567—Chapter 81. The department may require any TNC to have a certified operator in direct responsible charge.

43.1(6) *Return water in public water supply systems.* Steam condensate, cooling water from engine jackets, water used in conjunction with heat exchange devices, or treated wastewater shall not be returned to the public water supply system.

43.1(7) *Sanitary surveys.* Each public water supply system must have a periodic sanitary survey, conducted by the department or its designee, which is a records review and on-site inspection of the system. Systems must provide the department, at its request, any existing information that will enable the department to conduct the sanitary survey. The inspection evaluates the system’s ability to produce and distribute safe drinking water and identifies improvements necessary to maintain or improve drinking water quality. The sanitary survey includes review and inspection of the following areas: water source; treatment facilities; distribution system; finished water storage; pumps, pump facilities, controls and other equipment; monitoring, reporting, and data verification, including self-monitoring requirements; system operation and management; maintenance; properly certified operators; and records. A report of the sanitary survey is issued by the department or its designee, and may include both enforceable required actions for remedying significant deficiencies and nonenforceable recommended actions. The frequency of the sanitary survey inspection must be at least once every five years for noncommunity systems and once every three years for community systems. The department or its designee must provide the system with a written notice describing any significant deficiencies identified no later than 30 days after the department identifies the significant deficiency. The notice may be included in the sanitary survey report and may specify corrective

actions and deadlines for completion of corrective actions. Systems must respond in writing to significant deficiencies outlined in the sanitary survey report or written notice within the time period specified in the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey. At a maximum, the written response must be received within 30 days of receiving the survey report. All systems must take the steps necessary to address significant deficiencies identified in the sanitary survey report that are within the control of the system and its governing body.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—43.2(455B) Permit to operate.

43.2(1) Operation fees.

a. *Annual fee.* A fee for the operation of a public water supply system shall be paid annually. The fee will not be prorated and is nonrefundable. The fee shall be based on the population served. The fee shall be the greater of \$25 per year or \$0.14 multiplied by the total population served by the public water supply for all community and nontransient noncommunity public water supply systems. The fee shall be \$25 per year for all transient noncommunity water systems. Where a system provides water to another public water supply system (consecutive public water supply system) which is required to have an operation permit, the population of the recipient water supply shall not be counted as a part of the water system providing the water.

b. *Fee notices.* The department will send annual notices to public water supply systems at least 60 days prior to the date that the operation fee is due.

c. *Fee payments.* The annual operation fee must be paid to the department by September 1 each year.

d. *Fee schedule adjustment.* The department may adjust the per capita fee payment by up to +/- \$0.02 per person served so as to achieve the targeted revenue of \$350,000 during each fiscal year. The environmental protection commission must approve any per capita fee rate above \$0.14 per person. The extent of the fee adjustment must comply with Iowa Code section 455B.183A.

e. *Exempted public water supply systems.* Public water supply systems located on Indian lands are exempt from the fee requirements.

f. *Late fees.* When the owner of a public water supply fails to make timely application or to remit payment of fees by September 1, the department will notify the system by a single notice of violation. In addition, a late fee of \$100 will be assessed for failure to remit the operation fee by September 1. The department may thereafter issue an administrative order pursuant to Iowa Code section 455B.175(1) or request a referral to the attorney general under Iowa Code section 455B.175(3) as necessary.

43.2(2) Operation permit requirement. Except as provided in 43.2(3) and 43.2(4), no person shall operate any public water supply system or part thereof without, or contrary to any condition of, an operation permit issued by the director.

43.2(3) Application for operation permit. The owner of any public water supply system or part thereof must make application for an operation permit. No such system shall be operated without an operation permit, unless proper application has been made. Upon submission of a completed application form, the time requirement for having a valid operation permit is automatically extended until the application has either been approved or disapproved by the director.

43.2(4) Operation permit application form issuance.

a. *Operation permit application form.* Application for operation permits shall be made on forms provided by the department. The application for an operation permit shall be filed at least 90 days prior to the date operation is scheduled to begin unless a shorter time is approved by the director. The director shall issue or deny operation permits for facilities within 60 days of receipt of a completed application, unless a longer period is required and the applicant is so notified. The director may require the submission of additional information deemed necessary to evaluate the application. If the application is incomplete or otherwise deficient, processing of the application shall not be completed until such time as the applicant has supplied the missing information or otherwise corrected the deficiency.

b. *Identity of signatories of operation permit applications.* The person who signs the application for an operation permit shall be:

(1) Corporation. In the case of a corporation, a principal executive officer of at least the level of vice president. The corporation has the option of appointing a designated signatory to satisfy this requirement.

- (2) Partnership. In the case of a partnership, a general partner.
- (3) Sole proprietorship. In the case of a sole proprietorship, the proprietor.
- (4) Public facility. In the case of a municipal, state or other public facility, by either the principal executive officer or the ranking elected official.

c. *Appeal.* The denial of a permit, or any permit condition, may be appealed by the applicant to the environmental protection commission pursuant to 567—Chapter 7.

43.2(5) *Operation permit conditions.*

a. *Operation permit conditions.* Operation permits may contain such conditions as are deemed necessary by the director to ensure compliance with all applicable rules of the department, to ensure that the public water supply system is properly operated and maintained, to ensure that potential hazards to the water consumer are eliminated promptly, and to ensure that the requirements of the Safe Drinking Water Act are met.

b. *Compliance schedule.* Where one or more maximum contaminant levels, treatment techniques, designated health advisories, or action levels cannot be met immediately, a compliance schedule for achieving compliance with standards may be made a condition of the permit. A compliance schedule requiring alterations in accordance with the standards for construction in 43.3(1) and 43.3(2) may also be included for any supply that, in the opinion of the director, contains a potential hazard.

c. *Treatment.* If the department determines that a treatment method identified in 43.3(10) is technically feasible, the department may require the system to install or use that treatment method in connection with a compliance schedule issued under the provisions of 43.2(5)“b.” The department’s determination shall be based upon studies by the system and other relevant information.

43.2(6) *Notification of change in operation permit application conditions.* The owner of a public water supply system shall notify the director within 30 days of any change in conditions identified in the permit application. This notice does not relieve the owner of the responsibility to obtain a construction permit as required by 567—43.3(455B).

43.2(7) *Renewal of operation permits.* The department may issue operation permits for durations of up to five years. Operation permits must be renewed prior to expiration in order to remain valid. The renewal date shall be specified in the permit or in any renewal. Application for renewal must be received by the director, or postmarked, 60 days prior to the renewal date, on forms provided by the department.

43.2(8) *Denial, modification, or suspension of operation permit.* The director may deny renewal of, modify, or suspend, in whole or in part, any operation permit for good cause. Denial of a new permit, renewal of an existing permit, or modification of a permit, may be appealed to the environmental protection commission pursuant to 567—Chapter 7. Suspension or revocation may occur after hearing, pursuant to 567—Chapter 7. Good cause includes the following:

- a. Violation of any term or condition of the permit.
- b. Obtaining a permit by misrepresentation of fact or failure to disclose fully all material facts.
- c. A change in any condition that requires either a permanent or temporary modification of a permit condition.
- d. Failure to submit such records and information as the director may require both generally and as a condition of the operation permit in order to ensure compliance with conditions specified in the permit.
- e. Violation of any of the requirements contained in 567—Chapters 40 to 43.
- f. Inability of a system to either achieve or maintain technical, managerial, or financial viability, as determined in rule 567—43.8(455B).

567—43.3(455B) Public water supply system construction.

43.3(1) *Standards for public water supplies.* Any public water supply that does not meet the drinking water standards contained in 567—Chapters 41 and 43 shall make the alterations in accordance with the standards for construction contained in 43.3(2) necessary to comply with the drinking water standards unless the public water supply has been granted a variance from a maximum contaminant level or treatment technique as a provision of its operation permit pursuant to 567—43.2(455B), provided that the public water supply meets the schedule established pursuant to 567—43.2(455B). Any public water supply that, in the opinion of the director, contains a potential hazard shall make the alterations in accordance with the standards for construction contained in this rule necessary to eliminate or minimize that hazard. A system

that is not operating within the design standards may be required by the department via a compliance schedule to upgrade the deficient areas of the system before a construction permit will be issued for any work in the system that does not address the current deficiencies.

43.3(2) Standards for construction.

a. The standards for a project are the Ten States Standards as adopted through 2012 and the American Water Works Association (AWWA) Standards as adopted through 2016 and 43.3(7) to 43.3(9). To the extent of any conflict between the Ten States Standards and the American Water Works Association Standards and 43.3(7) to 43.3(9), the Ten States Standards, 43.3(2), and 43.3(7) to 43.3(9) shall prevail. Additional standards include the following:

(1) Polyvinyl chloride (PVC) pipe manufactured in accordance with ASTM D2241, AWWA C900, AWWA C905, ASTM F1483, or AWWA C909 may be used for water main construction. The maximum allowable pressure for PVC or polyethylene (PE) pipe shall be determined based on a safety factor of 2.0 and a surge allowance of no less than two feet per second (2 fps).

(2) For CWS groundwater systems, a minimum of two wells shall be provided, unless the system demonstrates to the department's satisfaction that a single well will provide a reliable and adequate source. For NTNC and TNC groundwater systems, a single well is acceptable.

(3) Separation of water mains from sanitary and combined sewers.

1. Horizontal separation of water mains from gravity sanitary and combined sewers. Water mains shall be separated from gravity sanitary and combined sewer mains by a horizontal distance of at least ten feet measured edge to edge unless the bottom of the water main is at least 18 inches above the top of the sewer, and either:

- The water main is placed in a separate trench, or
- The water main is located on a bench of undisturbed earth at a minimum horizontal separation of three feet from the sewer.

If it is not possible to obtain a horizontal separation of three feet and a vertical separation of 18 inches between the bottom of the water main and the top of the sewer, a linear separation of at least two feet shall be provided, and one of the following shall be utilized:

- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight end seals, or
- The sewer shall be constructed of water main materials.

The separation distance between the water main and the sewer shall be the maximum feasible in all cases.

2. Horizontal separation of water mains from sanitary sewer force mains. Water mains shall be separated from sanitary sewer force mains by a horizontal distance of at least ten feet measured edge to edge unless the sanitary sewer force main is constructed of water main materials and the water main is laid at least four feet horizontally from the sanitary sewer force main. The separation distance between the water main and the sanitary sewer force main shall be the maximum feasible in all cases.

3. Vertical separation of water mains from sanitary and combined sewer crossovers. Vertical separation of water mains crossing over any sanitary or combined sewers shall be at least 18 inches when measured from the bottom of the water main to the top of the sewer. If it is not possible to maintain the required vertical separation, one of the following shall be utilized:

- The bottom of the water main shall not be placed closer than six inches above the top of a sewer, or
- The top of the water main shall not be placed closer than 18 inches below the bottom of a sewer.

When a water main crosses below or less than 18 inches above a sanitary or combined sewer, one of the following shall be utilized within ten feet measured edge to edge horizontally, centered on the crossing:

- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight ends, or
- Sewer pipe of water main material shall be installed.

The separation distance shall be the maximum feasible in all cases. Wherever a water main crosses a sanitary or combined sewer, the water main and sanitary or combined sewer pipes must be adequately supported. A low permeability soil shall be used for backfill material within ten feet of the point of crossing along the water main.

4. Horizontal separation of water mains from sanitary and combined sewer manholes. No water pipe shall pass through or come in contact with any part of a sanitary or combined sewer manhole. A minimum horizontal separation of three feet shall be maintained.

(4) Separation of water mains from storm sewers.

1. Horizontal separation of water mains from gravity storm sewers. Water mains shall be separated horizontally from gravity storm sewers by at least ten feet measured edge to edge. If it is not possible to maintain the required horizontal separation of ten feet, a minimum of three feet of separation shall be maintained and one of the following shall be utilized within ten feet measured edge to edge:

- The water main shall be constructed of ductile iron pipe with gaskets impermeable to hydrocarbons, or

- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight end seals, or

- Storm sewer pipe of water main material shall be installed, or

- Reinforced concrete pipe storm sewers shall be constructed with gaskets manufactured in accordance with ASTM C443.

2. Vertical separation of water mains from storm sewer crossovers. Water mains shall be vertically separated from storm sewers by at least 18 inches between the outside edges of the water main and the storm sewer. The separation distance shall be the maximum feasible in all cases. In all cases where a water main crosses a storm sewer, the water main and storm sewer pipes must be adequately supported. A low permeability soil shall be used for backfill material within ten feet of the point of crossing along the water main. If it is not possible to obtain 18 inches of vertical separation where the water main crosses above a storm sewer, a minimum of 6 inches vertical separation shall be maintained and one of the following shall be utilized within ten feet measured edge to edge horizontally, centered on the crossing:

- The water main shall be constructed of ductile iron pipe with gaskets impermeable to hydrocarbons, or

- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight end seals, or

- Storm sewer pipe of water main material shall be installed, or

- Reinforced concrete pipe storm sewers shall be constructed with gaskets manufactured in accordance with ASTM C443.

b. Variance. When engineering justification satisfactory to the director is provided substantially demonstrating that variation from the design standards will result in equivalent or improved effectiveness, such a variation from design standards may be accepted by the director. A variance denial may be appealed to the environmental protection commission pursuant to 567—Chapter 7. Variance requests for projects qualifying for a waiver from the engineering requirement of 43.3(4) may be made without the retained services of a professional engineer.

43.3(3) Construction permits. No person shall construct, install or modify any project without first obtaining, or contrary to any condition of, a construction permit issued by the director or by a local public works department authorized to issue permits under 567—Chapter 9 except as provided in 43.3(3) “b,” 43.3(4) and 43.3(6). Construction permits are not required for point-of-use treatment devices installed by a noncommunity water system except those devices required by the department to meet a drinking water standard pursuant to 567—Chapters 41 and 43. No construction permit will be issued for a new public water supply system without a completed viability assessment, which has been approved by the department, and demonstrates that the system is viable, pursuant to 567—43.8(455B).

a. *Construction permit issuance conditions.* A permit to construct shall be issued by the director if the director concludes from the application and specifications submitted pursuant to 43.3(4) and 567—40.4(455B) that the project will comply with the rules of the department. The construction of the project must begin within one year from the date the permit was issued; if it is not, the permit is no longer valid. If construction is ongoing and continuous (aside from delays due to winter or exceptional weather) and the permitted project cannot be completed within one year, the permit shall remain valid until the project is completed. The department may grant an extension of the permit for a multiphase project, for a maximum two additional years.

b. Construction permit application. Application for any project shall be submitted to the department at least 30 days prior to the proposed date for commencing construction or awarding of contracts. This requirement may be waived when it is determined by the department that an imminent health hazard exists to the consumers of a public water supply. Under this waiver, construction, installation, or modification may be allowed by the department prior to review and issuance of a permit if all the following conditions are met:

- (1) The construction, installation or modification will alleviate the health hazard;
- (2) The construction is done in accordance with the standards for construction pursuant to 43.3(2);
- (3) Plans and specifications are submitted within 30 days after construction;
- (4) A professional engineer, licensed in the state of Iowa, supervises the construction; and
- (5) The supplier of water receives approval of this waiver prior to any construction, installation, or modification.

c. Construction permit fees. A nonrefundable fee for a construction permit issued in accordance with subrules 43.3(3) and 43.3(4) and 567—subrules 40.3(1) and 40.4(1) shall be submitted with the application for a construction permit prior to the authorization to commence construction. The construction permit fee shall be based upon the following rate structure:

- (1) Routine construction permits. The fee shall be determined based upon the total length of water main plus the non-water-main-related construction costs, calculated as follows:

1. Water mains (minimum fee of \$100; maximum fee of \$5,000):

Length of permitted water main	Rate
First 1,000 ft.	\$100
Next 19,000 ft.	\$0.10/ft.
Next 300,000 ft.	\$0.01/ft.
Over 320,000 ft.	No additional charge

2. Non-water-main-related construction costs, including source, treatment, pumping, storage and waste handling (minimum fee of \$100; maximum fee of \$16,000):

Estimated construction cost	Rate
First \$50,000	\$100
Next \$950,000	0.2% of estimated construction cost
Next \$14,000,000	0.1% of estimated construction cost
Over \$15,000,000	No additional charge

- (2) “As-built” construction. “As-built” construction is defined as construction that occurred before a construction permit is issued. The fee shall be calculated according to 43.3(3) “c”(1), plus an additional fee of \$200, and is effective for construction that occurred after December 1, 2003. The fee for water main projects permitted in accordance with paragraph 43.3(3) “e” shall be calculated in accordance with subparagraph 43.3(3) “c”(1); however, the additional “as-built” fee of \$200 shall not be assessed for these projects.

- (3) Change orders, addenda, permit supplements, and request for time extensions. A fee for change orders, addenda, or permit supplements will only be charged if the aggregate of the changes approved for the project to date causes the total project construction cost to exceed the original project construction cost by at least 5 percent. For water main extensions, the fee will be charged if the total length of water main exceeds the original approved length by 5 percent. The request for a time extension is a flat fee.

Categories	Rate
Change orders, addenda, and permit supplements for water mains	\$0.10/ft. of additional water main, minimum fee: \$50
Change orders, addenda, and permit supplements for non-water-main-related construction costs	0.2% of additional non-water-main-related construction costs, minimum fee: \$50
Request for time extension	\$50

(4) Calendar year construction permit fee cap. The total amount of construction permit fees for a public water supply system owner during any calendar year shall not exceed \$5,000 for water mains and \$16,000 for non-water-main-related construction projects.

d. Water well construction. All water well construction must be performed by a certified well contractor in accordance with 567—Chapter 82. It is the responsibility of the public water supply and certified well contractor to ensure that a public well construction permit has been issued by the department prior to initiation of well construction and to ensure that all well construction is performed in accordance with the provisions of this chapter.

e. Minor water main construction permit. A public water system may obtain a minor water main construction permit from the department for construction or replacement of minor water mains that serve additional users. By obtaining this permit, the system is able to construct new minor water mains or extend or replace existing minor water mains without obtaining an individual construction permit for each specific water main. The permit shall allow construction or replacement of minor water mains that do not exceed six inches in diameter and, in aggregation, do not increase the average daily demand (in gallons per day) of the public water supply system by more than 5 percent over the duration of the permit.

The additional users must have been included in the system's hydraulic analysis that has been approved by the department. The water demands of the additional users must be consistent with the water demands in the approved hydraulic analysis.

(1) A minor water main construction permit shall be issued subject to the following conditions:

1. The system has standard specifications for water main construction approved and on file with the department;

2. The system has adequate source capacity and, where treatment is provided, adequate treatment plant capacity to meet the peak day demand of all existing users and the proposed additional users covered under the permit;

3. The system has adequate storage capacity to meet the average day demand of all existing users and the proposed additional users covered under the permit; and

4. The system submits an application for a minor water main construction permit prior to the construction or replacement of any water main covered by the permit. The permit application must be submitted to the department 90 days before the anticipated first use of the permit, and construction shall not commence prior to the issuance of the permit. The minor water main construction permit expires on December 31 of the year in which it is issued. The application shall include the following:

- An up-to-date hydraulic analysis of the system, prepared and submitted by a licensed professional engineer, must be either on file with the department or submitted with the permit application. The hydraulic basis of flow (gallons per minute per connection) used in the analysis must be acceptable to the department. The hydraulic analysis shall include:

- All existing water mains within the system;
- All proposed water mains intended to be covered by the permit;
- A demonstration that the system has adequate hydraulic capacity to serve the existing and new users under peak flow conditions without causing the pressure to fall below 20 psi anywhere within the system;
- The location of all potential users of the system;
- The diameter of all existing and proposed pipes;
- The projected system flows; and
- The static and dynamic pressures anticipated throughout the system with the addition of the new users incorporated in the analysis.

- A completed Schedule 1b, Minor Water Main Construction Permit Application (Form 542-3151), listed in 567—subrule 40.3(1).

(2) The system must submit completed Schedule 2c, Notification of Minor Water Main Construction (Form 542-3152), prior to the construction or replacement of each minor water main covered by this permit. Each water main covered by the permit must have either been included in the previously submitted hydraulic analysis or must be included in an update to the hydraulic analysis, submitted with Schedule 2c. If an update to the hydraulic analysis is submitted with Schedule 2c, it must include all portions of the distribution system potentially affected by the new construction.

(3) By January 31 of the following year, the system shall submit the following to the department:

1. A complete set of plans for all water main extensions constructed under the permit. The plans must be prepared and submitted by a licensed professional engineer.

2. Completed Schedules 1a, 1c, and 2a, listed in 567—subrule 40.3(1).

3. The construction permit fee calculated in accordance with subparagraph 43.3(3)“c”(1). The fee calculation shall be based upon the total length of water main constructed under the permit. For the purpose of calculating the total amount of water main construction permit fees, paid by the system in accordance with subparagraph 43.3(3)“c”(4), the fee shall be credited to the calendar year in which the actual fee was received by the department.

(4) A permit shall contain such conditions as are deemed necessary by the director to ensure compliance with all applicable rules of the department.

(5) The director may modify the permit, in whole or in part, at any time. The director may suspend or revoke the permit, in whole or in part, at any time by providing written notice to the permit holder and is not obligated to renew the permit. Cause for modification, suspension, or revocation of the permit includes, but is not limited to, the following:

1. Violation of any term or condition of the permit;
2. Misrepresentation of fact or failure to disclose fully all material facts in order to obtain a permit;
3. Failure to submit the records and information as required by the director, both generally and as condition of the permit;
4. Failure to submit timely reports from previous permits;
5. Failure to construct in accordance with approved design standards in accordance with subrule 43.3(2); or
6. Failure to construct in accordance with the system’s approved standard specifications.

(6) No variance to the design standards is allowed under this permit. If a variance to the design standards is needed, the system must apply for an individual construction permit following the procedures in 567—subrule 40.4(1).

43.3(4) *Waiver from engineering requirements.* The requirement for plans and specifications prepared by a licensed professional engineer may be waived for the following types of projects, provided the improvement complies with the standards for construction. This waiver does not relieve the supplier of water from meeting the application and permit requirements pursuant to 43.3(3), except that the applicant need not obtain a written permit prior to installing the equipment.

a. Simple chemical feed, if all the following conditions are met:

(1) The improvement consists only of a simple chemical solution application or installation, which in no way affects the performance of a larger treatment process, or is included as part of a larger treatment project;

(2) The chemical application is by a positive displacement pump (of the piston type with a solenoid operated diaphragm), the acceptability of said pump to be determined by the department;

(3) The supplier of water provides the department with a schematic of the installation and manufacturer’s specifications sufficient enough to determine if the simple chemical feed installation meets, where applicable, standards for construction pursuant to 43.3(2);

(4) The final installation is approved based on an on-site review and inspection by department staff; and

(5) The installation includes only the prepackaged delivery of chemicals (from sacks, containers, or carboys) and does not include the bulk storage or transfer of chemicals (from a delivery vehicle).

b. Self-contained treatment unit, if all the following conditions are met:

(1) The equipment is of a type which can be purchased “off the shelf,” is self-contained requiring only a piping hookup for installation and operates throughout a range of 35 to 80 pounds per square inch;

(2) The plant is designed to serve no more than an average of 250 individuals per day;

(3) The department receives adequate information from the supplier of water on the type of treatment unit, such as manufacturer’s specifications, a schematic indicating the installation’s location within the system and any other information necessary for review by the department to determine if the installation will alleviate the maximum contaminant level violation; and

(4) The final installation is approved based on an on-site inspection by department staff.

43.3(5) *Project planning and basis of design.* An engineering report containing information and data necessary to determine the conformance of the project to the standards for construction and operation in 43.3(2) and the adequacy of the project to supply water in sufficient quantity and at sufficient pressure and

of a quality that complies with drinking water standards pursuant to 567—Chapters 41 and 43 must be submitted to the department either with the project or in advance.

a. Such information and data must supply pertinent information as set forth in part one of the Ten States Standards.

b. The department may reject receipt or delay review of the plans and specifications until an adequate basis of design is received.

43.3(6) *Standard specifications for water main construction.* Standard specifications for water main construction by an entity may be submitted to the department or an authorized local public works department for approval. Such approval shall apply to all future water main construction by or for that entity for which plans are submitted with a statement requiring construction in accordance with all applicable approved standard specifications unless the standards for public water supply systems specified in 43.3(2) are modified subsequent to such approval and the standard specifications would not be approvable under the modified standards. In those cases where such approved specifications are on file, construction may commence 30 days following receipt of such plans by the department or an authorized local public works department if no response has been received indicating construction shall not commence until a permit is issued.

43.3(7) *Site, separation distance, and monitoring requirements for new raw water source(s) and underground finished water storage facilities.*

a. Approval required. The site for each proposed raw water supply source or finished water below-ground level storage facility must be approved by the department prior to the submission of plans and specifications.

b. Criteria for approval. A site may be approved by the director if the director concludes that the criteria in this paragraph are met.

(1) Groundwater source. Wells shall be planned and constructed to adapt to the geologic and groundwater conditions of the proposed well site to ensure production of water from the wells that is both microbially safe and free of substances that could cause harmful human health effects. Groundwater wells must meet the following requirements:

1. Drainage must be directed away from the well in all directions for a minimum radius of 15 feet.
2. A well site must be separated from contamination sources by the distances specified in Table A at a minimum.

3. After the well site has received preliminary approval from the department, the owner of the proposed well must submit proof of legal control of the land for a 200-foot radius around the well, through purchase, lease, easement, ordinance, or other similar means. Proof of legal control must be submitted as part of the construction permit application, prior to construction. The legal control must be maintained by the public water system for the life of the well, and the system must ensure that the siting criteria indicated in Table A are met.

However, if the proposed well is for an existing noncommunity water system and is replacing an existing well that either does not meet the current standards or is in poor condition, the requirement of 200-foot legal control may be waived by the department provided that:

- The proposed well is located on the best available site;
- The existing facility does not have adequate land to provide the 200-foot control zone;
- The owner has attempted to obtain legal control without success; and
- There is no other public water supply available to which the supply could connect.

4. When the proposed well is located in an existing well field and will withdraw water from the same aquifer as the existing well(s), individual separation distances may be waived if substantial historical data are available indicating that no contamination has resulted.

5. No well shall be constructed within the projected plume of any known anthropogenic groundwater contamination without the department's written approval. The department may allow a well to be constructed within a contamination plume if the applicant can provide adequate treatment to ensure that all drinking water standards are met and that the pumpage of the proposed well will not cause migration of the plume such that it impacts the water quality of other nearby wells. The applicant must demonstrate, using a hydrogeologic model acceptable to the department, that the time of transport is greater than two years for a

viral, bacterial, or other microorganism contaminant and greater than ten years for all chemical contaminants. At a minimum, modeling of the projected plume must take into account the proposed pumpage rate of the well. The department may require additional construction standards for these situations to ensure protection of the groundwater from contamination.

6. The department may require that an identification tag be applied to each well and may supply the numbered tag. The responsibility for ensuring that the tag is properly attached to the well is with the certified water well contractor for new wells and with the department for existing wells.

(2) Surface water source. The applicant must submit proof that a proposed surface water source can, through readily available treatment methodology, comply with 567—Chapters 41 and 43, and that the raw water source is adequately protected against potential health hazards including, but not limited to, point source discharges, hazardous chemical spills, and the potential sources of contamination listed in Table A.

After a surface water impoundment has received preliminary approval from the department for use as a raw water source, the owner of the water supply system shall submit proof of legal control through ownership, lease, easement, or other similar means, of contiguous land for a distance of 400 feet from the shoreline at the maximum water level. Legal control shall be for the life of the impoundment and shall control location of sources of contamination within the 400-foot distance. Proof of legal control should be submitted as part of the construction permit application and shall be submitted prior to issuance of a permit to construct.

(3) Below-ground storage facilities. The minimum separation between a below-ground level finished water storage facility and any source of contamination listed in Table A as being 50 feet or more shall be 50 feet. The specific separation distances listed in Table A that are less than 50 feet shall apply to a below-ground level finished water storage facility as indicated in the table.

(4) Separation distances. Greater separation distances may be required where necessary to ensure that no adverse effects to water supplies or the existing environment will result. Lesser separation distances may be considered if detailed justification is provided by the applicant's engineer showing that no adverse effects will result from a lesser separation distance, and the regional staff recommends approval of the lesser distance. Such exceptions must be based on special construction techniques or localized geologic or hydrologic conditions.

c. *New source water monitoring requirements.* Water quality monitoring shall be conducted on all new water sources and results submitted to the department prior to placing the new water source into service.

(1) All sources. Water samples shall be collected from each new water source and analyzed for all appropriate contaminants as specified in 567—Chapter 41 consistent with the particular water system classification. If multiple new sources are being added, compositing of the samples (within a single system) shall be allowed in accordance with the composite sampling requirements outlined in 567—Chapter 41. A single sample may be allowed to meet this requirement, if approved by the department.

Subsequent water testing shall be conducted consistent with the water system's water supply operation permit monitoring schedule.

(2) Groundwater sources. Water samples collected from groundwater sources in accordance with 43.3(7)“c”(1) shall be conducted at the conclusion of the drawdown/yield test pumping procedure, with the exception of bacteriological monitoring. Bacteriological monitoring must be conducted after disinfection of each new well and subsequent pumping of the chlorinated water to waste. Water samples must be analyzed for ammonia. Water samples should also be analyzed for alkalinity, pH, calcium, chloride, copper, hardness, iron, magnesium, manganese, potassium, silica, specific conductance, sodium, sulfate, filterable and nonfilterable solids, and zinc.

(3) Surface water sources. Water samples collected from surface water sources in accordance with 43.3(7)“c”(1) should be collected prior to the design of the surface water treatment facility and shall be conducted and analyzed prior to utilization of the source. The samples shall be collected during June, July, and August. In addition, quarterly monitoring shall be conducted in March, June, September, and December at a location representative of the raw water at its point of withdrawal. Monitoring shall be for turbidity, alkalinity, pH, calcium, chloride, color, copper, hardness, iron, magnesium, manganese, potassium, silica, specific conductance, sodium, sulfate, filterable and nonfilterable solids, carbonate,

bicarbonate, algae (qualitative and quantitative), total organic carbon, five-day biochemical oxygen demand, dissolved oxygen, surfactants, nitrogen series (organic, ammonia, nitrite, and nitrate), and phosphate.

TABLE A: SEPARATION DISTANCES

SOURCE OF CONTAMINATION	REQUIRED MINIMUM LATERAL DISTANCE FROM WELL AS HORIZONTAL ON THE GROUND SURFACE, IN FEET	
	Deep Well ¹	Shallow Well ¹
WASTEWATER STRUCTURES:		
Point of Discharge to Ground Surface		
Sanitary & industrial discharges	400	400
Water treatment plant wastes	50	50
Well house floor drains	5	5
Sewers & Drains²		
Sanitary & storm sewers, drains	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer pipe	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer main pipe
Sewer force mains	0 – 75 feet: prohibited 75 – 400 feet if water main pipe 400 – 1000 feet if sanitary sewer pipe	0 – 75 feet: prohibited 75 – 400 feet if water main pipe 400 – 1000 feet if sanitary sewer main pipe
Water plant treatment process wastes that are treated onsite	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer pipe	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer main pipe
Water plant wastes to sanitary sewer	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer pipe	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer main pipe
Well house floor drains to sewers	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer pipe	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer main pipe
Well house floor drains to surface	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer pipe	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer main pipe
Land Disposal of Treated Wastes		
Irrigation of wastewater	200	400
Land application of solid wastes ³	200	400
Other		
Private sewage disposal systems and onsite treatment systems – open portion of treatment system ⁴	200	400
Private sewage disposal systems and onsite treatment systems – closed portion of treatment system ⁴	100	200
Lagoons	400	1000
Mechanical wastewater treatment plants	200	400
CHEMICALS:		
Chemical application to ground surface	100	200
Chemical & mineral storage above ground ^{5,6}	100	200

SOURCE OF CONTAMINATION	REQUIRED MINIMUM LATERAL DISTANCE FROM WELL AS HORIZONTAL ON THE GROUND SURFACE, IN FEET	
	Deep Well ¹	Shallow Well ¹
Chemical & mineral storage on or under ground	200	400
Transmission pipelines (such as fertilizer, liquid petroleum, or anhydrous ammonia)	200	400
ANIMALS:		
Animal pasturage	50	50
Animal enclosure	200	400
Earthen silage storage trench or pit	100	200
Animal Wastes		
Land application of liquid or slurry	200	400
Land application of solids	200	400
Solids stockpile	200	400
Storage basin or lagoon	400	1000
Storage tank	200	400
MISCELLANEOUS:		
Basements, pits, sumps	10	10
Cemeteries	200	200
Cisterns	50	100
Flowing streams or other surface water bodies	50	50
GHEX loop boreholes	200	200
Railroads	100	200
Private wells	200	400
Solid waste landfills and disposal sites ⁷	1000	1000

¹Deep and shallow wells, as defined in 567—40.2(455B): A deep well is a well located and constructed in such a manner that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn. A shallow well is a well located and constructed in such a manner that there is not a continuous layer of low permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

²The separation distances are dependent upon two factors: the type of piping that is in the existing sewer or drain, as noted in the table, and that the piping was properly installed in accordance with the standards.

³Solid wastes are those derived from the treatment of water or wastewater. Certain types of solid wastes from water treatment processes may be land-applied within the separation distance on an individual, case-by-case basis.

⁴Private sewage disposal system is defined in 567—subrule 69.1(2). “Onsite treatment system” includes any wastewater treatment system not included in the definition of a private sewage disposal system that is utilizing onsite wastewater treatment technologies to treat domestic waste, such as those specified in 567—Chapter 69 (but excluding waste stabilization ponds). Open portions of treatment systems include subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands, open bottom media filters, and waste stabilization ponds. Closed portions of treatment systems include septic tanks, aerobic treatment units, fully contained media filters and impervious vault toilets. These separation distances also apply to septic systems that are not considered privately owned.

⁵The minimum separation distance for liquid fuel storage associated with standby power generators shall be 50 feet if secondary containment is provided. Secondary containment shall provide for a minimum of 110 percent of the liquid fuel storage capacity. Double-walled storage tanks shall not be considered as secondary containment. The separation distance for liquefied petroleum gas (LPG) storage shall be 15 feet.

⁶Electrical power transformers mounted on a single utility pole are exempt from the minimum separation distance requirements.

⁷Solid waste means garbage, refuse, rubbish, and other similar discarded solid or semisolid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities.

43.3(8) *Drinking water system components.* Any drinking water system component which comes into contact with raw, partially treated, or finished water must be suitable for the intended use in a potable water system. The component must be certified by an American National Standards Institute (ANSI) accredited third party for conformance with American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 61 specifications, if such specification exists for the particular product, unless approved components are not reasonably available for use, in accordance with guidance provided by the department. If the component does not meet the ANSI/NSF Standard 61 specifications or no specification is available, the person seeking to supply or use the component must prove to the satisfaction of the department that the component is not toxic or otherwise a potential hazard in a potable public water supply system.

43.3(9) *Water treatment filter media material.* For single media filters, grain sizes up to 0.8 mm effective size may be approved for filters designed to remove constituents other than those contained in the primary drinking water standards. Pilot or full-scale studies demonstrating satisfactory treatment efficiency and operation with the proposed media will be required prior to issuing any construction permits which allow filter media sizes greater than 0.55 mm.

43.3(10) *Best available treatment technology.*

a. BATs for organic compounds. The department identifies as indicated in the table below either granular activated carbon (GAC), packed tower aeration (PTA), or oxidation (OXID) as the best available technology, treatment technique, or other means available for achieving compliance with the maximum contaminant level for organic contaminants identified in 567—paragraph 41.5(1)“b.” For the purposes of setting MCLs for synthetic organic chemicals, any BAT must be at least as effective as granular activated carbon.

ORGANIC CONTAMINANT	GAC	PTA	OXID
Alachlor	x		
Aldicarb	x		
Aldicarb sulfone	x		
Aldicarb sulfoxide	x		
Atrazine	x		
Benzene	x	x	
Benzo(a)pyrene	x		
Carbofuran	x		
Carbon tetrachloride	x	x	
Chlordane	x		
2,4-D	x		
Dalapon	x		
Dibromochloropropane (DBCP)	x	x	
o-Dichlorobenzene	x	x	
p-Dichlorobenzene	x	x	
1,2-Dichloroethane	x	x	
cis-1,2-Dichloroethylene	x	x	
trans-1,2-Dichloroethylene	x	x	
1,1-Dichloroethylene	x	x	
Dichloromethane		x	
1,2-Dichloropropane	x	x	
Di(2-ethylhexyl)adipate	x	x	
Di(2-ethylhexyl)phthalate	x		
Dinoseb	x		
Diquat	x		
Endothall	x		
Endrin	x		
Ethylene dibromide (EDB)	x	x	
Ethylbenzene	x	x	
Glyphosate			x

ORGANIC CONTAMINANT	GAC	PTA	OXID
Heptachlor	x		
Heptachlor epoxide	x		
Hexachlorobenzene	x		
Hexachlorocyclopentadiene	x	x	
Lindane	x		
Methoxychlor	x		
Monochlorobenzene	x	x	
Oxamyl (Vydate)	x		
Pentachlorophenol	x		
Picloram	x		
Polychlorinated biphenyls (PCB)	x		
Simazine	x		
Styrene	x	x	
2,4,5-TP (Silvex)	x		
Tetrachloroethylene	x	x	
1,2,4-Trichlorobenzene	x	x	
1,1,1-Trichloroethane	x	x	
1,1,2-Trichloroethane	x	x	
Trichloroethylene	x	x	
2,3,7,8-TCDD (Dioxin)	x		
Toluene	x	x	
Toxaphene	x		
Vinyl chloride		x	
Xylene	x	x	

b. BATs for inorganic compounds and radionuclides.

(1) Inorganic compounds. The department identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the inorganic contaminants listed in 567—paragraph 41.3(1) “b,” except fluoride.

INORGANIC CHEMICAL	BAT(s)
Antimony	2, 7
Arsenic ^d	1, 2, 5, 6, 7, 9, 11 ^e
Asbestos	2, 3, 8
Barium	5, 6, 7, 9
Beryllium	1, 2, 5, 6, 7
Cadmium	2, 5, 6, 7
Chromium	2, 5, 6 ^b , 7
Cyanide	5, 7, 12
Mercury	2 ^a , 4, 6 ^a , 7 ^a
Nickel	5, 6, 7
Nitrate	5, 7, 9
Nitrite	5, 7
Selenium	1, 2 ^c , 6, 7, 9
Thallium	1, 5

Key to BATs

1=Activated Alumina	5=Ion Exchange	9=Electrodialysis
2=Coagulation/Filtration*	6=Lime Softening*	10=Chlorine
3=Direct and Diatomite Filtration	7=Reverse Osmosis	11=Oxidation/Filtration
4=Granular Activated Carbon	8=Corrosion Control	12=Alkaline Chlorination (pH greater than or equal to 8.5)

*not BAT for systems with less than 500 service connections

^aBAT only if influent Hg concentrations are less than or equal to 10 micrograms/liter.

^bBAT for Chromium III only.

^cBAT for Selenium IV only.

^dBAT for Arsenic V. Preoxidation may be required to convert Arsenic III to Arsenic V.

^eTo obtain high removals, iron to arsenic ratio must be at least 20:1.

(2) Small system compliance technologies for arsenic. The department identifies in the following table the affordable technology, treatment techniques, or other means available to systems serving 10,000 or fewer persons for achieving compliance with the arsenic maximum contaminant level.

SMALL SYSTEM COMPLIANCE TECHNOLOGIES FOR ARSENIC¹

Technology	Affordable for listed small system categories ²
Activated alumina	All size categories
Coagulation/filtration ³	501 – 3,300 and 3,301 – 10,000
Coagulation-assisted microfiltration	501 – 3,300 and 3,301 – 10,000
Electrodialysis reversal ⁴	501 – 3,300 and 3,301 – 10,000
Enhanced coagulation/filtration	All size categories
Enhanced lime softening (pH > 10.5)	All size categories
Ion exchange	All size categories
Lime softening ³	501 – 3,300 and 3,301 – 10,000
Oxidation/filtration ⁵	All size categories
Reverse osmosis ⁴	501 – 3,300 and 3,301 – 10,000

¹Technologies are for Arsenic V. Preoxidation may be required to convert Arsenic III to Arsenic V.

²There are three categories of small systems: those serving 25 to 500 people, those serving 501 to 3,300 people, and those serving 3,301 to 10,000 people.

³Unlikely to be installed solely for arsenic removal. May require pH adjustment to optimal range if high removals are needed.

⁴Technologies reject a large volume of water. May not be appropriate for areas where water quantity may be an issue.

⁵To obtain high removals, iron to arsenic ratio must be at least 20:1.

(3) Radionuclides.

1. The department identifies in the following table the best available technology for achieving compliance with the radionuclide maximum contaminant levels as indicated.

RADIONUCLIDE BAT

Contaminant	Best Available Technology
Gross alpha particle activity (excluding radon and uranium)	Reverse osmosis
Beta particle and photon radioactivity	Ion exchange, reverse osmosis
Combined radium-226 and radium-228	Ion exchange, reverse osmosis, lime softening
Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration

2. Small system compliance technologies. The following technologies are identified as radionuclide BAT for systems serving 10,000 or fewer people.

RADIONUCLIDES SMALL SYSTEM COMPLIANCE TECHNOLOGIES

Contaminant	Compliance Technology ^a
Gross alpha particle activity	2
Beta particle and photon radioactivity	1, 2
Combined radium-226 and radium-228	1, 2, 3, 4, 5, 6, 7
Uranium	1, 2 ^b , 3 ^b , 8, 9

^aCompliance technologies are listed with their corresponding number and potential limitations for use, as follows:

1: Ion exchange. The regeneration solution contains high concentrations of the contaminant ions. Disposal options should be carefully considered before choosing this technology.

2: Reverse osmosis. Reject water disposal options should be carefully considered before choosing this technology.

3: Lime softening. The complexity of the water chemistry may make this technology too complex for small systems.

- 4: Green sand filtration. Removal efficiencies can vary depending on water quality.
- 5: Coprecipitation with barium sulfate. This technology has limited applications to small systems, and is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.
- 6: Electrodialysis/electrodialysis reversal.
- 7: Pre-formed hydrous manganese oxide filtration. This technology is most applicable to small systems that have existing filtration technology.
- 8: Activated alumina. The regeneration solution contains high concentrations of the contaminant ions. Disposal options should be carefully considered before choosing this technology. Handling of chemicals required during regeneration and pH adjustment requires an adequately trained operator.
- 9: Enhanced coagulation/filtration. This technology assumes that it is a modification to an existing coagulation/filtration process.
- ^bNot recommended for systems serving 25 to 500 persons.

c. BATs for disinfection byproducts and disinfectants. The department identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the disinfection byproducts listed in 567—paragraph 41.5(2) “b,” and the maximum residual disinfectant levels listed in 567—paragraph 41.5(2) “c.”

DBP MCL or MRDL	Best Available Technology
Bromate MCL	Control of ozone treatment process to reduce production of bromate
Chlorite MCL	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels
HAA5 and TTHM MCL running annual average	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant
HAA5 and TTHM MCL LRAA	• Non-consecutive system: Enhanced coagulation or enhanced softening, plus GAC10; or nanofiltration with a molecular weight cutoff that is less than or equal to 1000 Daltons; or GAC20 • Consecutive system serving at least 10,000 persons*: Improved distribution system and storage tank management to reduce residence time, plus the use of chloramines for disinfectant residual maintenance • Consecutive system serving fewer than 10,000 persons*: Improved distribution system and storage tank management to reduce residence time
MRDL	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels

* Applies only to the disinfected water that consecutive systems buy or otherwise receive.

d. Requirement to install BAT. The department shall require community water systems and nontransient noncommunity water systems to install and use any treatment method identified in 43.3(10) as a condition for granting an interim contaminant level except as provided in paragraph “e.” If, after the system’s installation of the treatment method, the system cannot meet the maximum contaminant level, the system shall be eligible for a compliance schedule with an interim contaminant level granted under the provisions of 567—subrule 42.1(9) and rule 567—43.2(455B).

e. Engineering assessment option. If a system can demonstrate through comprehensive engineering assessments, which may at the direction of the department include pilot plant studies, that the treatment methods identified in 43.3(10) would only achieve a de minimis reduction in contaminants, the department may issue a schedule of compliance that requires the system being granted the variance to examine other treatment methods as a condition of obtaining the interim contaminant level.

f. Compliance schedule. If the department determines that a treatment method identified in 43.3(10) “a,” “b,” and “c” is technically feasible, the department may require the system to install or use that treatment method in connection with a compliance schedule issued under the provisions of 567—subrule 42.1(9) and rule 567—43.2(455B). The determination shall be based upon studies by the system and other relevant information.

g. Avoidance of unacceptable risk to health (URTH). The department may require a public water system to use bottled water, point-of-use devices, point-of-entry devices or other means as a condition of granting a variance or an exemption, or issuance of a compliance schedule, from the requirements of 43.3(10) to avoid an unreasonable risk to health.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18; ARC 6190C, IAB 2/9/22, effective 3/16/22]

567—43.4(455B) Certification of completion. Within 30 days after completion of construction, installation or modification of any project, the permit holder shall submit a certification by a licensed professional engineer that the project was completed in accordance with the approved plans and specifications except if the project received a waiver pursuant to 43.3(4).

567—43.5(455B) Filtration and disinfection for surface water and influenced groundwater public water supply systems.

43.5(1) Applicability/general requirements.

a. These rules apply to all public water supply systems using surface water or groundwater under the direct influence of surface water, in whole or in part, and establish criteria under which filtration is required as a treatment technique. In addition, these rules establish treatment technique requirements in lieu of maximum contaminant levels for *Giardia lamblia*, heterotrophic plate count bacteria, *Legionella*, viruses and turbidity. Each public water system with a surface water source or a groundwater source under the direct influence of surface water must provide treatment of that source water which complies with these treatment technique requirements. Systems which serve at least 10,000 persons must also comply with the requirements of 567—43.9(455B). Systems which serve fewer than 10,000 persons must also comply with the requirements of 567—43.10(455B). The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(1) At least 99.9 percent (3-log) removal or inactivation of *Giardia lamblia* cysts between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer; and

(2) At least 99.99 percent (4-log) removal or inactivation of viruses between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer.

b. Criteria for identification of groundwater under the direct influence of surface water. “Groundwater under the direct influence of surface water” means any water beneath the surface of the ground with: (1) significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia*, or (2) significant and relatively rapid shifts in water characteristics such as turbidity (particulate content), temperature, conductivity, or pH which closely correlate to climatological or surface water conditions. Direct influence must be determined for individual sources in accordance with criteria established by the department. The department determination of direct influence may be based on site-specific measurements of water quality or documentation of well construction characteristics and geology with field evaluation. Only surface water and groundwater sources under the direct influence of surface water that are at risk to the contamination from *Giardia* cysts are subject to the requirements of this rule. Groundwater sources shall not be subject to this rule. The evaluation process shall be used to delineate between surface water, groundwater under the direct influence of surface water and groundwater. The identification of a source as surface water and groundwater under the direct influence of surface water shall be determined for an individual source, by the department, in accordance with the following criteria. The public water supply shall provide to the department that information necessary to make the determination. The evaluation process will involve one or more of the following steps:

(1) Preliminary evaluation. The department shall conduct a preliminary evaluation of information on the source provided by the public water supply to determine if the source is an obvious surface water (e.g., pond, lake, stream) or groundwater under the direct influence of surface water. The source shall be evaluated during that period of highest susceptibility to influence from surface water. The preliminary evaluation may include a review of surveys, reports, geological information of the area, physical properties of the source, and a review of departmental and public water system records. If the source is identified as a surface water, no additional evaluation shall be conducted. If the source is a groundwater and identified as a deep well, it shall be classified as a groundwater not under the direct influence of surface water and no additional evaluation shall be conducted, unless through direct knowledge or documentation the source does not meet the requirements of 43.5(1) “b”(2). The deep well shall then be evaluated in accordance with 43.5(1) “b”(3). If the source is a shallow well, the source shall be evaluated in accordance with 43.5(1) “b”(2). If the source is a spring, infiltration gallery, radial collector well, or any other subsurface source, it shall be evaluated in accordance with 43.5(1) “b”(3).

(2) Well source evaluation. Shallow wells greater than 50 feet in lateral distance from a surface water source shall be evaluated for direct influence of surface water through a review of departmental or public water system files in accordance with 43.5(1)“b”(2)“1” and 43.5(1)“b”(2)“2.” Sources that meet the criteria shall be considered to be not under the direct influence of surface water. No additional evaluation will be required. Shallow wells 50 feet or less in lateral distance from a surface water shall be in accordance with 43.5(1)“b”(3) and (4).

1. Well construction criteria. The well shall be constructed so as to prevent surface water from entering the well or traversing the casing.

2. Water quality criteria. Water quality records shall indicate:

- No record of total coliform or fecal coliform contamination in untreated samples collected over the past three years.

- No history of turbidity problems associated with the well, other than turbidity as a result of inorganic chemical precipitates.

- No history of known or suspected outbreak of *Giardia* or other pathogenic organisms associated with surface water (e.g., *Cryptosporidium*) which has been attributed to the well.

3. Other available data. If data on particulate matter analysis of the well are available, there shall be no evidence of particulate matter present that is associated with surface water. If information on turbidity or temperature monitoring of the well and nearby surface water is available, there shall be no data on the source which correlates with that of a nearby surface water.

4. Further evaluation. Wells that do not meet all the requirements listed shall require further evaluation in accordance with 43.5(1)“b”(3) and (4).

(3) Formal evaluation. The evaluation shall be conducted by the department or a licensed professional engineer at the direction of the public water supply. The evaluation shall include:

1. Complete file review. In addition to the information gathered in 43.5(1)“b”(1), the complete file review shall consider but not be limited to: design and construction details; evidence of direct surface water contamination; water quality analysis; indications of waterborne disease outbreaks; operational procedures; and customer complaints regarding water quality or water-related infectious illness. Sources other than a well source shall be evaluated in a like manner to include a field survey.

2. Field survey. A field survey shall substantiate findings of the complete file review and determine if the source is at risk to pathogens from direct surface water influence. The field survey shall examine the following criteria for evidence that surface water enters the source through defects in the source which include but are not limited to: a lack of a surface seal on wells, infiltration gallery laterals exposed to surface water, springs open to the atmosphere, surface runoff entering a spring or other collector, and distances to obvious surface water sources.

A report summarizing the findings of the complete file review and field survey shall be submitted to the department for final review and classification of the source. If the complete file review or field survey demonstrates conclusively that the source is subject to the direct surface water influence, the source shall be classified as under the direct influence of surface water. Either method or both may be used to demonstrate that the source is a surface water or groundwater under the direct influence of surface water. If the findings do not demonstrate conclusive evidence of direct influence of surface water, the analysis outlined in 43.5(1)“b”(4) should be conducted.

(4) Particulate analysis and physical properties evaluation.

1. Surface water indicators. Particulate analysis shall be conducted to identify organisms which only occur in surface waters as opposed to groundwaters, and whose presence in a groundwater would indicate the direct influence of surface water.

- Identification of a *Giardia* cyst, live diatoms, and blue-green, green, or other chloroplast containing algae in any source water shall be considered evidence of direct surface water influence.

- Rotifers and insect parts are indicators of surface water. Without knowledge of which species is present, the finding of rotifers indicates that the source is either directly influenced by surface water, or the water contains organic matter sufficient to support the growth of rotifers. Insects or insect parts shall be considered strong evidence of surface water influence, if not direct evidence.

- The presence of coccidia (e.g., *Cryptosporidium*) in the source water is considered a good indicator of direct influence of surface water. Other macroorganisms (greater than 7 μm) which are parasitic to animals and fish such as, but not limited to, helminths (e.g., tapeworm cysts), ascaris, and *Diphyllobothrium*, shall be considered as indicators of direct influence of surface water.

2. Physical properties. Turbidity, temperature, pH and conductivity provide supportive, but less direct, evidence of direct influence of surface water. Turbidity fluctuations of greater than 0.5-1.0 NTU over the course of a year may be indicative of direct influence of surface water. Temperature fluctuations may also indicate surface water influence. Changes in other chemical parameters such as pH, conductivity, or hardness may also give an indirect indication of influence by nearby surface water.

c. Compliance. A public water system using a surface water source or a groundwater source under the direct influence of surface water is considered to be in compliance with the requirements of this subrule if it meets the filtration requirements in 43.5(3) and the disinfection requirements in 43.5(2) in accordance with the effective dates specified within the respective subrules.

d. Certified operator requirement. Each public water system using a surface water source or a groundwater source under the direct influence of surface water must be operated by a certified operator who meets the requirements of 567—Chapter 81.

43.5(2) Disinfection. All community and noncommunity public water supply systems using surface water or groundwater under the direct influence of surface water in whole or in part shall be required to provide disinfection in compliance with this subrule and filtration in compliance with 43.5(3). If the department has determined that filtration is required, the system must comply with any interim disinfection requirements the department deems necessary before filtration is installed. A system providing filtration on or before December 30, 1991, must meet the disinfection requirements of this subrule beginning June 29, 1993. A system providing filtration after December 30, 1991, must meet the disinfection requirements of this subrule when filtration is installed. Failure to meet any requirement of this subrule after the applicable date specified in this subrule is a treatment technique violation. The disinfection requirements are as follows:

a. *Disinfection treatment criteria.* The disinfection treatment must be sufficient to ensure that the total treatment processes of that system achieve at least 99.9 percent (3-log) inactivation or removal of *Giardia lamblia* cysts and at least 99.99 percent (4-log) inactivation or removal of viruses, acceptable to the department. At least 0.5 log inactivation of *Giardia lamblia* cysts must be achieved through disinfection treatment using a chemical disinfectant even if the required inactivation or removal is met or exceeded through physical treatment processes. Each system is required to calculate the total inactivation ratio ($\text{CT}_{\text{calculated}}/\text{CT}_{\text{required}}$) each day the treatment plant is in operation. The system's total inactivation ratio must be equal to or greater than 1.0 in order to ensure that the minimum inactivation and removal requirements have been achieved. If the system's total inactivation ratio for the day is below 1.0, the system must notify the department within 24 hours.

b. *Disinfection system.* The disinfection system must include:

(1) Redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system, or

(2) Automatic shutoff of delivery of water to the distribution system whenever there is less than 0.3 mg/L of residual disinfectant concentration in the water. If the department determines that automatic shutoff would cause unreasonable risk to health or interfere with fire protection, the system must comply with 43.5(2) "b"(1).

c. *Residual disinfectant entering system.* The residual disinfectant concentration in the water entering the distribution system, measured as specified in 43.5(4) "a"(5) and 43.5(4) "b"(2), cannot be less than 0.3 mg/L free residual or 1.5 mg/L total residual chlorine for more than four hours.

d. *Residual disinfectant in the system.* The residual disinfectant concentration in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in 43.5(4) "a"(5) and 43.5(4) "b"(2), cannot be undetectable in more than 5 percent of the samples each month for any two consecutive months that the system serves water to the public. Water within the distribution system with a heterotrophic plate count bacteria concentration less than or equal to 500/mL, measured as heterotrophic

plate count (HPC) as specified in 567—paragraph 41.2(3) “e,” is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Therefore, the value “V” in the following formula cannot exceed 5 percent in one month for any two consecutive months.

$$V = \left[\frac{c + d + e}{a + b} \right] \times 100$$

where:

- a = number of instances in which the residual disinfectant concentration is measured;
- b = number of instances in which the residual disinfectant concentration is not measured but heterotrophic plate count bacteria (HPC) is measured;
- c = number of instances in which the residual disinfectant concentration is measured but not detected and no HPC is measured;
- d = number of instances in which no residual disinfectant concentration is detected and where the HPC is greater than 500/mL; and
- e = number of instances in which the residual disinfectant concentration is not measured and HPC is greater than 500/mL.

43.5(3) Filtration.

a. Applicability. A public water system that uses a surface water source or a groundwater source under the direct influence of surface water must provide treatment consisting of both disinfection, as specified in 43.5(2), and filtration treatment which complies with the turbidity requirements of subrules 43.5(3), 43.5(4), and 43.5(5). A system providing or required to provide filtration on or before December 30, 1991, must meet the requirements of this subrule by June 29, 1993. A system providing or required to provide filtration after December 30, 1991, must meet the requirements of this subrule when filtration is installed. Beginning January 1, 2002, systems serving at least 10,000 people must meet the turbidity requirements in 567—43.9(455B). Beginning January 1, 2005, systems serving fewer than 10,000 people must meet the turbidity requirements in 567—43.10(455B). A system shall install filtration within 18 months after the department determines, in writing, that filtration is required. The department may require and the system shall comply with any interim turbidity requirements the department deems necessary. Failure to meet any requirements of the referenced subrules after the dates specified is a treatment technique violation.

b. Conventional filtration treatment or direct filtration.

(1) For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system’s filtered water must be less than or equal to 0.5 nephelometric turbidity units (NTU) in at least 95 percent of the measurements taken each month when measured as specified in 43.5(4) “a”(1) and 43.5(4) “b”(1).

(2) The turbidity level of representative samples of a system’s filtered water must at no time exceed 5 NTU when measured as specified in 43.5(4) “a”(1) and 43.5(4) “b”(1).

c. Slow sand filtration.

(1) For systems using slow sand filtration, the turbidity level of representative samples of a system’s filtered water must be less than or equal to 1 NTU in at least 95 percent of the measurements taken each month when measured as specified in 43.5(4) “a”(1) and 43.5(4) “b”(1).

(2) The turbidity level of representative samples of a system’s filtered water must at no time exceed 5 NTU when measured as specified in 43.5(4) “a”(1) and 43.5(4) “b”(1).

d. Diatomaceous earth filtration.

(1) For systems using diatomaceous earth filtration, the turbidity level of representative samples of a system’s filtered water must be less than or equal to 1 NTU in at least 95 percent of the measurements taken each month when measured as specified in 43.5(4) “a”(1) and 43.5(4) “b”(1).

(2) The turbidity level of representative samples of a system’s filtered water must at no time exceed 5 NTU when measured as specified in 43.5(4) “a”(1) and 43.5(4) “b”(1).

e. Other filtration technologies. A public water system may use either a filtration technology not listed in 43.5(3) “b” to 43.5(3) “d” or a filtration technology listed in 43.5(3) “b” or 43.5(3) “c” at a higher turbidity level if it demonstrates to the department through a preliminary report submitted by a licensed professional engineer, using pilot plant studies or other means, that the alternative filtration technology in combination with disinfection treatment that meets the requirements of 43.5(2) consistently achieves 99.9 percent removal or inactivation of *Giardia lamblia* and 99.99 percent removal or inactivation of viruses. For a system that uses alternative filtration technology and makes this demonstration, the turbidity treatment technique requirements are as follows:

(1) The turbidity level of representative samples of a system’s filtered water must be less than or equal to 1 NTU in at least 95 percent of the measurements taken each month when measured as specified in 43.5(4) “a”(1) and 43.5(4) “b”(1).

(2) The turbidity level of representative samples of a system’s filtered water must at no time exceed 5 NTU when measured as specified in 43.5(4) “a”(1) and 43.5(4) “b”(1).

Beginning January 1, 2002, systems serving at least 10,000 people must meet the requirements for other filtration technologies in 43.9(3) “b.”

Beginning January 1, 2005, systems serving fewer than 10,000 people must meet the requirements for other filtration technologies in 567—43.10(455B).

43.5(4) Analytical and monitoring requirements.

a. Analytical requirements. Only the analytical method(s) specified in this paragraph, or otherwise approved by the department, may be used to demonstrate compliance with the requirements of 43.5(2) and 43.5(3). Measurements for pH, temperature, turbidity, and residual disinfectant concentrations must be conducted by a Grade II, III or IV operator meeting the requirements of 567—Chapter 81, any person under the supervision of a Grade II, III or IV operator meeting the requirements of 567—Chapter 81, or a laboratory certified by the department to perform analysis under 567—Chapter 83. For consecutive public water supplies from a surface water or groundwater under the direct influence of surface water system, the disinfectant concentration analyses must be conducted by a certified operator who meets the requirements of 567—Chapter 81. Measurements for heterotrophic plate count bacteria must be conducted by a laboratory certified by the department to do such analysis.

(1) Turbidity analytical methodology. Turbidity analysis shall be conducted using the methodology in the following table. Each turbidimeter must be calibrated at least once every 90 days with a primary standard. The calibration of each turbidimeter used for compliance must be verified at least once per week with a primary standard, secondary standards, or the manufacturer’s proprietary calibration confirmation device or by a method approved by the department. If the verification is not within plus or minus 0.05 NTU for measurements of less than or equal to 0.5 NTU, or within plus or minus 10 percent of measurements greater than 0.5 NTU, the turbidimeter must be recalibrated.

Methodology	Analytical Method				
	EPA	SM	GLI	HACH	Other
Nephelometric ⁵	180.1 ¹	2130B ²	Method 2 ³	FilterTrak 10133 ⁴	
Laser Nephelometry (online)					Mitchell M5271 ⁶ ; Mitchell M5331 Rev. 1.2 ¹⁰
LED Nephelometry (online)					Mitchell M5331 ⁷ ; Mitchell M5331 Rev. 1.2 ¹⁰ ; AMI Turbiwell ⁹
LED Nephelometry (portable)					Orion AQ4500 ⁸
360-degree Nephelometry					Hach Method 10258 ¹¹

¹“Methods for the Determination of Inorganic Substances in Environmental Samples,” EPA-600/R-93-100, August 1993. Available at NTIS, PB94-121811.

²Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992, 19th edition, 1995, 20th edition, 1998, 21st edition, 2005, and 22nd edition, 2012 (any of these editions may be used), American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

³GLI Method 2, "Turbidity," November 2, 1992, Great Lakes Instruments, Inc., 8855 North 55th Street, Milwaukee, WI 53223.

⁴Hach FilterTrak Method 10133, "Determination of Turbidity by Laser Nephelometry," January 2000, Revision 2.0, Hach Co., P.O. Box 389, Loveland, CO 80539-0389, telephone (800)227-4224.

⁵Styrene divinyl benzene beads (e.g., AMCO-AEPA-1 or equivalent) and stabilized formazin (e.g., Hach StablCal™ or equivalent) are acceptable substitutes for formazin.

⁶Mitchell Method M5271, Revision 1.1. "Determination of Turbidity by Laser Nephelometry," March 5, 2009. Available at www.nemi.gov or from Leck Mitchell, 656 Independence Valley Drive, Grand Junction, CO 81507.

⁷Mitchell Method M5331, Revision 1.1. "Determination of Turbidity by LED Nephelometry," March 5, 2009. Available at www.nemi.gov or from Leck Mitchell, 656 Independence Valley Drive, Grand Junction, CO 81507.

⁸Orion Method AQ4500, Revision 1.0. "Determination of Turbidity by LED Nephelometry," May 8, 2009. Available at www.nemi.gov or from Thermo Scientific, 166 Cummings Center, Beverly, MA 01915, www.thermo.com.

⁹AMI Turbiwell, "Continuous Measurement of Turbidity Using a SWAN AMI Turbiwell Turbidimeter," August 2009. Available at www.nemi.gov or from Markus Bernasconi, SWAN Analytische Instrumente AG, Studbachstrasse 13, CH-8340 Hinwil, Switzerland.

¹⁰Mitchell Method M5331, Revision 1.2. "Determination of Turbidity by LED or Laser Nephelometry," February 2016. Available from Leck Mitchell, 656 Independence Valley Drive, Grand Junction, CO 81507.

¹¹Hach Company. "Hach Method 10258 – Determination of Turbidity by 360-Degree Nephelometry," January 2016. Available at www.hach.com.

(2) Temperature analytical methodology. The temperature shall be determined in compliance with the methodology listed in 567—subparagraph 41.4(1)“g”(1).

(3) pH (hydrogen ion concentration) analytical methodology. The pH shall be determined in compliance with the methodology listed in 567—subparagraph 41.4(1)“g”(1).

(4) Heterotrophic plate count bacteria analytical methodology. The heterotrophic plate count bacteria sampling and analysis shall be conducted in compliance with 567—subrule 41.2(3) and 43.5(2)“d.” The time from sample collection to initiation of analysis shall not exceed eight hours, and the samples must be held below 10 degrees C during transit.

(5) Residual disinfectant analytical methodology. The residual disinfectant concentrations shall be determined in compliance with one of the analytical methods in the following table. Residual disinfectant concentrations for free chlorine and combined chlorine may also be measured by using DPD colorimetric test kits. Free and total chlorine residuals may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument provided the chemistry, accuracy and precision remain the same. Instruments used for continuous monitoring must be verified with a grab sample measurement at least every seven days. The analyzer concentration must be within plus or minus 0.1 mg/L or plus or minus 15 percent (whichever is larger) of the grab sample measurement. If the verification is not within this range, immediate actions must be taken to resolve the issue and another verification must be conducted.

Disinfectant Analytical Methodology

Residual	Methodology	Standard Methods ^{1,2}	Standard Methods Online ⁶	Other
Free chlorine	Amperometric Titration DPD Ferrous Titrimetric DPD Colorimetric Syringaldazine (FACTS) Online Chlorine Analyzer Amperometric Sensor Indophenol Colorimetric	4500-Cl D 4500-Cl F 4500-Cl G 4500-Cl H	4500-Cl D-00 4500-Cl F-00 4500-Cl G-00 4500-Cl H-00	D1253-03 ⁴ , 08, 14 Hach Method 10260 ¹⁰ EPA 334.0 ⁷ ChloroSense ⁸ Hach Method 10241 ¹¹
Total chlorine	Amperometric Titration Amperometric Titration (low-level measurement) DPD Ferrous Titrimetric DPD Colorimetric Iodometric Electrode Online Chlorine Analyzer Amperometric Sensor	4500-Cl D 4500-Cl E 4500-Cl F 4500-Cl G 4500-Cl I	4500-Cl D-00 4500-Cl E-00 4500-Cl F-00 4500-Cl G-00 4500-Cl I-00	D1253-03 ⁴ , 08, 14 Hach Method 10260 ¹⁰ EPA 334.0 ⁷ ChloroSense ⁸
Chlorine dioxide	Amperometric Titration DPD Method Amperometric Titration Amperometric Sensor Spectrophotometric	4500-ClO ₂ C 4500-ClO ₂ D 4500-ClO ₂ E	4500-ClO ₂ C-00 4500-ClO ₂ E-00	 ChlordioX Plus ⁹ 327.0, Revision 1.1 ⁵
Ozone	Indigo method	4500-O ₃ B ³	4500-O ₃ B-97	

¹Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992, 19th edition, 1995, 20th edition, 1998, 21st edition, 2005, or 22nd edition, 2012 (any of these editions may be used), American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710. Only the 18th, 19th, and 20th editions may be used for chlorine dioxide Method 4500-ClO₂ D.

²Other analytical test procedures are contained within Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994, which is available as NTIS PB95-104766.

³Standard Methods for the Examination of Water and Wastewater, 18th edition (1992), 19th edition (1995), 21st edition (2005), and 22nd edition (2012) (any edition may be used); American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710.

⁴Annual Book of ASTM Standards, Vol. 11.01, 2004; ASTM International; any year containing the cited version of the method may be used. Copies of this method may be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

⁵EPA Method 327.0, Revision 1.1, "Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry," US EPA, May 2005, EPA 815-R-05-008. Available online at www.nemi.gov.

⁶Standard Methods Online is available at www.standardmethods.org. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

⁷EPA Method 334.0, "Determination of Residual Chlorine in Drinking Water Using an On-Line Chlorine Analyzer," August 2009. EPA 815-B-09-013. Available at www.nemi.gov.

⁸ChloroSense, "Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense," September 2009. Available at www.nemi.gov or from Palintest Ltd., 21 Kenton Lands Road, P.O. Box 18395, Erlanger, KY 41018.

⁹ChlordioX Plus, "Chlorine Dioxide and Chlorite in Drinking Water by Amperometry Using Disposable Sensors," November 2013. Available from Palintest Ltd., Jamike Avenue (Suite 100), Erlanger, KY 41018.

¹⁰Hach Company, "Hach Method 10260 – Determination of Chlorinated Oxidants (Free and Total) in Water Using Disposable Planar Reagent-Filled Cuvettes and Mesofluidic Channel Colorimetry," April 2013. Available at www.hach.com.

¹¹Hach Company, "Hach Method 10241 – Spectrophotometric Measurement of Free Chlorine in Finished Drinking Water," November 2015, Revision 1.2. Available at www.hach.com.

b. Monitoring requirements. A public water system that uses a surface water source or groundwater source under the influence of surface water must monitor in accordance with this paragraph.

(1) Turbidity.

1. Routine turbidity monitoring requirements. Turbidity measurements as required by 43.5(3) must be performed on representative samples of the system's filtered water every four hours (or more frequently as long as measurements are recorded at equal time intervals and detailed in the turbidity protocol) that the system serves water to the public. A public water system may substitute continuous turbidity monitoring for grab sample monitoring or may monitor more frequently than every four hours if it validates the continuous measurement for accuracy on a regular basis using a turbidity protocol approved by the department and audited for compliance during sanitary surveys. Major elements of the protocol shall include, but are not limited to: sample measurement location, method of calibration, calibration frequency, calibration standards, method of verification, verification frequency, documentation, data collection, data recording frequency, and data reporting. For any systems using slow sand filtration or filtration treatment other than conventional treatment, direct filtration, or diatomaceous earth filtration, the department may reduce the sampling frequency to once per day if it determines that less frequent monitoring is sufficient to indicate effective filtration performance. For systems serving 500 or fewer persons, the department may reduce the turbidity sampling frequency to once per day, regardless of the type of filtration treatment used, if the department determines that less frequent monitoring is sufficient to indicate effective filtration performance. Approval shall be based upon documentation provided by the system, acceptable to the department and pursuant to the conditions of an operation permit.

2. Turbidity monitoring requirements for population greater than 100,000. A supplier of water serving a population or population equivalent of greater than 100,000 persons shall provide a continuous or rotating cycle turbidity monitoring and recording device or take hourly grab samples to determine compliance with 43.5(3). The system must meet the requirements in 43.5(4) "b"(1)"1," including the turbidity protocol.

3. Failure of the continuous turbidity monitoring equipment. If there is a failure in the continuous turbidity monitoring equipment, the system must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is repaired and back online. A system has a maximum of five working days after failure to repair the equipment or else the system is in violation. The system must notify

the department within 24 hours of both when the turbidimeter was taken offline and when it was returned online.

(2) Residual disinfectant.

1. Residual disinfectant entering the system. The residual disinfectant concentration of the water entering the distribution system shall be monitored continuously, and the lowest value recorded each day, except that if there is a failure in the continuous monitoring equipment, grab sampling every four hours may be conducted in lieu of continuous monitoring, but not to exceed five working days following the failure of the equipment. If acceptable to the department, systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequencies prescribed below:

Residual Disinfectant Samples Required of Surface Water or IGW PWS

System size (persons served)	Samples per day*
500 or fewer	1
501 to 1,000	2
1,001 to 2,500	3
2,501 to 3,300	4

*When more than one grab sample is required per day, the day's samples cannot be taken at the same time. The sampling intervals must be at a minimum of four-hour intervals.

If at any time the disinfectant concentration falls below 0.3 mg/L free residual or 1.5 mg/L total residual chlorine in a system using grab sampling in lieu of continuous monitoring, the system shall take a grab sample every four hours until the residual disinfectant concentration is equal to or greater than 0.3 mg/L free residual or 1.5 mg/L total residual chlorine.

2. Residual disinfectant in the system. The residual disinfectant concentration must be measured at least daily in the distribution system. Residual disinfectant measurements that are required as part of the total coliform bacteria sample collection under 567—subparagraph 41.2(1)“c”(7) shall be used to satisfy this requirement on the day(s) when a bacteria sample(s) is collected. The department may allow a public water system that uses both a groundwater source and a surface water source or a groundwater source under direct influence of surface water to take residual disinfectant samples at points other than the total coliform sampling points, if these points are included as a part of the coliform sample site plan meeting the requirements of 567—paragraph 41.2(1)“c”(1)“1” and if the department determines that such points are representative of treated (disinfected) water quality within the distribution system. Heterotrophic plate count bacteria (HPC) may be measured in lieu of residual disinfectant concentration, using the analytical methods specified in 567—subparagraph 41.2(3)“e”(1). The time from sample collection to initiation of analysis shall not exceed eight hours. HPC samples must be kept below 10 degrees C during transit to the laboratory. All HPC samples must be analyzed by a department-certified laboratory meeting the requirements of 567—Chapter 83.

43.5(5) Reporting requirements. Public water supplies shall report the results of routine monitoring required to demonstrate compliance with 567—43.5(455B) and treatment technique violations as follows:

a. *Waterborne disease outbreak.* Each system, upon discovering that a waterborne disease outbreak potentially attributable to that water system has occurred, must report that occurrence to the department as soon as possible, but no later than by the end of the next business day.

b. *Turbidity exceeds 5 NTU.* If at any time the turbidity exceeds 5 NTU, the system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under 567—subparagraph 42.1(3)“b”(3).

c. *Residual disinfectant entering distribution system below 0.3 mg/L free residual chlorine or 1.5 mg/L total residual chlorine.* If at any time the residual falls below 0.3 mg/L free residual chlorine or 1.5 mg/L total residual chlorine in the water entering the distribution system, the system must notify the department as soon as possible, but no later than by the end of the next business day. The system also must notify the department by the end of the next business day whether or not the residual was restored to at least 0.3 mg/L free residual chlorine or 1.5 mg/L total residual chlorine within four hours.

d. Routine monitoring reporting requirements. Routine monitoring results shall be provided as part of the monthly operation reports in accordance with 567—40.3(455B) and 567—subrule 42.4(3).

e. Total inactivation ratio below 1.0. If the system's total inactivation ratio for the day is below 1.0, the system must notify the department within 24 hours.

43.5(6) Filter backwash recycle provisions. All surface water or influenced groundwater systems that employ conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must meet the requirements of this subrule.

a. Reporting. A system must notify the department in writing by December 8, 2003, if the system recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification must include the following information at a minimum:

(1) A plan schematic showing the origin of all flows which are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport them, and the location where they are reintroduced back into the treatment plant.

(2) Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experience in the previous year (in gpm), design flow for the treatment plant (in gpm), the minimum plant rate (in gpm) during which the filter backwash will be recycled, and department-approved operating capacity for the plant where the department has made such determinations.

b. Treatment technique requirement. Any system that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of a system's existing conventional or direct filtration system as defined in 567—40.2(455B) or at an alternate location approved by the department by June 8, 2004. However, if capital improvements are required to modify the recycle location to meet this requirement, all capital improvements must be completed no later than June 8, 2006.

c. Record keeping. The system must collect and retain on file the recycle flow information specified below for review and evaluation by the department beginning June 8, 2004.

(1) A copy of the recycle notification and information submitted to the department under paragraph "a" of this subrule.

(2) A list of all recycle flows and the frequency with which they are returned.

(3) The average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(4) The typical filter run length and a written summary of how filter run length is determined.

(5) The type of treatment provided for the recycle flow.

(6) Data on the physical dimensions of the equalization and treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used including average dose and frequency of use, and frequency at which solids are removed, if applicable.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—43.6(455B) Residual disinfectant and disinfection byproduct precursors.

43.6(1) Residual disinfectant.

a. Applicability.

(1) CWS and NTNC systems. This rule establishes criteria under which CWS and NTNC public water supply systems that add a chemical disinfectant to the water in any part of the drinking water treatment process or that provide water that contains a chemical disinfectant must modify their practices to meet the MCLs listed in 567—41.6(455B), the maximum residual disinfectant levels (MRDL) listed in this subrule, and treatment technique requirements for disinfection byproduct precursors listed in subrule 43.6(3).

(2) TNC systems with chlorine dioxide disinfection. This rule establishes criteria under which TNC public water supply systems that use chlorine dioxide as a disinfectant or oxidant must modify their practices to meet the chlorine dioxide MRDL listed in paragraph 43.6(1) "b."

(3) Compliance dates. Compliance dates for this rule are based upon the source water type and the population served. Systems are required to comply with this rule as follows, unless otherwise noted:

1. Surface water and IGW CWS and NTNC. CWS and NTNC systems using surface water or groundwater under the direct influence of surface water (IGW) in whole or in part and which serve 10,000

or more persons must comply with this rule beginning January 1, 2002. CWS and NTNC surface water or IGW systems serving fewer than 10,000 persons must comply with this rule beginning January 1, 2004.

2. Groundwater CWS and NTNC. CWS and NTNC systems using only groundwater not under the direct influence of surface water must comply with this rule beginning January 1, 2004.

3. TNC using chlorine dioxide. TNC systems serving over 10,000 persons and using surface water or groundwater under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this rule beginning January 1, 2002. TNC systems serving 10,000 persons or less, regardless of source water type, and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this rule beginning January 1, 2004.

4. Extension of compliance period for GAC or membrane technology installation. A system that is installing GAC or membrane technology to comply with this rule may apply to the department for an extension of up to 24 months past the dates in 43.6(1)“a”(3), but not beyond December 31, 2003. In granting the extension, the department will set a schedule for compliance and may specify any interim measures the system must take. Failure to meet a compliance schedule or interim treatment requirements constitutes a violation of the public drinking water supply rules, requires public notification per 567—subrule 42.1(1), and may result in an administrative order.

(4) Control of residual disinfectants. Notwithstanding the MRDLs in this rule, systems may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in the distribution system to a level and for a time necessary to protect public health, to address specific microbiological contamination problems caused by circumstances such as, but not limited to, distribution line breaks, storm run-off events, source water contamination events, or cross-connection events.

(5) Consecutive systems. Consecutive systems that provide water containing a disinfectant or oxidant are required to comply with this rule.

(6) Systems with multiple water sources. Systems with water sources that are used independently from each other, are not from the same source as determined by the department, or do not go through identical treatment processes are required to conduct the monitoring for the applicable disinfectants or oxidants and disinfection byproducts during operation of each source. The system must comply with this rule during the use of each water source.

b. Maximum residual disinfectant levels. Maximum residual disinfectant levels (MRDLs) are as follows:

Disinfection Residual	MRDL (mg/L)
Chloramines	4.0 as Cl ₂
Chlorine	4.0 as Cl ₂
Chlorine dioxide	0.8 as ClO ₂

c. Monitoring requirements for residual disinfectants.

(1) General requirements.

1. Systems must take all samples during normal operating conditions. If the system does not use the disinfectant or oxidant on a daily basis, the system must conduct the required daily monitoring each day the disinfectant or oxidant is used, and any required monthly monitoring during those months in which the disinfectant or oxidant is used during any portion of the month.

2. Failure to monitor in accordance with the monitoring plan required under 43.6(1)“c”(1)“5” is a monitoring violation.

3. Failure to monitor is a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages and the system’s failure to monitor makes it impossible to determine compliance with MRDLs.

4. Systems may use only data collected under the provisions of this rule or of 567—41.6(455B) to qualify for reduced monitoring.

5. Systems required to monitor under the provisions of this rule or of 567—41.6(455B) must develop and implement a monitoring plan, in accordance with 567—paragraph 41.6(1)“c”(1)“6.”

(2) Chlorine and chloramines.

1. Routine monitoring. Community and nontransient noncommunity water systems that use chlorine or chloramines must measure the residual disinfectant level at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in 567—subrule 41.2(1). Surface water and groundwater under the direct influence of surface water systems may use the results of residual disinfectant concentration sampling conducted under 43.5(4) “b”(2)“2,” in lieu of taking separate samples.

2. Reduced monitoring. Chlorine and chloramine monitoring may not be reduced.

(3) Chlorine dioxide.

1. Routine monitoring. Any public water supply systems that use chlorine dioxide for disinfection or oxidation must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the system must take samples in the distribution system the following day at the locations required by 43.6(1) “c”(3)“2,” in addition to the sample required at the entrance to the distribution system.

2. Additional monitoring. On each day following a routine sample monitoring result that exceeds the MRDL, the system is required to take three chlorine dioxide distribution system samples.

- If chlorine dioxide or chloramines are used to maintain a residual disinfectant in the distribution system, or if chlorine is used to maintain a residual disinfectant in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the system must take three samples as close to the first customer as possible, at intervals of at least six hours.

- If chlorine is used to maintain a residual disinfectant in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (i.e., booster chlorination), the system must take one sample at each of the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

3. Reduced monitoring. Chlorine dioxide monitoring may not be reduced.

d. *Analytical requirements for residual disinfectants.*

(1) Analytical methods. Systems must measure residual disinfectant concentrations for free chlorine, combined chlorine (chloramines), and chlorine dioxide by the methods listed in the following table:

Approved Methods for Residual Disinfectant Compliance Monitoring

Methodology	Standard Methods	Other Method	Residual measured ¹			
			Free Chlorine	Combined Chlorine	Total Chlorine	Chlorine Dioxide
Amperometric Titration	4500-Cl D	ASTM: D 1253-86 (96), 03, 08, 14	X	X	X	
Low Level Amperometric Titration	4500-Cl E				X	
DPD Ferrous Titrimetric	4500-Cl F		X	X	X	
DPD Colorimetric	4500-Cl G	Hach Method 10260 ⁴	X	X	X	
Syringaldazine (FACTS)	4500-Cl H		X			
Amperometric Sensor		ChloroSense ³	X		X	
Online Chlorine Analyzer		EPA 334.0 ²	X		X	
Indophenol Colorimetric		Hach Method 10241 ⁶	X	X	X	
Iodometric Electrode	4500-Cl I				X	
DPD	4500-ClO ₂ D					X
Amperometric Method II	4500-ClO ₂ E					X
Lissamine Green Spectrophotometric		EPA: 327.0 Rev. 1.1				X
Amperometric Sensor		ChlordioX Plus ⁵				X

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register on February 16, 1999, in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA's Drinking Water Docket, 401 M Street, SW, Washington, DC 20460 (telephone: (202)260-3027); or at the Office of Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC 20408.

The following method is available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428:

Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 1996: Method D 1253-86.

The following methods are available from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710:

Standard Methods for the Examination of Water and Wastewater, 19th (1995), 20th (1998), 21st (2005), and 22nd (2012) editions, American Public Health Association: Methods: 4500-Cl D, 4500-Cl E, 4500-Cl F, 4500-Cl G, 4500-Cl H, 4500-Cl I, 4500-ClO₂ E. Only the 19th and 20th editions may be used for the chlorine dioxide Method 4500-ClO₂ D.

The following methods are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (telephone: (800)553-6847):

"Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry, Revision 1.1," USEPA, May 2005, EPA 815-R-05-008.

1X indicates method is approved for measuring specified residual disinfectant. Free chlorine or total chlorine may be measured for demonstrating compliance with the chlorine MRDL, and combined chlorine or total chlorine may be measured for demonstrating compliance with the chloramine MRDL.

²EPA Method 334.0, "Determination of Residual Chlorine in Drinking Water Using an On-Line Chlorine Analyzer," August 2009. EPA 815-B-09-013. Available at www.epa.gov/safewater/methods/analyticalmethods_ogwdw.html.

³ChloroSense, "Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense," September 2009. Available at www.nemi.gov or from Palintest Ltd., 21 Kenton Lands Road, P.O. Box 18395, Erlanger, KY 41018.

⁴Hach Method 10260, "Determination of Chlorinated Oxidants (Free and Total) in Water Using Disposable Planar Reagent-Filled Cuvettes and Mesofluidic Channel Colorimetry," April 2013. Available at Hach Company, P.O. Box 389, Loveland, CO 80539, or www.hach.com.

⁵ChlordioX Plus, "Chlorine Dioxide and Chlorite in Drinking Water by Amperometry Using Disposable Sensors," November 2013. Available from Palintest Ltd., Jamike Avenue (Suite 100), Erlanger, KY 41018.

⁶Hach Company, "Hach Method 10241 – Spectrophotometric Measurement of Free Chlorine in Finished Drinking Water," November 2015, Revision 1.2. Available at www.hach.com.

(2) Test kit use. Systems may also measure residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide by using DPD colorimetric test kits acceptable to the department. Free and total chlorine residual disinfectant concentrations may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument provided the chemistry, accuracy, and precision remain the same. Instruments used for continuous monitoring must be calibrated with a grab sample measurement at least every five days.

(3) Operator requirement. Measurements for residual disinfectant concentration shall be conducted by a Grade A through IV operator meeting the requirements of 567—Chapter 81, any person under the direct supervision of a Grade A through IV operator meeting the requirements of 567—Chapter 81, or a laboratory certified by the department to perform analysis under 567—Chapter 83.

e. Compliance requirements for residual disinfectants.

(1) General requirements.

1. When compliance is based on a running annual average of monthly or quarterly samples or averages and the system's failure to monitor makes it impossible to determine compliance with MRDLs for chlorine and chloramines, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

2. All samples taken and analyzed under the provisions of this rule must be included in determining compliance, even if that number is greater than the minimum required.

(2) Chlorine and chloramines.

1. Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the system under 43.6(1)"c"(2). If the average covering any consecutive four-quarter period exceeds the MRDL, the system is in violation of the MRDL and must notify the public pursuant to 567—42.1(455B), in addition to reporting to the department pursuant to 567—paragraph 42.4(3)"d."

2. In cases where systems switch between the use of chlorine and chloramines for residual disinfection during the year, compliance must be determined by including together all monitoring results of

both chlorine and chloramines in calculating compliance. Reports submitted pursuant to 567—paragraph 42.4(3) “d” must clearly indicate which residual disinfectant was analyzed for each sample.

(3) Chlorine dioxide.

1. Acute violations. Compliance must be based on consecutive daily samples collected by the system under 43.6(1) “c”(3). If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one or more of the three samples taken in the distribution system exceed the MRDL, the system is in violation of the MRDL and shall take immediate corrective action to lower the level of chlorine dioxide below the MRDL and shall notify the public pursuant to the Tier 1 requirements in 567—subrule 42.1(2) in addition to reporting to the department pursuant to 567—paragraph 42.4(3) “d.” Failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system will also be considered an MRDL violation and the system must notify the public of the violation in accordance with the provisions for Tier 1 violations in 567—subrule 42.1(2), in addition to reporting to the department pursuant to 567—paragraph 42.4(3) “d.”

2. Nonacute violations. Compliance must be based on consecutive daily samples collected by the system under 43.6(1) “c”(3). If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL, the system is in violation of the MRDL and must take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling and will notify the public pursuant to the Tier 2 requirements in 567—subrule 42.1(3), in addition to reporting to the department pursuant to 567—paragraph 42.4(3) “d.” Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the system must notify the public of the violation in accordance with the provisions for Tier 2 violations in 567—subrule 42.1(3), in addition to reporting to the department pursuant to 567—paragraph 42.4(3) “d.”

f. Reporting requirements for disinfectants. Systems required to sample quarterly or more frequently must report to the department within ten days after the end of each quarter in which samples were collected, notwithstanding the public notification provisions of 567—42.1(455B). Systems required to sample less frequently than quarterly must report to the department within ten days after the end of each monitoring period in which samples were collected. The specific reporting requirements for disinfectants are listed in 567—subparagraph 42.4(3) “d”(3).

43.6(2) Disinfection byproduct precursors.

a. Applicability.

(1) Surface water or IGW CWS and NTNC systems with conventional filtration. This rule establishes criteria under which surface water or influenced groundwater CWS and NTNC public water supply systems using conventional filtration treatment, as defined in 567—40.2(455B), that add a chemical disinfectant to the water in any part of the drinking water treatment process or which provide water that contains a chemical disinfectant must modify their practices to meet the MCLs listed in 567—41.6(455B) and the maximum residual disinfectant levels (MRDL) and treatment technique requirements for disinfection byproduct precursors listed in this rule.

(2) CWS and NTNC systems using ozone treatment. CWS and NTNC systems that use ozone in their treatment process must comply with the bromide requirements of this subrule.

(3) Compliance dates. Compliance dates for this rule are based upon the population served. CWS and NTNC systems using surface water or groundwater under the direct influence of surface water in whole or in part and which serve 10,000 or more persons must comply with this rule beginning January 1, 2002; while those systems serving fewer than 10,000 persons must comply with this rule beginning January 1, 2004.

(4) The department may require groundwater systems to conduct monitoring for disinfection byproduct precursors as a part of an operation permit.

b. Monitoring requirements for disinfection byproduct precursors.

(1) Routine monitoring for total organic carbon (TOC).

1. Surface water and groundwater under the direct influence of surface water systems which use conventional filtration treatment must monitor each treatment plant for total organic carbon (TOC) no later than at the point of combined filter effluent turbidity monitoring and representative of the treated water.

The systems must also monitor for TOC in the source water prior to any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as paired samples. At the same time the source water sample is taken, all systems must monitor for alkalinity in the source water prior to any treatment. Systems must take one paired set of source water and treated water samples and one source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

2. Surface water and groundwater under the direct influence of surface water systems which do not use conventional filtration treatment must conduct the TOC monitoring under 43.6(2)“b”(1)“1” in order to qualify for reduced disinfection byproduct monitoring for TTHM and HAA5 under 567—paragraph 41.6(1)“c”(4)“2.” The source water TOC running annual average must be less than or equal to 4.0 mg/L based on the most recent four quarters of monitoring on a continuing basis at each treatment plant to reduce or remain on reduced monitoring for TTHM and HAA5. Once qualified for reduced monitoring for TTHM and HAA5, a system may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location prior to any treatment.

(2) Reduced monitoring. The department may allow surface water and groundwater under the direct influence of surface water systems with an average treated water TOC of less than 2.0 mg/L for two consecutive years, or less than 1.0 mg/L for one year, to reduce monitoring for both TOC and alkalinity to one set of paired samples and one source water alkalinity sample per plant per quarter. The system must revert to routine monitoring in the month following the quarter when the annual average treated water TOC is greater than or equal to 2.0 mg/L.

(3) Bromide. The department may allow systems required to analyze for bromate to reduce bromate monitoring from monthly to once per quarter, if the system demonstrates that the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly measurements for one year. The system must continue bromide monitoring to remain on reduced bromate monitoring.

(4) The department may assign disinfection byproduct precursor monitoring prior to the compliance dates in 43.6(2)“a”(3) as part of an operation permit.

c. Analytical requirements for disinfection byproduct precursors.

(1) Analytical methods. Systems required to monitor disinfectant byproduct precursors must use the following methods, which must be conducted by a certified laboratory pursuant to 567—Chapter 83, unless otherwise specified.

Approved Methods for Disinfection Byproduct Precursor Monitoring¹

Analyte	Methodology	EPA	Standard Methods	ASTM	Other
Alkalinity ⁶	Titrimetric		2320B	D 1067-92B	
	Electrometric titration				I-1030-85
Bromide	Ion chromatography	300.0			
		300.1			
		317.0 Rev. 2.0			
		326.0			
				D 6581-00	
Dissolved Organic Carbon ² (DOC)	High temperature combustion	415.3 Rev. 1.2	5310B or 5310B-00		
	Persulfate-UV or heated-persulfate oxidation	415.3 Rev. 1.2	5310C or 5310C-00		
	Wet oxidation	415.3 Rev. 1.1, 415.3 Rev. 1.2	5310D or 5310D-00		
pH ³	Electrometric	150.1	4500-H ⁺ -B	D 1293-84	
		150.2			
Specific Ultraviolet Absorbance (SUVA)	Calculation using DOC and UV ₂₅₄ data	415.3 Rev. 1.2			
Total Organic Carbon ⁴	High temperature combustion	415.3 Rev. 1.2	5310B or 5310B-00		

Analyte	Methodology	EPA	Standard Methods	ASTM	Other
	Persulfate-UV or heated-persulfate oxidation	415.3 Rev. 1.2	5310C or 5310C-00		Hach Method 10267 ⁷
	Wet oxidation	415.3 Rev. 1.1, 415.3 Rev. 1.2	5310D or 5310D-00		
	Ozone Oxidation				Hach Method 10261 ⁸
Ultraviolet Absorption at 254 nm ⁵	Spectrophotometry	415.3 Rev. 1.1, 415.3 Rev. 1.2	5910B or 5910B-00, 11		

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register on February 16, 1999, in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA's Drinking Water Docket, 401 M Street, SW, Washington, DC 20460 (telephone: (202)260-3027); or at the Office of Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC 20408.

The following methods are available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428:

Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 1996: Method D 1067-92B and Method D 1293-84.

Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 2001 (or any year containing the cited version): Method D 6581-00.

The following methods are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (telephone: (800)553-6847):

"Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0," EPA-600/R-98/118, 1997 (NTIS, PB98-169196): Method 300.1.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, (NTIS PB84-128677): Methods 150.1 and 150.2.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA-600/R-93/100, August 1993, (NTIS PB94-121811): Method 300.0.

"Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis, Revision 2.0," USEPA, July 2001, EPA 815-B-01-001: Method 317.0.

"Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis, Revision 1.0," USEPA, June 2002, EPA 815-R-03-007: Method 326.0.

"Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water, Revision 1.1," USEPA, February 2005, EPA/600/R-05/055: Method 415.3 Revision 1.1.

"Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water, Revision 1.2," USEPA, September 2009, EPA/600/R-09/122: Method 415.3 Revision 1.2.

The following methods are available from the American Public Health Association, 800 I Street, NW, Washington, DC 20001-3710:

Standard Methods for the Examination of Water and Wastewater, 19th (1995), 21st (2005), and 22nd (2012) editions, American Public Health Association: Methods: 2320B (20th edition, 1998, is also accepted for this method), 4500-H⁺-B, and 5910B (22nd edition, 2012, is also accepted for this method).

Standard Methods for the Examination of Water and Wastewater, Supplement to the 19th edition (1996), 21st (2005), and 22nd editions, American Public Health Association: Methods: 5310B, 5310C, and 5310D.

For method numbers ending "-00", the year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that are IBR-approved.

Method I-1030-85 is available from the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, CO 80225-0425.

2Dissolved Organic Carbon (DOC). DOC and UV₂₅₄ samples used to determine a SUVA value must be taken at the same time and at the same location, prior to the addition of any disinfectant or oxidant by the system. Prior to analysis, DOC samples must be filtered through a 0.45 µ pore-diameter filter, as soon as practical after sampling, not to exceed 48 hours. After filtration, DOC samples must be acidified to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified DOC samples must be analyzed within 28 days. Inorganic carbon must be removed from the samples prior to analysis. Water passed through the filter prior to filtration of the sample must serve as the filtered blank. This filtered blank must be analyzed using procedures identical to those used for analysis of the samples and must meet a DOC concentration of <0.5 mg/L.

3pH must be measured by a laboratory certified by the department to perform analysis under 567—Chapter 83; a Grade II, III or IV operator meeting the requirements of 567—Chapter 81; or any person under the supervision of a Grade II, III or IV operator meeting the requirements of 567—Chapter 81.

4Total Organic Carbon (TOC). Inorganic carbon must be removed from the samples prior to analysis. TOC samples may not be filtered prior to analysis. TOC samples must be acidified at the time of sample collection to achieve a pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified TOC samples must be analyzed within 28 days.

5Ultraviolet Absorption at 254 nm (UV254). DOC and UV254 samples used to determine a SUVA value must be taken at the same time and at the same location, prior to the addition of any disinfectant or oxidant by the system. UV absorption must be measured at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, UV254 samples must be filtered through a 0.45 μ pore-diameter filter. The pH of UV254 samples may not be adjusted. Samples must be analyzed as soon as practical after sampling, not to exceed 48 hours.

6Alkalinity must be measured by a laboratory certified by the department to perform analysis under 567—Chapter 83; a Grade II, III or IV operator meeting the requirements of 567—Chapter 81; or any person under the supervision of a Grade II, III or IV operator meeting the requirements of 567—Chapter 81. Only the listed titrimetric methods are acceptable.

⁷Hach Company. “Hach Method 10267 – Spectrophotometric Measurement of Total Organic Carbon (TOC) in Finished Drinking Water,” December 2015, Revision 1.2. Available at www.hach.com.

⁸Hach Company. “Hach Method 10261 – Total Organic Carbon in Finished Drinking Water by Catalyzed Ozone Hydroxyl Radical Oxidation Infrared Analysis,” December 2015, Revision 1.2. Available at www.hach.com.

(2) SUVA. Specific Ultraviolet Absorbance (SUVA) is equal to the UV absorption at 254nm (UV₂₅₄) (measured in m⁻¹) divided by the dissolved organic carbon (DOC) concentration (measured as mg/L). In order to determine SUVA, it is necessary to separately measure UV₂₅₄ and DOC. When determining SUVA, systems must use the methods stipulated in subparagraph 43.6(1)“c”(1) to measure DOC and UV₂₅₄. SUVA must be determined on water prior to the addition of disinfectants/oxidants by the system. DOC and UV₂₅₄ samples used to determine an SUVA value must be taken at the same time and at the same location.

(3) Magnesium. All methods approved for magnesium in 567—subparagraph 41.3(1)“e”(1) are approved for use in measuring magnesium under this rule.

d. Compliance requirements for disinfection byproduct precursors.

(1) General requirements. All samples taken and analyzed under the provisions of this rule must be included in determining compliance, even if that number is greater than the minimum required.

(2) Compliance determination. Compliance must be determined as specified by 43.6(3)“c.” The department may assign monitoring through an operation permit, or systems may begin monitoring to determine whether Step 1 TOC removals can be met 12 months prior to the compliance date for the system. This monitoring is not required and failure to monitor during this period is not a violation. However, any system that does not monitor during this period and then determines in the first 12 months after the compliance date that it is not able to meet the Step 1 requirements in 43.6(3)“b”(2), and must therefore apply for alternate minimum TOC removal (Step 2) requirements, is not eligible for retroactive approval of alternate minimum TOC removal (Step 2) requirements as allowed pursuant to 43.6(3)“b”(3) and is in violation. Systems may apply for alternate minimum TOC removal (Step 2) requirements anytime after the compliance date. For systems required to meet Step 1 TOC removals, if the value calculated under 43.6(3)“c”(1)“4” is less than 1.00, the system is in violation of the treatment technique requirements and must notify the public pursuant to 567—42.1(455B), in addition to reporting to the department pursuant to 567—paragraph 42.4(3)“d.”

e. Reporting requirements for disinfection byproduct precursors. Systems required to sample quarterly or more frequently must report to the department within ten days after the end of each quarter in which samples were collected, notwithstanding the public notification provisions of 567—42.1(455B). Systems required to sample less frequently than quarterly must report to the department within ten days after the end of each monitoring period in which samples were collected. The specific reporting requirements for disinfection byproduct precursors are listed in 567—subparagraph 42.4(3)“d”(4).

43.6(3) Treatment technique for control of disinfection byproduct precursors.

a. Applicability.

(1) Systems using surface water or groundwater under the direct influence of surface water and conventional filtration treatment (as defined in 567—40.2(455B)) must operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in paragraph “b” of this subrule unless the system meets at least one of the alternative compliance criteria listed in 43.6(3)“a”(2) or (3).

(2) Alternative compliance criteria for enhanced coagulation and enhanced softening systems. Systems using surface water or groundwater under the direct influence of surface water and conventional

filtration treatment may use the alternative compliance criteria in 43.6(3) “a”(2)“1” through “6” to comply with this subrule in lieu of complying with 43.6(3) “b.” Systems must still comply with monitoring requirements in 43.6(2) “b.”

1. The system’s source water TOC level, measured according to 43.6(2) “c”(1), is less than 2.0 mg/L, calculated quarterly as a running annual average.

2. The system’s treated water TOC level, measured according to 43.6(2) “c”(1), is less than 2.0 mg/L, calculated quarterly as a running annual average.

3. The system’s source water TOC level, measured according to 43.6(2) “c”(1), is less than 4.0 mg/L, calculated quarterly as a running annual average; the source water alkalinity, measured according to 43.6(2) “c”(1), is greater than 60 mg/L as CaCO₃, calculated quarterly as a running annual average; and either the TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively; or prior to the effective date for compliance in 567—subparagraph 41.6(1) “a”(3) and in 43.6(1) “a”(3) and 43.6(2) “a”(3), the system has made a clear and irrevocable financial commitment not later than the effective date for compliance in 567—subparagraph 41.6(1) “a”(3) and in 43.6(1) “a”(3) and 43.6(2) “a”(3), to use of technologies that will limit the levels of TTHMs and HAA5 to no more than 0.040 mg/L and 0.030 mg/L, respectively. Systems must submit evidence of a clear and irrevocable financial commitment, in addition to a schedule containing milestones and periodic progress reports for installation and operation of appropriate technologies, to the department for approval not later than the effective date for compliance in 567—subparagraph 41.6(1) “a”(3) and in 43.6(1) “a”(3) and 43.6(2) “a”(3). These technologies must be installed and operating not later than June 30, 2005. Failure to install and operate these technologies by the date in the approved schedule will constitute a treatment technique violation.

4. The TTHM and HAA5 running annual averages are less than or equal to 0.040 mg/L and 0.030 mg/L, respectively, and the system uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

5. The system’s source water SUVA, prior to any treatment and measured monthly according to 43.6(2) “c,” is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

6. The system’s finished water SUVA, measured monthly according to 43.6(2) “c,” is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

(3) Additional alternative compliance criteria for softening systems. Systems practicing enhanced softening that cannot achieve the TOC removals required by 43.6(3) “b”(2) may use the alternative compliance criteria in 43.6(3) “a”(3)“1” and “2” in lieu of complying with 43.6(3) “b.” Systems must still comply with monitoring requirements in 43.6(2) “b.”

1. Softening that lowers the treated water alkalinity to less than 60 mg/L as CaCO₃, measured monthly according to 43.6(2) “c” and calculated quarterly as a running annual average.

2. Softening that removes at least 10 mg/L of magnesium hardness as CaCO₃, measured monthly and calculated quarterly as a running annual average.

b. Enhanced coagulation and enhanced softening performance requirements.

(1) Systems must achieve the percent reduction of TOC specified in 43.6(3) “b”(2) between the source water and the combined filter effluent, unless the department approves a system’s request for alternate minimum TOC removal (Step 2 requirements under 43.6(3) “b”(3)).

(2) Required Step 1 TOC reductions, indicated in the following table, are based upon specified source water parameters measured in accordance with 43.6(2) “c.” Systems using softening are required to meet the Step 1 TOC reductions in the right-hand column (Source water alkalinity > 120 mg/L) for the specified source water TOC:

Step 1 Required Removal of TOC by Enhanced Coagulation and Enhanced Softening for Surface Water or IGW Systems Using Conventional Treatment^{1,2}

Source water TOC, mg/L	Source water Alkalinity, mg/L as CaCO ₃		
	0-60	>60-120	>120 ³
>2.0 - 4.0	35.0%	25.0%	15.0%
>4.0 - 8.0	45.0%	35.0%	25.0%

>8.0	50.0%	40.0%	30.0%

¹Systems meeting at least one of the conditions in 43.6(3) “a”(2)“1” to “6” are not required to operate with enhanced coagulation.

²Softening systems meeting one of the alternative compliance criteria in 43.6(3) “a”(3) are not required to operate with enhanced softening.

³Systems practicing softening must meet the TOC removal requirements in this column.

(3) Surface water and groundwater under the influence of surface water systems using conventional treatment that cannot achieve the Step 1 TOC removals required by 43.6(3) “b”(2) due to water quality parameters or operational constraints must apply to the department for approval of alternative minimum Step 2 TOC removal requirements submitted by the system within three months of failure to achieve the TOC removals required by 43.6(3) “b”(2). If the department approves the alternative minimum Step 2 TOC removal requirements, the department may make those requirements retroactive for the purposes of determining compliance. The system must meet the Step 1 TOC removals contained in 43.6(3) “b”(2) until the department approves the alternate minimum Step 2 TOC removal requirements.

(4) Alternate minimum Step 2 TOC removal requirements. Applications made to the department by enhanced coagulation systems for approval of alternate minimum Step 2 TOC removal requirements under 43.6(3) “b”(3) must include, as a minimum, results of bench-scale or pilot-scale testing conducted under 43.6(3) “b”(4)“1” below and be used to determine the alternate enhanced coagulation level.

1. Alternate enhanced coagulation level. Alternate enhanced coagulation level is defined as coagulation at a coagulant dose and pH as determined by the method described in 43.6(3) “b”(4)“1” to “5” such that an incremental addition of 10 mg/L of alum (or equivalent amount of ferric salt) results in a TOC removal of less than or equal to 0.3 mg/L. The percent removal of TOC at this point on the “TOC removal versus coagulant dose” curve is then defined as the minimum TOC removal required for the system. Once approved by the department, this minimum requirement supersedes the minimum TOC removal required by the table in 43.6(3) “b”(2). This requirement will be effective until such time as the department approves a new value based on the results of a new bench-scale or pilot-scale test. Failure to achieve department-set alternative minimum TOC removal levels is a treatment technique violation.

2. Bench-scale or pilot-scale testing of enhanced coagulation must be conducted by using representative water samples and adding 10 mg/L increments of alum (or equivalent amounts of ferric salt) until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in the following table:

Enhanced Coagulation Step 2 Target pH

Alkalinity (mg/L as CaCO ₃)	Target pH
0-60	5.5
>60-120	6.3
>120-240	7.0
>240	7.5

3. For waters with alkalinities of less than 60 mg/L for which addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below 5.5 before significant TOC removal occurs, the system must add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/L per 10 mg/L alum added (or equivalent addition of iron coagulant) is reached.

4. The system may operate at any coagulant dose or pH necessary (consistent with other public drinking water rules in 567—Chapters 41 through 43) to achieve the minimum TOC percent removal approved under 43.6(3) “b”(3).

5. If the TOC removal is consistently less than 0.3 mg/L of TOC per 10 mg/L of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the water is deemed to contain TOC not amenable to enhanced coagulation. The system may then apply to the department for a waiver of enhanced coagulation requirements.

c. Compliance calculations.

(1) Surface water or groundwater under the influence of surface water systems other than those identified in 43.6(3) “a”(2) or (3) must comply with requirements contained in 43.6(3) “b”(2) or (3).

Systems must calculate compliance quarterly, beginning after the system has collected 12 months of data, by determining an annual average using the following method:

1. Step 1: Determine actual monthly TOC percent removal using the following equation, to two decimal places:

$$\text{Actual monthly TOC percent removal} = 1 - \left(\frac{\text{treated water TOC}}{\text{source water TOC}} \right) \times 100$$

2. Step 2: Determine the required monthly TOC percent removal from either 43.6(3) “b”(2) or (3).

3. Step 3: Divide the “actual monthly TOC percent removal” value (from Step 1) by the “required monthly TOC percent removal” value (from Step 2). Determine this value for each of the last 12 months.

$$\text{Monthly percent removal ratio} = \frac{\text{actual monthly TOC percent removal}}{\text{required monthly TOC percent removal}}$$

4. Step 4: Add together the “monthly percent removal ratio” values from Step 3 for each of the last 12 months and divide by 12, to determine the annual average value.

$$\text{Annual average} = \frac{\Sigma \text{ monthly percent removal ratio}}{12}$$

5. Step 5: If the “annual average” value calculated in Step 4 is less than 1.00, the system is not in compliance with the TOC percent removal requirements.

(2) Systems may use the provisions in 43.6(3) “c”(2) “1” through “5” in lieu of the calculations in 43.6(3) “c”(1) “1” through “5” to determine compliance with TOC percent removal requirements.

1. In any month that the system’s treated or source water TOC level, measured according to 43.6(2) “c”(1), is less than 2.0 mg/L, the system may assign a monthly value of 1.0 (in lieu of the value calculated in 43.6(3) “c”(1) “3”) when calculating compliance under the provisions of 43.6(3) “c”(1).

2. In any month that a system practicing softening removes at least 10 mg/L of magnesium hardness as CaCO₃, the system may assign a monthly value of 1.0 (in lieu of the value calculated in 43.6(3) “c”(1) “3”) when calculating compliance under the provisions of 43.6(3) “c”(1).

3. In any month that the system’s source water SUVA, prior to any treatment and measured according to 43.6(2) “c”(2), is less than or equal to 2.0 L/mg-m, the system may assign a monthly value of 1.0 (in lieu of the value calculated in 43.6(3) “c”(1) “3”) when calculating compliance under the provisions of 43.6(3) “c”(1).

4. In any month that the system’s finished water SUVA, measured according to 43.6(2) “c”(2), is less than or equal to 2.0 L/mg-m, the system may assign a monthly value of 1.0 (in lieu of the value calculated in 43.6(3) “c”(1) “3”) when calculating compliance under the provisions of 43.6(3) “c”(1).

5. In any month that a system using enhanced softening lowers alkalinity below 60 mg/L as CaCO₃, the system may assign a monthly value of 1.0 (in lieu of the value calculated in 43.6(3) “c”(1) “3”) when calculating compliance under the provisions of 43.6(3) “c”(1).

(3) Surface water or groundwater under the direct influence of surface water systems using conventional treatment may also comply with the requirements of this subrule by meeting the criteria in 43.6(3) “a”(2) or (3).

d. *Treatment technique requirements for disinfection byproduct precursors.* The treatment techniques to control the level of disinfection byproduct precursors in drinking water treatment and distribution systems, for surface water or groundwater under the direct influence of surface water systems using conventional filtration treatment, are enhanced coagulation or enhanced softening.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—43.7(455B) Lead and copper treatment techniques.

43.7(1) Corrosion control treatment for lead and copper control.

a. *Applicability.* Systems shall complete the applicable corrosion control treatment requirements by the deadlines specified in the following rules:

(1) Large systems serving more than 50,000 persons. A large system (serving greater than 50,000 persons) shall complete the corrosion control treatment steps specified in 43.7(1) "d," unless the system is deemed to have optimized corrosion control under 43.7(1) "b"(2) or (3).

(2) Small and medium-size systems serving 50,000 or fewer persons. A small system (serving less than or equal to 3,300 persons) or a medium-size system (serving greater than 3,300 and less than or equal to 50,000 persons) shall complete the corrosion control treatment steps specified in 43.7(1) "e," unless the system has optimized corrosion control under 43.7(1) "b"(1), (2), or (3).

b. Determination that a system has optimized corrosion control. A public water supply system has optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in this subrule if the system satisfies one of the criteria specified in subparagraphs 43.7(1) "b"(1) through (3). Any such system deemed to have optimized corrosion control under this paragraph and which has treatment in place shall continue to operate and maintain optimal corrosion control treatment and meet any requirements that the department determines appropriate to ensure optimal corrosion control treatment is maintained.

(1) A small or medium-size water supply system has optimized corrosion control if the system meets the lead and copper action levels during each of two consecutive six-month monitoring periods, conducted in accordance with 567—paragraph 41.4(1) "c."

(2) Any public water supply system may be deemed to have optimized corrosion control treatment if the system demonstrates to the satisfaction of the department that it has conducted activities equivalent to the corrosion control steps applicable to such system under this subrule. If the department makes this determination, it shall provide the water supply system with written notice explaining the basis for its decision and shall specify the water quality control parameters representing optimal corrosion control in accordance with 43.7(2) "f." Systems deemed to have optimized corrosion control under this paragraph shall operate in compliance with the department-designated optimal water quality control parameters in accordance with paragraph 43.7(1) "g" and continue to conduct lead and copper tap and water quality parameter sampling in accordance with 567—paragraph 41.4(1) "c"(4) "3" and 567—subparagraph 41.4(1) "d"(4), respectively. A system shall provide the department with the following information in order to support a determination under this paragraph:

1. The results of all test samples collected for each of the water quality parameters in 43.7(2) "c"(3);
2. A report explaining the test methods used by the water system to evaluate the corrosion control treatments listed in 43.7(2) "c"(1), the results of all tests conducted, and the basis for the system's selection of optimal corrosion control treatment;
3. A report explaining how corrosion control was installed and how it is being maintained to ensure minimal lead and copper concentrations at consumers' taps; and
4. The results of tap water samples collected in accordance with 567—paragraph 41.4(1) "c" at least once every six months for one year after corrosion control has been installed.

(3) Any water system has optimized corrosion control if it submits results of tap water monitoring conducted in accordance with 567—paragraph 41.4(1) "c" and source water monitoring conducted in accordance with 567—paragraph 41.4(1) "e" that demonstrate for two consecutive six-month monitoring periods that the difference between the 90th percentile tap water lead level computed under 567—subparagraph 41.4(1) "b"(3) and the highest source water lead concentration is less than the practical quantitation level for lead specified in 567—paragraph 41.4(1) "g."

1. Those systems whose highest source water lead level is below the method detection limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the practical quantitation level for lead for two consecutive six-month monitoring periods.

2. Any water system deemed to have optimized corrosion control in accordance with this paragraph shall continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in 567—subparagraph 41.4(1) "c"(3) and collecting the samples at times and locations specified in 567—paragraph 41.4(1) "c"(4) "4," fourth bulleted paragraph.

3. Any water system deemed to have optimized corrosion control pursuant to this paragraph shall notify the department in writing pursuant to 567—subparagraph 42.4(2) "a"(3) of any upcoming long-term

change in treatment or the addition of a new source as described in 567—subparagraph 42.4(2)“a”(3). The department must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system.

4. Unless a system meets the copper action level, it is not deemed to have optimized corrosion control under this paragraph and shall implement corrosion control treatment pursuant to 43.7(1)“b”(3)“5.”

5. Any system triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this paragraph shall implement corrosion control treatment in accordance with the deadlines in paragraph 43.7(1)“e.” Any such large system shall adhere to the schedule specified in that paragraph for medium-size systems, with the time periods for completing each step being triggered by the date the system is no longer deemed to have optimized corrosion control under this paragraph.

c. *Requirements to recommence corrosion control steps.* Any small or medium-size water system that is required to complete the corrosion control steps due to its exceedance of the lead or copper action level may cease completing the treatment steps whenever the system meets both action levels during each of two consecutive monitoring periods conducted pursuant to 567—paragraph 41.4(1)“c” and submits the results to the department. If any such water system thereafter exceeds the lead or copper action level during any monitoring period, the system shall recommence completion of the applicable treatment steps, beginning with the first treatment step which was not previously completed in its entirety. The department may require a system to repeat treatment steps previously completed by the system when it is determined by the department that this is necessary to implement properly the treatment requirements of this rule. The department will notify the system in writing of such a determination and explain the basis for its decision. The requirement for any small or medium-size system to implement corrosion control treatment steps in accordance with 43.7(1)“e” (including systems deemed to have optimized corrosion control under 43.7(1)“b”(1)) is triggered whenever any small or medium-size system exceeds the lead or copper action level.

d. *Treatment steps and deadlines for large systems.* Except as provided in 43.7(1)“b”(2) or (3), large systems shall complete the following corrosion control treatment steps (described in the referenced portions of 43.7(1)“b,” subrule 43.7(2), and 567—paragraphs 41.4(1)“c” and “d”) by the dates indicated below.

(1) Step 1. The system shall conduct initial monitoring pursuant to 567—paragraph 41.4(1)“c”(4)“1” and 567—subparagraph 41.4(1)“d”(2) during two consecutive six-month monitoring periods by January 1, 1993.

(2) Step 2. The system shall complete corrosion control studies pursuant to 43.7(2)“c” by July 1, 1994.

(3) Step 3. The department will designate optimal corrosion control treatment within six months of receiving the corrosion control study results (by January 1, 1995).

(4) Step 4. The system shall install optimal corrosion control treatment by January 1, 1997.

(5) Step 5. The system shall complete follow-up sampling pursuant to 567—paragraph 41.4(1)“c”(4)“2” and 567—subparagraph 41.4(1)“d”(3) by January 1, 1998.

(6) Step 6. The department will review installation of treatment and designate optimal water quality control parameters pursuant to 43.7(2)“f” by July 1, 1998.

(7) Step 7. The system shall operate in compliance with optimal water quality control parameters delineated by the department and continue to conduct tap sampling.

e. *Treatment steps and deadlines for small and medium-size systems.* Except as provided in 43.7(2), small and medium-size systems shall complete the following corrosion control treatment steps (described in subrule 43.7(2) and 567—paragraphs 41.4(1)“c” and “d”) by the indicated time periods listed below.

(1) Step 1. The system shall conduct initial tap sampling pursuant to 567—paragraph 41.4(1)“c”(4)“1” and 567—subparagraph 41.4(1)“d”(2) until the system either exceeds the lead or copper action level or becomes eligible for reduced monitoring under 567—paragraph 41.4(1)“c”(4)“4.” A system exceeding the lead or copper action level shall recommend optimal corrosion control treatment under 43.7(2)“a” within six months after the end of the monitoring period during which it exceeds one of the action levels.

(2) Step 2. Within 12 months after the end of the monitoring period during which a system exceeds the lead or copper action level, the department may require the system to perform corrosion control studies under 43.7(2)“b.” If the system is not required to perform such studies, the department will specify optimal corrosion control treatment under 43.7(2)“d” as follows: for medium-size systems, within 18 months after

the end of the monitoring period during which such system exceeds the lead or copper action level, and, for small systems, within 24 months after the end of the monitoring period during which such system exceeds the lead or copper action level.

(3) Step 3. If a system is required to perform corrosion control studies under Step 2, the system shall complete the studies (under 43.7(2)“c”) within 18 months after such studies are required to commence.

(4) Step 4. If the system has performed corrosion control studies under Step 2, the department will designate optimal corrosion control treatment under 43.7(2)“d” within six months after completion of Step 3.

(5) Step 5. The system shall install optimal corrosion control treatment under 43.7(2)“e” within 24 months after such treatment is designated.

(6) Step 6. The system shall complete follow-up sampling pursuant to 567—paragraph 41.4(1)“c”(4)“2” and 567—subparagraph 41.4(1)“d”(3) within 36 months after optimal corrosion control treatment is designated.

(7) Step 7. The department will review the system’s installation of treatment and designate optimal water quality control parameters pursuant to 43.7(2)“f” within six months after completion of Step 6.

(8) Step 8. The system shall operate in compliance with the department-designated optimal water quality control parameters under 43.7(2)“f” (and continue to conduct tap sampling as per 567—paragraph 41.4(1)“c”(4)“3” and 567—subparagraph 41.4(1)“d”(4)).

43.7(2) Description of corrosion control treatment requirements. Each public water supply system shall complete the corrosion control treatment requirements described below which are applicable to such systems under 43.7(1).

a. Public water supply system recommendation regarding corrosion control treatment. Based upon the results of lead and copper tap monitoring and water quality parameter monitoring, small and medium-size water systems exceeding the lead or copper action level shall recommend installation of one or more of the corrosion control treatments listed in 43.7(2)“c” which the system believes constitute optimal corrosion control for that system. The department may require the system to conduct additional water quality parameter monitoring in accordance with 567—subparagraph 41.4(1)“d”(2) to assist in reviewing the system’s recommendation.

b. Department decision to require studies of corrosion control treatment (applicable to small and medium-size systems). The department may require any small or medium-size system that exceeds the lead or copper action level to perform corrosion control studies under 43.7(2)“c” to identify optimal corrosion control treatment for the system.

c. Performance of corrosion control studies.

(1) Any public water supply system performing corrosion control studies shall evaluate the effectiveness of each of the following treatments and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment: alkalinity and pH adjustment; calcium hardness adjustment; and the addition of a phosphate or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

(2) The water system shall evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry and distribution system configuration.

(3) The public water supply system shall measure the following water quality parameters in any tests conducted under this paragraph before and after evaluating the corrosion control treatments listed above:

1. Lead;
2. Copper;
3. pH;
4. Alkalinity;
5. Calcium;
6. Conductivity;
7. Orthophosphate (when an inhibitor containing a phosphate compound is used);
8. Silicate (when an inhibitor containing a silicate compound is used);
9. Water temperature.

(4) The public water supply system shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and outline such constraints with the following: data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; or data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

(5) The water system shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

(6) On the basis of an analysis of the data generated during each evaluation, the water system shall recommend in writing to the department the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that system. The water system shall provide a rationale for its recommendation along with all supporting documentation required by 43.7(2) "c"(1) through (5).

d. Department designation of optimal corrosion control treatment.

(1) Based upon consideration of available information including, where applicable, studies performed under 43.7(2) "c" and a system's recommended treatment alternative, the department will either approve the corrosion control treatment option recommended by the public water supply system, or designate alternative corrosion control treatment(s) from among those listed in 43.7(2) "c." The department will consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes (when designating optimal corrosion control treatment).

(2) The department will notify the public water supply system of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. If the department requests additional information to aid its review, the public water supply system shall provide the information.

e. Installation of optimal corrosion control. Each public water supply system shall properly install and operate throughout its distribution system the optimal corrosion control treatment designated under 43.7(2) "d."

f. Department review of treatment and specification of optimal water quality control parameters.

(1) The department will evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the public water supply system and determine whether the system has properly installed and operated the optimal corrosion control treatment designated in 43.7(2) "d." Upon reviewing the results of tap water and water quality parameter monitoring by the public water supply system, both before and after the system installs optimal corrosion control treatment, the department will designate the following:

1. A minimum value or a range of values for pH measured at each entry point to the distribution system;

2. A minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0 unless meeting a pH level of 7.0 is not technologically feasible or is not necessary for the public water supply system to optimize corrosion control;

3. If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, necessary to form a passivating film on the interior walls of the pipes of the distribution system;

4. If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples; or

5. If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

(2) The values for the applicable water quality control parameters listed above shall be those which reflect optimal corrosion control treatment for the public water supply system. The department may designate values for additional water quality control parameters determined by the department to reflect optimal corrosion control for the system. The department will notify the system in writing of these determinations and explain the basis for its decisions.

g. Continued operation with optimized corrosion control and water quality parameter monitoring compliance determination. All systems optimizing corrosion control shall continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameters at or above minimum values or within ranges designated by the department under paragraph 43.7(2) “f,” in accordance with this paragraph for all samples collected under 567—subparagraphs 41.4(1) “d”(4) through (6). Compliance with the requirements of this paragraph shall be determined every six months, as specified under 567—subparagraph 41.4(1) “d”(4). A water system is out of compliance with the requirements of this paragraph for a six-month period if it has excursions for any department-specified parameter on more than nine days during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the department. Daily values are calculated as follows. The department has the discretion to invalidate results of obvious sampling errors from this calculation.

(1) On days when more than one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the average of all results collected during the day regardless of whether they are collected through continuous monitoring, grab sampling, or a combination of both.

(2) On days when only one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the result of that measurement.

(3) On days when no measurement is collected for the water quality parameter at the sampling location, the daily value shall be the daily value calculated on the most recent day on which the water quality parameter was measured at the sample site.

h. Modification of department treatment decisions. A determination of the optimal corrosion control treatment under 43.7(2) “d” or optimal water quality control parameters under 43.7(2) “f” may be modified. A request for modification by a public water supply system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The department may modify its determination when it concludes that such change is necessary to ensure that the public water supply system continues to optimize corrosion control treatment. A revised determination will be made in writing, which will set forth the new treatment requirements, explain the basis for the decision, and provide an implementation schedule for completing the treatment modifications.

43.7(3) Source water treatment requirements. Public water supply systems shall complete the applicable source water monitoring and treatment requirements, as described in the referenced portions of 43.7(3) “b,” and in 567—paragraphs 41.4(1) “c” and “e,” by the following deadlines.

a. Deadlines for completing source water treatment steps.

(1) Step 1. A public water supply system exceeding the lead or copper action level shall complete lead and copper source water monitoring under 567—subparagraph 41.4(1) “e”(2) and make a written treatment recommendation to the department no later than 180 days after the end of the monitoring period during which the lead or copper action level was exceeded.

(2) Step 2. The department will make a determination regarding source water treatment pursuant to 43.7(3) “b”(2) within six months after submission of monitoring results under Step 1.

(3) Step 3. If installation of source water treatment is required, the system shall install the treatment pursuant to 43.7(3) “b”(3) within 24 months after completion of Step 2.

(4) Step 4. The public water supply system shall complete follow-up tap water monitoring under 567—paragraph 41.4(1) “c”(4) “2” and source water monitoring under 567—subparagraph 41.4(1) “e”(3) within 36 months after completion of Step 2.

(5) Step 5. The department will review the system’s installation and operation of source water treatment and specify maximum permissible source water levels under 43.7(3) “b”(4) within six months after completion of Step 4.

(6) Step 6. The public water supply system shall operate in compliance with the specified maximum permissible lead and copper source water levels under 43.7(3) “b”(4) and continue source water monitoring pursuant to 567—subparagraph 41.4(1) “e”(4).

b. Description of source water treatment requirements.

(1) System treatment recommendation. Any system which exceeds the lead or copper action level shall recommend in writing to the department the installation and operation of one of the source water

treatments listed in 43.7(3)“b”(2). A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

(2) Source water treatment determinations. The department will complete an evaluation of the results of all source water samples submitted by the public water supply system to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If the department determines that treatment is needed, the department will require installation and operation of the source water treatment recommended by the public water supply system or require the installation and operation of another source water treatment from among the following: ion exchange, reverse osmosis, lime softening or coagulation/filtration. If the department requests additional information to aid in its review, the water system shall provide the information by the date specified in its request. The department will notify the system in writing of its determination and set forth the basis for its decision.

(3) Installation of source water treatment. Public water supply systems shall properly install and operate the source water treatment designated by the department under 43.7(3)“b”(2).

(4) Department review of source water treatment and specification of maximum permissible source water levels. The department will review the source water samples taken by the water supply system both before and after the system installs source water treatment and determine whether the public water supply system has properly installed and operated the designated source water treatment. Based upon its review, the department will designate maximum permissible lead and copper concentrations for finished water entering the distribution system. Such levels shall reflect the contaminant removal capability of the treatment (properly operated and maintained). The department will notify the public water supply system in writing and explain the basis for its decision.

(5) Continued operation and maintenance. Each public water supply system shall maintain lead and copper levels below the maximum permissible concentrations designated by the department at each sampling point monitored in accordance with 567—paragraph 41.4(1)“e.” The system is out of compliance with this paragraph if the level of lead or copper at any sampling point is greater than the maximum permissible designated concentration.

(6) Modification of source water treatment decisions. The department may modify its determination of the source water treatment under 43.7(3)“b”(6), or maximum permissible lead and copper concentrations for finished water entering the distribution system under 43.7(3)“b”(4). A request for modification by a public water supply system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The department may modify its determination where it concludes that such change is necessary to ensure that the system continues to minimize lead and copper concentrations in source water. A revised determination will be made in writing, set forth the new treatment requirements, explain the basis for the decision, and provide an implementation schedule for completing the treatment modifications.

43.7(4) *Lead service line replacement requirements.*

a. Applicability. Public water supply systems that fail to meet the lead action level in tap samples taken pursuant to 567—paragraph 41.4(1)“c”(4)“2” after installing corrosion control or source water treatment (whichever sampling occurs later) shall replace lead service lines in accordance with the requirements of this subrule. If a system is in violation of 43.7(1) and 43.7(3) for failure to install source water or corrosion control treatment, the department may require the system to commence lead service line replacement under this subrule after the date by which the system was required to conduct monitoring under 567—paragraph 41.4(1)“c”(4)“2” has passed.

b. Lead service line replacement schedule. A public water supply system shall replace annually at least 7 percent of the initial number of lead service lines in its distribution system. The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins. The system shall identify the initial number of lead service lines in its distribution system, including an identification of the portion(s) owned by the system, based upon a materials evaluation, including the evaluation required under 567—subparagraph 41.4(1)“c”(1), and relevant legal authorities regarding the portion owned by the system such as contracts and local ordinances.

(1) The first year of lead service line replacement shall begin on the first day following the end of the monitoring period in which the action level was exceeded in tap sampling referenced in 43.7(4)“a.” If monitoring is required annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs. If the department has established an alternate monitoring period, then the end of the monitoring period will be the last day of that period.

(2) Any water system resuming a lead service line replacement program after the cessation of its lead service line replacement program as allowed by 43.7(4)“g” shall update its inventory of lead service lines to include those sites that were previously determined not to require replacement through the sampling provision under 43.7(4)“c.” The system will then divide the updated number of remaining lead service lines by the number of remaining years in the program to determine the number of lines that must be replaced per year. Seven percent lead service line replacement is based on a 15-year replacement program. For example, systems resuming lead service line replacement after previously conducting two years of replacement would divide the updated inventory by 13.

(3) For those systems that have completed a 15-year lead service line replacement program, the department will determine a schedule for replacing or retesting lines that were previously exempted through testing under 43.7(4)“c” from the replacement program when the system re-exceeds the action level.

c. Exemption to lead service line replacement requirement. A public water supply system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken pursuant to 567—paragraph 41.4(1)“c”(2)“3,” is less than or equal to 0.015 mg/L.

d. Lead service line replacement requirements. A water system shall replace that portion of the lead service line that it owns. In cases where the system does not own the entire lead service line, the system shall notify the owner of the line, or the owner’s authorized agent, that the system will replace the portion of the service line that it owns and shall offer to replace the owner’s portion of the line. A system is not required to bear the cost of replacing the privately owned portion of the line, nor is it required to replace the privately owned portion of the line where the owner chooses not to pay the cost of replacing the privately owned portion of the line, or where replacing the privately owned portion would be precluded by state, local, or common law. A water system that does not replace the entire length of the service line shall complete the following tasks.

(1) Notification of residents. At least 45 days prior to commencing with the partial replacement of a lead service line, the water system shall provide to the resident(s) of all buildings served by the line notice explaining that the resident(s) may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers may take to minimize their exposure to lead. The department may allow the water system to provide this notice less than 45 days prior to commencing partial lead service line replacement where such replacement is in conjunction with emergency repairs. In addition, the water system shall inform the resident(s) served by the line that the system will, at the system’s expense, collect from each partially replaced lead service line a sample that is representative of the water in the service line for analysis of lead content, as prescribed under 567—paragraph 41.4(1)“c”(2)“3,” within 72 hours after the completion of the partial replacement of the service line. The system shall collect the sample and report the results of the analysis to the owner and the resident(s) served by the line within three business days of receiving the results. Mailed notices postmarked within three business days of receiving the results shall be considered “on time.”

(2) Notification methods. The water system shall provide the information required by subparagraph 43.7(4)“d”(1) to the residents of individual dwellings by mail or by other methods approved by the department. In instances where multifamily dwellings are served by the line, the water system shall have the option to post the information at a conspicuous location.

e. Lead service line control—department review. Rescinded IAB 1/7/04, effective 2/11/04.

f. Lead service line replacement schedule. The department may require a public water supply system to replace lead service lines on a shorter schedule than that required by this subrule, taking into account the number of lead service lines in the system, where such a shorter replacement schedule is feasible. The department will make this determination in writing and notify the system of its finding within six months

after the system is triggered into lead service line replacement based on monitoring referenced in 43.7(4) “a.”

g. Cessation of lead service line replacement. Any public water supply system may cease replacing lead service lines whenever first draw samples collected pursuant to 567—paragraph 41.4(1) “c”(2) “2” meet the lead action level during each of two consecutive monitoring periods and the system submits the results. If the first draw tap samples collected in any such water system thereafter exceed the lead action level, the system shall recommence replacing lead service lines, as detailed in 43.7(4) “b.”

h. Lead service line replacement reporting requirements. To demonstrate compliance with 43.7(4) “a” through “d,” a system shall report the information specified in 567—paragraph 42.4(2) “e.”

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—43.8(455B) Viability assessment.

43.8(1) Definitions specific to viability assessment.

“New system” for viability assessment purposes includes public water supply systems which are newly constructed after the effective date of this rule, as well as systems which do not currently meet the definition of a PWS, but which expand their infrastructure and thereby grow to become a PWS. Systems not currently meeting the definition of a PWS and which add additional users and thereby become a PWS without constructing any additional infrastructure are not “new systems” for the purposes of this subrule.

“Nonviable system” for viability assessment purposes means a system lacking the technical, financial, and managerial ability to comply with 567—Chapters 40 through 43 and 81.

“Significant noncompliance (SNC)” for viability assessment purposes means the failure to comply with any drinking water standard as adopted by the state of Iowa as designated by the department.

“Viability” for viability assessment purposes is the ability to remain in compliance insofar as the requirements of the federal Safe Drinking Water Act and 567—Chapters 40 through 43 and 81.

“Viable system” for viability assessment purposes means a system with the technical, financial, and managerial ability to comply with applicable drinking water standards adopted by the state of Iowa.

43.8(2) Applicability and purpose. These rules apply to all new and existing public water supplies, including the following: new systems commencing operation after October 1, 1999; systems deemed to be in significant noncompliance with the primary drinking water standards; DWSRF applicants; and existing systems. The purpose of the viability assessment program is to ensure the safety of the public drinking water supplies and ensure the viability of new public water supply systems upon commencement of operation. The department may assess public notification requirements and administrative penalties to any public water supply system which fails to fulfill the requirements of this rule.

43.8(3) Contents of a viability assessment. The viability assessment must address the areas of technical, financial, and managerial viability for a public water supply system. The assessment must include evaluation of the following areas at a minimum, and the public water supply system may be required to include additional information as directed by the department. The viability of a system should be forecast for a 20-year period.

a. Technical viability.

- (1) Supply sources and facilities
- (2) Treatment
- (3) Infrastructure (examples: pumping, storage, distribution)

b. Financial viability.

- (1) Capital and operating costs
- (2) Revenue sources
- (3) Contingency plans

c. Managerial viability.

- (1) Operation
- (2) Maintenance
- (3) Management
- (4) Administration

43.8(4) New systems.

a. Submission of system viability assessment. New public water supply systems (including community, nontransient noncommunity systems, and transient noncommunity systems) commencing operation after the effective date of this rule are required to submit a completed system viability assessment for review by the department, prior to obtaining a construction permit. The viability assessment may be submitted with the application for a construction permit. The department may reject receipt or delay review of the construction plans and specifications until an adequate viability assessment is provided. If the department finds, upon review and approval of the viability assessment, that the PWS will be viable, a construction permit will be issued in accordance with 567—Chapters 40 and 43. Prior to beginning operation, a public water supply operation permit must be obtained in accordance with 567—43.2(455B) and 567—40.5(455B).

b. Review of the viability assessment. If the department declines to approve the viability assessment as submitted by the applicant, or if the department finds that the PWS is not viable, approval of construction and operation permit applications will be denied. If the viability assessment is conditionally approved, construction and operation permits will be issued, with conditions and a schedule to achieve compliance specified in the operation permit.

43.8(5) Existing systems.

a. Submission of system viability assessment. Any community, nontransient noncommunity, or transient noncommunity water system which operated prior to October 1, 1999, and was regulated as a public water system by the department shall be considered an existing system. Any system which does not currently meet the definition of a PWS, but which expands their infrastructure and thereby grows to become a PWS is considered a new system. Systems not currently meeting the definition of a PWS and which add additional users and thereby become a PWS without constructing any additional infrastructure are considered existing systems for the purposes of this subrule. All PWSs should complete a viability assessment. However, only those existing PWSs which meet one or more of the following criteria are required to complete a viability assessment for the department's review and approval.

(1) Systems applying for DWSRF loan funds.

(2) Systems categorized as being in significant noncompliance by the department, due to their history of failure to comply with drinking water standards.

(3) Systems identified by the department via a sanitary survey as having technical, managerial, or financial problems as evidenced by such conditions as poor operational control, a poor state of repair or maintenance, vulnerability to contamination, or inability to maintain adequate distribution system operating pressures.

(4) Systems which have been unable to retain a certified operator in accordance with 567—Chapter 81.

b. Review of viability assessments for systems required to submit an assessment. If the assessment is incomplete and does not include all of the required elements, the supply will be notified in writing and will be given an opportunity to modify and resubmit the assessment within the time period specified by the department. If the system fails to resubmit a completed viability assessment as specified by the department, the department may find that the system is not viable. If the submitted assessment is complete, the department will either indicate that the system is viable or not viable after the assessment review process. The system will be notified of the results of the evaluation by the department.

c. Review of voluntarily submitted viability assessments. It is recommended that all existing systems complete the viability assessment and submit it to the department. Voluntarily submitted assessments may be reviewed upon request and will be exempt from any requirements to modify the assessment if it is not approved, or from a determination that the system is not viable, providing the system does not meet any of the criteria for mandatory completion of a viability assessment as set forth in 43.8(4) "a" above.

43.8(6) Systems which are determined to be not viable.

a. Applicability. The following applies to community, nontransient noncommunity, and transient noncommunity systems:

(1) Systems applying for DWSRF loan funds must be viable, or the loan funds must be used to assist the system in attaining viable status. If a system making a loan application is found to be not viable, and

loan funds will not be sufficient or available to ensure viability, then the situation must be corrected to the department's satisfaction prior to qualification to apply for loan funds.

(2) Systems which meet the department's criteria of significant noncompliance are not considered viable. The viability assessment completed by the public water supply and the most recent sanitary survey results will be evaluated by the department to assist the system in returning to and remaining in compliance, which would achieve viability. Required corrective actions will be specified in the system's operation permit and will include a compliance schedule. Field office inspections will be conducted on an as-needed basis to assist the system in implementing the required system improvements.

(3) Systems experiencing technical, managerial, or financial problems as noted by department in the sanitary survey will be considered not viable. The viability assessment completed by the public water supply will be evaluated by the department to assist the system in attaining viability, and any required corrective actions will be specified in the system's operation permit.

(4) Systems unable to retain a certified operator will be considered not viable. All community and nontransient noncommunity water systems, and transient noncommunity water systems as denoted by the department, are required to have a certified operator who meets the requirements of 567—Chapter 81. The viability assessment completed by the public water supply will be used to determine the source of the problem, and required corrective actions will be specified in the system's operation permit.

b. Reserved.

43.8(7) *Revocation or denial of operation or construction permit.*

a. *Revocation or denial of an operation permit.* Failure to correct the deficiencies regarding viability, as identified in accordance with a compliance schedule set by the department, may result in revocation or denial of the system's operation permit. If the department revokes or denies the operation permit, the owner of the system must negotiate an alternative arrangement with the department for providing treatment or water supply services within 30 days of receipt of the notification by the department unless the owner of the supply appeals the decision to the department. The public water supply is required to provide water that continually meets all health-based standards during the appeal process.

b. *Denial of new construction permits for an existing system.* In addition to the criteria provided in 567—Chapters 40 through 44, new construction permits for water system improvements may be denied until the system makes the required corrections and attains viable status unless the proposed project is necessary to attain viability.

c. *Failure to conform to approved construction plans and specifications, or to comply with the requirements of 567—Chapters 40 to 44.* Failure of a project to conform to approved construction plans and specifications, or failure to comply with the requirements of 567—Chapters 40 to 44, constitutes grounds for the director to withhold the applicable construction and operation permits. The system is then responsible for ensuring that the identified problem with the project is rectified so that permits may be issued. Once an agreement for correcting the problem is reached between the department and the system, the department will issue the appropriate permits according to the provisions of the agreement. If an agreement cannot be reached within a reasonable time period, the permit shall be denied.

d. *Contents of the notification denying the permit.* The notification of denial or withholding approval of the operation or construction permit will state the department's reasons for withholding or denying permit approval.

43.8(8) *Appeals.*

a. *Request for formal review of determination of viability.* A person or entity who disagrees with the decision regarding the viability of a public water supply system may request a formal review of the action. A request for review must be submitted in writing to the director by the owner or their designee within 30 days of the date of notification by the department of the viability decision.

b. *Appeal of denial of operation or construction permit.* A decision to deny an operation or construction permit may be appealed by the applicant to the environmental protection commission pursuant to 567—Chapter 7. The appeal must be made in writing to the director within 30 days of receiving the notice of denial by the owner of the public water supply.

567—43.9(455B) Enhanced filtration and disinfection requirements for surface water and IGW systems serving at least 10,000 people.**43.9(1) General requirements.**

a. Applicability. The requirements of this rule constitute national primary drinking water regulations. This rule establishes the filtration and disinfection requirements that are in addition to criteria under which filtration and disinfection are required in 567—43.5(455B). The requirements of this rule are applicable, beginning January 1, 2002, to all public water systems using surface water or groundwater under the direct influence of surface water, in whole or in part, and which serve at least 10,000 people. This rule establishes or extends treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, *Cryptosporidium*, and turbidity. Each surface water or groundwater under the direct influence of surface water system serving at least 10,000 people must provide treatment of its source water that complies with these treatment technique requirements and they are in addition to those identified in subrule 43.5(1). The treatment technique requirements consist of installing and properly operating water treatment processes that reliably achieve:

(1) At least 99 percent (2-log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems.

(2) Compliance with the profiling and benchmark requirements under 43.9(2).

(3) The department may require other surface water or groundwater under the direct influence of surface water systems to comply with this rule, through an operation permit.

b. Compliance determination. A public water system subject to the requirements of this rule is considered to be in compliance with the requirements of 43.9(1)“a” if it meets the applicable filtration requirements in either 43.5(3) or 43.9(3) and the disinfection requirements in 43.5(2) and 43.6(2).

c. Prohibition of new construction of uncovered intermediate or finished water storage facilities. Systems that are required to comply with this rule may construct only covered intermediate or finished water storage facilities. For the purposes of this rule, an intermediate storage facility is defined as a storage facility or reservoir after the clarification treatment process.

d. Systems with populations that increased after January 1, 2002, to more than 10,000 people served. Systems using surface water or influenced groundwater sources that did not conduct optional monitoring under 43.9(2) because they served fewer than 10,000 persons when such monitoring was required, but serve more than 10,000 persons prior to January 1, 2005, must comply with 43.9(1), 43.9(3), 43.9(4), and 43.9(5). These systems must also consult with the department to establish a disinfection benchmark. A system that decides to make a significant change to its disinfection practice as described in 43.9(2)“c”(1)“1” through “4” must consult with the department prior to making such a change.

43.9(2) Disinfection profiling and benchmarking.

a. Determination of systems required to profile. A public water system subject to the requirements of this rule must determine its total trihalomethane (TTHM) and haloacetic acid (HAA5) annual averages using the procedures listed below. The annual average is the arithmetic average of the quarterly averages of four consecutive quarters of monitoring. Both the TTHM and HAA5 samples must be collected as paired samples during the same time period in order for each parameter to have the same annual average period for result comparison. A paired sample is one that is collected at the same location and time and is analyzed for both TTHM and HAA5 parameters.

(1) Allowance of information collection rule data. Those systems that collected data under the provisions of the federal Information Collection Rule listed in Code of Federal Regulations Title 40, Part 141, Subpart M, must use the results of the TTHM and HAA5 samples collected during the last four quarters of monitoring required under 40 CFR 141.142. The system must have submitted the results of the samples collected during the last 12 months of required monitoring.

(2) Systems that have not collected TTHM and HAA5 data under 43.9(2)“a”(1). Those systems that have not collected four consecutive quarters of paired TTHM and HAA5 samples as described under 43.9(2)“a”(1) must comply with all other provisions of this subrule as if the HAA5 monitoring had been

conducted and the results of that monitoring required compliance with 43.9(2) “b.” The system that elects this option must notify the department in writing of its decision.

(3) The department may require that a system use a more representative annual data set than the data set determined under 567—subparagraph 42.9(2) “a”(1) for the purpose of determining applicability of the requirements of this subrule.

(4) Profiling determination criteria. Any system having either a TTHM annual average greater than 0.064 mg/L or an HAA5 annual average greater than 0.048 mg/L during the period identified in 43.9(2) “a”(1) through (3) must comply with 43.9(2) “b.”

b. Disinfection profiling.

(1) Applicability. Any system that meets the criteria in 43.9(2) “a”(4) must develop a disinfection profile of its disinfection practice for a period of up to three years.

(2) Monitoring requirements. The system must monitor daily for a period of 12 consecutive calendar months to determine the total logs of inactivation for each day of operation, based on the CT_{99.9} values in Tables 1 through 8 in Appendix A, as appropriate, through the entire treatment plant. This system must begin this monitoring as directed by the department. As a minimum, the system with a single point of disinfectant application prior to entrance to the distribution system must conduct the monitoring in 43.9(2) “b”(2) “1” through “4.” A system with more than one point of disinfectant application must conduct the monitoring in 43.9(2) “b”(2) “1” through “4” for each disinfection segment. The system must monitor the parameters necessary to determine the total inactivation ratio, using analytical methods in 43.5(4) “a” as follows:

1. The temperature of the disinfected water must be measured once per day at each residual disinfectant concentration sampling point during peak hourly flow.

2. If the system uses chlorine, the pH of the disinfected water must be measured once per day at each chlorine residual disinfectant concentration sampling point during peak hourly flow.

3. The disinfectant contact time(s) (“T”) must be determined for each day during peak hourly flow.

4. The residual disinfectant concentration(s) (“C”) of the water before or at the first customer and prior to each additional point of disinfection must be measured each day during peak hourly flow.

(3) Use of existing data. A system that has existing operational data may use those data to develop a disinfection profile for additional years, in addition to the disinfection profile generated under 43.9(2) “b”(2). Such systems may use these additional yearly disinfection profiles to develop a benchmark under the provisions of 43.9(2) “c.” The department must determine whether these operational data are substantially equivalent to data collected under the provisions of 43.9(2) “b”(2). These data must also be representative of inactivation through the entire treatment plant and not just of certain treatment segments.

(4) Calculation of the total inactivation ratio. The system must calculate the total inactivation ratio as follows, using the CT_{99.9} values from Tables 1 through 8 listed in Appendix A:

1. If the system uses only one point of disinfectant application, the system may determine the total inactivation ratio for the disinfection segment based on either of the following two methods:

- Determine one inactivation ratio (CT_{calc}/CT_{99.9}) before or at the first customer during peak hourly flow.

- Determine successive CT_{calc}/CT_{99.9} values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the system must calculate the total inactivation ratio by determining (CT_{calc}/CT_{99.9}) for each sequence and then adding the (CT_{calc}/CT_{99.9}) values together to determine Σ(CT_{calc}/CT_{99.9}).

2. If the system uses more than one point of disinfectant application before the first customer, the system must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The CT_{calc}/CT_{99.9} value of each segment and Σ(CT_{calc}/CT_{99.9}) must be calculated using the method in 43.9(2) “b”(4) “1.”

3. The system must determine the total logs of inactivation by multiplying the value calculated in 43.9(2) “b”(4) “1” or “2” by 3.0.

(5) Systems using chloramines or ozone. A system that uses either chloramines or ozone for primary disinfection must also calculate the logs of inactivation for viruses using a method approved by the department.

(6) Profile retention requirements. The system must retain disinfection profile data in graphic form, as a spreadsheet, or in some other format acceptable to the department for review as part of sanitary surveys conducted by the department. The department may require the system to submit the data to the department directly or as part of a monthly operation report.

c. Disinfection benchmarking.

(1) Significant change to disinfection practice. Any system required to develop a disinfection profile under the provisions of 43.9(2)“a” or “b” that decides to make a significant change to its disinfection practice must obtain department approval prior to making such change. Significant changes to disinfection practice are:

1. Changes to the point of disinfection;
2. Changes to the disinfectant(s) used in the treatment plant;
3. Changes to the disinfection process; and
4. Any other modification identified by the department.

(2) Calculation of the disinfection benchmark. Any system that is modifying its disinfection practice must calculate its disinfection benchmark using the procedure specified below:

1. For each year of profiling data collected and calculated under 43.9(2)“b,” the system must determine the lowest average monthly *Giardia lamblia* inactivation in each year of profiling data. The system must determine the average *Giardia lamblia* inactivation for each calendar month for each year of profiling data by dividing the sum of daily *Giardia lamblia* inactivation by the number of values calculated for that month.

2. The disinfection benchmark is the lowest monthly average value (for systems with one year of profiling data) or average of lowest monthly average values (for systems with more than one year of profiling data) of the monthly logs of *Giardia lamblia* inactivation in each year of profiling data.

(3) A system that uses either chloramines or ozone for primary disinfection must also calculate the disinfection benchmark for viruses using a method approved by the department.

(4) The system must submit the following information to the department as part of its consultation process:

1. A description of the proposed change;
2. The disinfection profile for *Giardia lamblia* (and, if necessary, viruses) under 43.9(2)“b” and the disinfection benchmark as required by 43.9(2)“c”(2); and
3. An analysis of how the proposed change will affect the current levels of disinfection.

43.9(3) Filtration.

a. Conventional filtration treatment or direct filtration.

(1) Turbidity requirement in 95 percent of samples. For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system’s filtered water (combined filter effluent or CFE) must be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month, measured as specified in 43.5(4)“a”(1) and 43.5(4)“b”(1).

(2) Maximum turbidity level. The turbidity level of representative samples of a system’s filtered water (combined filter effluent or CFE) must at no time exceed 1 NTU, measured as specified in 43.5(4)“a”(1) and 43.5(4)“b”(1). If at any time the combined filter effluent turbidity exceeds 1 NTU, either in a grab sample used for compliance or in a continuously monitored flow, the system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under 567—subparagraph 42.1(3)“b”(3).

(3) Systems with lime-softening treatment. A system that uses lime softening may acidify representative samples prior to analysis using a protocol approved by the department.

b. Filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration. The department may allow a public water system to use a filtration technology not listed in 43.9(3)“a” or 43.5(3)“c” or “d” if it demonstrates to the department, using pilot plant studies or other means, that the alternative filtration technology, in combination with

disinfection treatment that meets the requirements of 43.5(2), consistently achieves 99.9 percent removal or inactivation of *Giardia lamblia* cysts, 99.99 percent removal or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts and the department approves the use of the filtration technology. For each approval, the department will set turbidity performance requirements that the system must meet at least 95 percent of the time and the requirement that the system shall not exceed at any time at a level that consistently achieves 99.9 percent removal or inactivation of *Giardia lamblia* cysts, 99.99 percent removal or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts.

43.9(4) Filtration sampling requirements.

a. Monitoring requirements for systems using filtration treatment. In addition to monitoring required by 43.5(4), a public water system subject to the requirements of this rule that provides conventional filtration treatment or direct filtration must conduct continuous monitoring of turbidity for each individual filter using an approved method in 43.5(4) “a”(1) and must calibrate turbidimeters at least every 90 days with a primary standard. The calibration of each turbidimeter used for compliance must be verified at least once per week with a primary standard, secondary standards, or the manufacturer’s proprietary calibration confirmation device or by a method approved by the department. If the verification is not within plus or minus 0.05 NTU for measurements of less than or equal to 0.5 NTU, or within plus or minus 10 percent of measurements greater than 0.5 NTU, then the turbidimeter must be recalibrated. Systems must record the results of individual filter monitoring every 15 minutes.

b. Failure of the continuous turbidity monitoring equipment. If there is a failure in the continuous turbidity monitoring equipment, the system must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is repaired and back online. A system has a maximum of five working days after failure to repair the equipment, or else it is in violation.

43.9(5) Reporting and record-keeping requirements. In addition to the reporting and record-keeping requirements in 567—paragraph 42.4(3) “c,” a system subject to the requirements of this rule that provides conventional filtration treatment or direct filtration must report monthly to the department the information specified in 43.9(5) “a” and “b” beginning January 1, 2002. In addition to the reporting and record-keeping requirements in 567—paragraph 42.4(3) “c,” a system subject to the requirements of this rule that provides filtration approved under 43.9(3) “b” must report monthly to the department the information specified in 43.9(5) “a” beginning January 1, 2002. The reporting in 43.9(5) “a” is in lieu of the reporting specified in 567—subparagraph 42.4(3) “c”(1).

a. Turbidity. Turbidity measurements as required by 43.9(3) must be reported in a format acceptable to the department and within ten days after the end of each month that the system serves water to the public. Information that must be reported includes:

(1) The total number of filtered water (combined filter effluent or CFE) turbidity measurements taken during the month;

(2) The number and percentage of filtered water (combined filter effluent or CFE) turbidity measurements taken during the month which are less than or equal to the turbidity limits specified in 43.9(3) “a” or “b”; and

(3) The date and value of any combined filter effluent or CFE turbidity measurements taken during the month which exceed 1 NTU for systems using conventional filtration treatment or direct filtration or which exceed the maximum level set by the department under 43.9(3) “b.”

(4) The dates and summary of calibration and verification of all compliance turbidimeters.

b. Individual filter turbidity monitoring. Systems must maintain the results of individual filter turbidity per monitoring taken under 43.9(4) for at least three years. Systems must report to the department that they have conducted individual filter turbidity monitoring under 43.9(4) within ten days after the end of each month that the system serves water to the public. Systems must report to the department individual filter turbidity measurement results taken under 43.9(4) within ten days after the end of each month that the system serves water to the public only if measurements demonstrate one or more of the conditions specified in 43.9(5) “b”(1) through (4). Systems that use lime softening may apply to the department for alternative exceedance levels for the levels specified in 43.9(5) “b”(1) through (4) if they can demonstrate that higher turbidity levels in individual filters are due to lime carryover only and not due to degraded filter performance.

(1) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart, the system must report the filter number, the turbidity measurement, and the date(s) on which the exceedance occurred. In addition, the system must either produce a filter profile for the filter within seven days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedance.

(2) For any individual filter that has a measured turbidity level of greater than 0.5 NTU in two consecutive measurements taken 15 minutes apart anytime following the first four hours of continuous filter operation after the filter has been backwashed or otherwise taken offline, the system must report the filter number, the turbidity, and the date(s) on which the exceedance occurred. In addition, the system must either produce a filter profile for the filter within seven days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedance.

(3) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each month of three consecutive months, the system must report the filter number, the turbidity measurement, and the date(s) on which the exceedance occurred. In addition, the system must conduct a self-assessment of the filter within 14 days of the exceedance and report that the self-assessment was conducted. The self-assessment must consist of at least the following components: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report.

(4) For any individual filter that has a measured turbidity level of greater than 2.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each month of two consecutive months, the system must report the filter number, the turbidity measurement, and the date(s) on which the exceedance occurred. In addition, the system must arrange for a comprehensive performance evaluation to be conducted by the department or a third party approved by the department no later than 30 days following the exceedance and have the evaluation completed and submitted to the department no later than 90 days following the exceedance.

c. Additional reporting requirement for turbidity combined filter effluent.

(1) If at any time the turbidity exceeds 1 NTU in representative samples of filtered water (combined filter effluent or CFE) in a system using conventional filtration treatment or direct filtration, the system must consult with the department as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under 567—subparagraph 42.1(3) “b”(3).

(2) If at any time the turbidity in representative samples of filtered water (combined filter effluent or CFE) exceeds the maximum level set by the department under 43.9(3) “b” for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, the system must consult with the department as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under 567—subparagraph 42.1(3) “b”(3).

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—43.10(455B) Enhanced filtration and disinfection requirements for surface water and IGW systems serving fewer than 10,000 people.

43.10(1) General requirements.

a. Applicability. The requirements of this rule constitute national primary drinking water regulations. This rule establishes requirements for filtration and disinfection that are in addition to criteria under which filtration and disinfection are required in 567—43.5(455B). The requirements of this rule are applicable beginning January 1, 2005, unless otherwise noted, to all public water systems using surface water or groundwater under the direct influence of surface water, in whole or in part, and which serve less than 10,000 people. This rule establishes or extends treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, *Cryptosporidium*, and turbidity. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(1) At least 99 percent (2 log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems; and

(2) Compliance with the profiling and benchmark requirements in subrules 43.10(2) and 43.10(3).

b. Prohibition of new construction of uncovered intermediate or finished water storage facilities. Systems that are required to comply with this rule may construct only covered intermediate or finished water storage facilities. For the purposes of this rule, an intermediate storage facility is defined as a storage facility or reservoir after the clarification treatment process.

43.10(2) Disinfection profile.

a. Applicability. A disinfection profile is a graphical representation of a system's level of *Giardia lamblia* or virus inactivation measured during the course of a year. All systems required to comply with this rule must develop a disinfection profile unless the department determines that such a profile is unnecessary. Records must be maintained according to subrule 43.10(7).

(1) The department may approve the use of a more representative data set for disinfection profiling than the data set required in paragraph 43.10(2) "b."

(2) The department may determine that a system's profile is unnecessary only if a system's TTHM and HAA5 levels are below 0.064 mg/L and 0.048 mg/L, respectively. To determine these levels, TTHM and HAA5 samples must be collected after January 1, 1998, during the month with the warmest water temperature, and at the point of maximum residence time in the distribution system. The department may approve the use of a more representative annual data set for purpose of determining applicability of the requirements of this subrule. The annual data set must be calculated on an annual average, of the arithmetic average of the quarterly averages of four consecutive quarters of monitoring. At least 25 percent of the samples collected in each quarter must be collected at the maximum residence time location in the distribution system.

1. For systems that provide water to other public water supplies, if the producing system meets the byproduct level requirements of less than 0.064 mg/L for TTHM and less than 0.048 mg/L for HAA5, it will not be required to develop a disinfection profile and benchmark unless:

- The consecutive system cannot meet in its distribution system the byproduct level requirements of less than 0.064 mg/L for TTHM and less than 0.048 mg/L for HAA5, and
- The producing system wants to make a significant change to its disinfection practices.

2. The department will then assign the requirement to the producing system to conduct the disinfection profiling study and determine a disinfection benchmark.

b. Required elements of a disinfection profile.

(1) Collection of the following data for 12 consecutive months, beginning by July 1, 2003, for systems serving 500 to 9,999 people, and by January 1, 2004, for systems serving fewer than 500 people. A system must monitor the following parameters to determine the total log inactivation by using the analytical methods in paragraph 43.5(4) "a," once per week on the same calendar day, over 12 consecutive months.

1. Temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow, measured in degrees Celsius;

2. For systems using chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow, measured in standard pH units;

3. The disinfectant contact time ("T") during peak hourly flow, measured in minutes; and

4. The residual disinfectant concentration(s) ("C") of the water following each point of disinfection at a point(s) prior to each subsequent point of disinfection and at the entry point to the distribution system or at a location just prior to the first customer during peak hourly flows, measured in mg/L.

(2) The data collected in 43.10(2) "b"(1) must be used to calculate the weekly log inactivation, along with the CT_{99.9} tables listed in Appendix A. The system must calculate the total inactivation ratio as follows and multiply the value by 3.0 to determine log inactivation of *Giardia lamblia*:

1. If the system uses only one point of disinfectant application, it must determine:

- One inactivation ratio (CT calc/CT_{99.9}) before or at the first customer during peak hourly flow, or
- Successive (CT calc/CT_{99.9}) values, representing sequential inactivation ratios, between the point of disinfection application and a point before or at the first customer during peak hourly flow. Under this

alternative, the system must calculate the total inactivation ratio by determining ($CT_{calc}/CT_{99.9}$) for each sequence and then adding the ($CT_{calc}/CT_{99.9}$) values together to determine ($\Sigma CT_{calc}/CT_{99.9}$).

2. If a system uses more than one point of disinfectant application before the first customer, the system must determine the ($CT_{calc}/CT_{99.9}$) value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow using the procedure specified in 43.10(2)“b”(2) “1,” second bulleted paragraph.

3. If a system uses chloramines, ozone, or chlorine dioxide for primary disinfection, the system must also calculate the inactivation logs for viruses and develop an additional disinfection profile for viruses using methods approved by the department.

(3) The weekly log inactivations are used to develop a disinfection profile, as follows:

1. The disinfection profile is developed by graphing each log inactivation data point versus time. Each log inactivation serves as a data point in the disinfection profile. The system will have obtained 52 measurements at a minimum, one for each week of the year.

2. The disinfection profile depicts the variation of microbial inactivation over the course of the year.

3. The system must retain the disinfection profile data both in a graphic form and in a spreadsheet, which must be available for review by the department.

4. This profile is used to calculate a disinfection benchmark if the system is considering changes to its disinfection practices.

43.10(3) Disinfection benchmark.

a. *Applicability.* Any system required to develop a disinfection profile under 43.10(2) must develop a disinfection benchmark prior to making any significant change in disinfection practice. The system must receive department approval before any significant change in disinfection practice is implemented. Records must be maintained according to subrule 43.10(7).

b. *Significant changes to disinfection practice.* Significant changes to disinfection practice include:

- (1) Changes to the point of disinfection;
- (2) Changes to the disinfectant(s) used in the treatment plant;
- (3) Changes to the disinfection process; or
- (4) Any other modification identified by the department.

c. *Calculation of the disinfection benchmark.* The system must calculate the disinfection benchmark in the following manner:

(1) Step 1. Using the data collected to develop the disinfection profile, the system must determine the average *Giardia lamblia* inactivation for each calendar month by dividing the sum of all *Giardia lamblia* inactivations for that month by the number of values calculated for that month.

(2) Step 2. The system must determine the lowest monthly average value out of the 12 values. This value becomes the disinfection benchmark.

d. *Information required for department approval of a change in disinfection practice.* Any significant change in disinfection practice must have been approved by the department before the system institutes the change. The following information must be submitted by the system to the department as part of the consultation and approval process.

- (1) A description of the proposed change;
- (2) The disinfection profile for *Giardia lamblia* and, if necessary, viruses;
- (3) The disinfection benchmark;
- (4) An analysis of how the proposed change will affect the current levels of disinfection; and
- (5) Any additional information requested by the department.

e. *Additional benchmark requirements if chloramines, ozone, or chlorine dioxide is used for primary disinfection.* If a system uses chloramines, ozone, or chlorine dioxide for primary disinfection, the system must calculate the disinfection benchmark from the data collected for viruses to develop the disinfection profile in addition to the *Giardia lamblia* disinfection benchmark calculated in paragraph 43.10(3)“c.” This viral benchmark must be calculated in the same manner used to calculate the *Giardia lamblia* disinfection benchmark in paragraph 43.10(3)“c.”

43.10(4) Combined filter effluent turbidity requirements. All systems using surface water or groundwater under the direct influence of surface water which serve less than 10,000 people must use

filtration, and the turbidity limits that must be met depend upon the type of filtration used. Systems using lime softening may acidify representative combined filter effluent turbidity samples prior to analysis, using a protocol approved by the department.

a. Conventional filtration treatment or direct filtration.

(1) Turbidity must be measured in the combined filter effluent as described in paragraphs 43.5(4) “a” and “b.”

(2) The turbidity in the combined filter effluent must be less than or equal to 0.3 NTU in 95 percent of the turbidity measurements taken each month.

(3) The turbidity in the combined filter effluent must never exceed 1 NTU at any time during the month. If at any time the combined filter effluent turbidity exceeds 1 NTU, either in a grab sample used for compliance or in a continuously monitored flow, the system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under 567—subparagraphs 42.1(3) “b”(3) and 42.1(2) “a”(8).

(4) The monthly reporting requirements are listed in subrule 43.10(6).

b. Slow sand filtration or diatomaceous earth filtration.

(1) Turbidity must be measured in the combined filter effluent as described in paragraphs 43.5(4) “a” and “b.”

(2) The combined filter effluent turbidity limits of subrule 43.5(3) must be met.

(3) The monthly reporting requirements are listed in subrule 43.10(6).

c. Other alternative filtration technologies. By using pilot studies or other means, a system using alternative filtration must demonstrate to the satisfaction of the department that the system’s filtration, in combination with disinfection treatment, consistently achieves 99 percent removal of *Cryptosporidium* oocysts; 99.9 percent removal, inactivation, or a combination of both, of *Giardia lamblia* cysts; and 99.99 percent removal, inactivation, or a combination of both, of viruses. The department will then use the pilot study data to determine system-specific turbidity limits.

(1) Turbidity must be measured in the combined filter effluent as described in paragraphs 43.5(4) “a” and “b.”

(2) The turbidity must be less than or equal to a value set by the department in 95 percent of the combined filter effluent turbidity measurements taken each month, based on the pilot study. The value may not exceed 1 NTU.

(3) The combined filter effluent turbidity must never exceed a value set by the department, based on the pilot study. The value may not exceed 5 NTU.

(4) The monthly reporting requirements are listed in subrule 43.10(6).

43.10(5) Individual filter turbidity requirements. All systems utilizing conventional filtration or direct filtration must conduct continuous monitoring of turbidity for each individual filter. Records must be maintained according to subrule 43.10(7).

a. Continuous turbidity monitoring requirements. Following are the continuous turbidity monitoring requirements.

(1) Monitoring must be conducted using an approved method listed in paragraph 43.5(4) “a”;

(2) Calibration of turbidimeters must be conducted at least every 90 days with a primary standard. The calibration of each turbidimeter used for compliance must be verified at least once per week with a primary standard, secondary standards, or the manufacturer’s proprietary calibration confirmation device or by a method approved by the department. If the verification is not within plus or minus 0.05 NTU for measurements of less than or equal to 0.5 NTU, or within plus or minus 10 percent of measurements greater than 0.5 NTU, the turbidimeter must be recalibrated;

(3) Results of turbidity monitoring must be recorded at least every 15 minutes;

(4) Monthly reporting must be completed according to subrule 43.10(6); and

(5) Records must be maintained according to 43.10(7).

b. Failure of continuous turbidity monitoring equipment. If there is a failure in the continuous turbidity monitoring equipment, the system must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is back on-line. A system has a maximum of 14 days after

failure to repair the equipment, or else the system is in violation. The system must notify the department within 24 hours of both when the turbidimeter was taken off-line and when it was returned on-line.

c. Special provision for one-filter or two-filter systems. If a system has only one or two filters, it may conduct continuous monitoring of the combined filter effluent turbidity instead of individual effluent turbidity monitoring. The continuous monitoring of the combined filter effluent turbidity must meet the requirements listed in 43.10(5) "a" and "b."

d. Alternative turbidity levels for systems using lime softening. Systems using lime softening may apply to the department for alternative turbidity exceedance levels for the levels specified in 43.10(5) "e." The system must be able to demonstrate to the satisfaction of the department that higher turbidity levels are due to lime carryover only, and not due to degraded filter performance.

e. Requirements triggered by the individual filter turbidity monitoring data. Systems are required to conduct additional activities based upon their individual filter turbidity monitoring data, as listed in this paragraph.

(1) If the turbidity of an individual filter (or the turbidity of the combined filter effluent for a system with one or two filters, pursuant to 43.10(5) "c") exceeds 1.0 NTU in two consecutive recordings taken 15 minutes apart, the system must report the following information in the monthly operation report to the department by the tenth day of the following month:

1. The filter number(s);
2. Corresponding date(s);
3. Turbidity value(s) which exceeded 1.0 NTU; and
4. The cause of the exceedance(s), if known.

(2) If the turbidity of an individual filter (or the turbidity of the combined filter effluent for a system with one or two filters, pursuant to 43.10(5) "c") exceeds 1.0 NTU in two consecutive recordings 15 minutes apart in three consecutive months, the system must meet the following requirements:

1. The system must conduct a self-assessment of the filter(s) within 14 days of the day the filter exceeded 1.0 NTU in two consecutive measurements for the third straight month, unless a comprehensive performance evaluation as specified in the following paragraph is required. Two-filter systems that monitor the combined filter effluent turbidity instead of the individual filters must conduct a self-assessment of both filters.

2. The self-assessment must consist of at least the following components:
 - Assessment of filter performance;
 - Development of a filter profile;
 - Identification and prioritization of factors limiting filter performance;
 - Assessment of the applicability of corrections;
 - Preparation of a filter self-assessment report;
 - Date the self-assessment requirement was triggered; and
 - Date the self-assessment was completed.

(3) If the turbidity of an individual filter (or the turbidity of the combined filter effluent for a system with one or two filters, pursuant to 43.10(5) "c") exceeds 2.0 NTU in two consecutive recordings 15 minutes apart in two consecutive months, the system must meet the following requirements:

1. The system must arrange to have a comprehensive performance evaluation (CPE) conducted by the department or a third party approved by the department no later than 60 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month. The CPE report must be completed and submitted to the department within 120 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.

2. A new CPE is not required if a CPE has been completed by the department or a third party approved by the department within the prior 12 months or if the system and department are jointly participating in an ongoing comprehensive technical assistance project at the system.

(4) The department may conduct a CPE at a system regardless of individual filter turbidity levels.

43.10(6) Reporting requirements. The system must meet the following reporting requirements:

a. Combined filter effluent turbidity monitoring.

(1) The following information must be reported in the monthly operation report to the department by the tenth day of the following month.

1. Total number of filtered water turbidity measurements taken during the month.
2. The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the system's required 95th percentile limit.
3. The date and analytical result of any turbidity measurements taken during the month which exceeded the maximum turbidity limit for the system, in addition to the requirements of (2).
4. The dates and summary of calibration and verification of all compliance turbidimeters.

(2) For an exceedance of the combined filter effluent maximum turbidity limit, the following requirements must be met.

1. If at any time the turbidity exceeds 1 NTU in representative samples of filtered water in a system using conventional filtration treatment or direct filtration, the system must consult with the department as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under 567—subparagraph 42.1(3)“b”(3).

2. If at any time the turbidity in representative samples of filtered water exceeds the maximum level under subrule 43.5(3) for slow sand filtration or diatomaceous earth filtration, the system must consult with the department as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under 567—subparagraph 42.1(3)“b”(3).

3. If at any time the turbidity in representative samples of filtered water exceeds the maximum level set by the department under paragraph 43.10(4)“c” for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, the system must consult with the department as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under 567—subparagraph 42.1(3)“b”(3).

b. Individual filter effluent turbidity monitoring. The following information must be reported in the monthly operation report to the department by the tenth day of the following month, unless otherwise noted.

(1) That the system conducted individual filter turbidity monitoring during the month.

(2) For any filter that had two consecutive measurements taken 15 minutes apart that exceeded 1.0 NTU, the following information must be reported:

1. The filter number(s);
2. The corresponding dates;
3. The turbidity values that exceeded 1.0 NTU; and
4. The cause, if known, of the exceedance.

(3) If a self-assessment was required, the date it was triggered and the date the assessment was completed must be reported. If the self-assessment requirement was triggered in the last four days of the month, the information must be reported to the department by the 14th day of the following month.

(4) If a comprehensive performance evaluation was required, the date it was triggered must be reported. A copy of the CPE report must be submitted to the department within 120 days of when the CPE requirement was triggered.

(5) The dates and summary of calibration and verification of all compliance turbidimeters.

c. Disinfection profiling. The following information must be reported to the department by January 1, 2004, for systems serving fewer than 500 people.

(1) Results of disinfection byproduct monitoring that indicate TTHM levels less than 0.064 mg/L and HAA5 levels less than 0.048 mg/L; or

(2) That the system has begun to collect the profiling data.

d. Disinfection benchmarking. Before a system that was required to develop a disinfection profile makes a significant change to its disinfection practice, it must report the following information to the department, and the system must receive department approval before any significant change in disinfection practice is implemented.

- (1) Description of the proposed change in disinfection practice;
- (2) The system's disinfection profile for *Giardia lamblia* and, if applicable, for viruses;
- (3) The system's disinfection benchmark; and

(4) An analysis of how the proposed change will affect the current levels of disinfection.

43.10(7) Record-keeping requirements. The system must meet the following record-keeping requirements, in addition to the record-keeping requirements in 567—paragraph 42.4(3)“c” and 567—42.5(455B).

a. Individual filter effluent turbidity requirements. The results of the individual filter effluent turbidity monitoring must be kept for at least three years.

b. Disinfection profiling requirements. The results of the disinfection profile, including raw data and analysis, must be kept indefinitely.

c. Disinfection benchmarking requirements. The results of the disinfection benchmark, including raw data and analysis, must be kept indefinitely.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—43.11(455B) Enhanced treatment for *Cryptosporidium*.

43.11(1) Applicability. The requirements of this rule are national primary drinking water regulations and establish or extend treatment technique requirements in lieu of maximum contaminant levels for *Cryptosporidium*. These requirements are in addition to the filtration and disinfection requirements of 567—43.5(455B), 567—43.9(455B) and 567—43.10(455B) and apply to all Iowa public water systems supplied by surface water or influenced groundwater sources.

a. Wholesale systems. Wholesale systems must comply with the requirements based on the population of the largest system in the combined distribution system.

b. Filtered systems. The requirements of this rule for filtered systems apply to systems that are required to provide filtration treatment pursuant to 567—43.5(455B), whether or not the system is currently operating a filtration system.

43.11(2) General requirements. Systems subject to this rule must comply with the following requirements:

a. Source water monitoring. Systems must conduct two rounds of source water monitoring for each plant that treats a surface water or influenced groundwater source. This monitoring may include sampling for *Cryptosporidium*, *E. coli*, and turbidity, as described in 43.11(3), to determine what level, if any, of additional *Cryptosporidium* treatment the systems must provide.

b. Disinfection profiles and benchmarks. Systems that plan to make a significant change to their disinfection practice must develop disinfection profiles and calculate disinfection benchmarks, as described in 43.11(4).

c. Cryptosporidium treatment bin determination. Systems must determine their *Cryptosporidium* treatment bin classification and provide additional treatment for *Cryptosporidium*, if required, according to the prescribed schedule.

d. Additional treatment for Cryptosporidium. Systems required to provide additional treatment for *Cryptosporidium* must implement microbial toolbox options that are designed and operated as described in 43.11(8) through 43.11(13).

e. Record keeping and reporting. Systems must comply with the applicable record-keeping and reporting requirements described in 43.11(14) and 43.11(15).

f. Significant deficiencies. Systems must address significant deficiencies identified during sanitary surveys as described in 43.1(7).

43.11(3) Source water monitoring.

a. Schedule. Systems must conduct the source water monitoring no later than the month and year listed in Table 1. A system may avoid the source water monitoring if the system provides a total of at least 5.5-log treatment for *Cryptosporidium*, equivalent to meeting the treatment requirements of Bin 4 in 43.11(6). The system must install and operate technologies to provide this level of treatment by the applicable treatment compliance date specified in 43.11(7).

Table 1: Source Water Monitoring Schedule

System	First round of monitoring	Second round of monitoring
Serves at least 100,000 people	October 2006	April 2015
Serves 50,000-99,999 people	April 2007	October 2015

System	First round of monitoring	Second round of monitoring
Serves 10,000-49,999 people	April 2008	October 2016
Serves fewer than 10,000 people and only conducts <i>E. coli</i> monitoring	October 2008	October 2017
Serves fewer than 10,000 people and conducts <i>Cryptosporidium</i> monitoring	April 2010	April 2019

b. *Monitoring requirements.* The minimum monitoring requirements are listed below. Systems may sample more frequently, provided the sampling frequency is evenly spaced throughout the monitoring period.

(1) Systems serving at least 10,000 people. Systems serving at least 10,000 people must sample their source water for *Cryptosporidium*, *E. coli*, and turbidity at least monthly for 24 months.

(2) Systems serving fewer than 10,000 people. Systems serving fewer than 10,000 people are allowed to first conduct *E. coli* monitoring to determine if further monitoring for *Cryptosporidium* is required.

1. Systems must sample their source water for *E. coli* at least once every two weeks for 12 months. If the annual mean *E. coli* concentration is at or below 100 *E. coli* per 100 mL, the system can avoid further *Cryptosporidium* monitoring in that sampling round.

2. A system may avoid *E. coli* monitoring if the system notifies the department no later than three months prior to the *E. coli* monitoring start date that the system will conduct *Cryptosporidium* monitoring.

3. Systems that fail to conduct the required *E. coli* monitoring or that cannot meet the *E. coli* annual mean limit are required to conduct *Cryptosporidium* monitoring. The system must sample its source water for *Cryptosporidium* either at least twice per month for 12 months or at least monthly for 24 months.

4. A system that begins monitoring for *E. coli* and determines during the sampling period that the system mathematically cannot meet the applicable *E. coli* annual mean limit may discontinue the *E. coli* sampling. The system is then required to start *Cryptosporidium* monitoring according to the schedule in Table 1.

(3) Plants operating only part of the year. Systems with surface water or influenced groundwater treatment plants that operate for only part of the year must conduct source water monitoring in accordance with this rule, but with the following modifications.

1. Systems must sample their source water only during the months that the plant operates unless the department specifies another monitoring period based on plant operating practices.

2. Systems with plants that operate less than six months per year and that monitor for must collect at least six samples per year for two years. The samples must be evenly spaced throughout the period the plant operates.

(4) New sources. A system that begins using a new surface water or influenced groundwater source after the dates in Table 1 must monitor according to a schedule approved by the department and meet the requirements of this subrule. The system must also meet the requirements of the bin classification and *Cryptosporidium* treatment for the new source on a schedule approved by the department. The system must conduct the second round of source water monitoring no later than six years following the initial bin classification or determination of the mean *Cryptosporidium* level, as applicable.

(5) Monitoring violation determination. Failure to collect any source water sample required under this subrule in accordance with the sampling plan, location, analytical method, approved laboratory, or reporting requirements of 43.11(3)“c” through 43.11(3)“e” is a monitoring violation.

(6) Grandfathered monitoring data. Systems were allowed to use source water monitoring *Cryptosporidium* data collected prior to the applicable start date in Table 1 to meet the requirements of the first round of monitoring, a process referred to as grandfathering data. This grandfathered data substituted for an equivalent number of months at the end of the monitoring period and had to meet the requirements of 40 CFR 141.707 as adopted on January 5, 2006, which the department hereby adopts by reference. Department approval of the grandfathered data application is required.

c. *Sampling plan.* Systems must submit a sampling plan that specifies the sampling locations in relation to the sources and treatment processes and the calendar dates when the system will collect each required sample. The specific treatment process locations that must be included in the plan are pretreatment, points of chemical treatment, and filter backwash recycle.

(1) The sampling plan must be submitted no later than three months prior to the applicable monitoring date in Table 1. If the department does not respond to a system regarding the submitted sampling plan prior to the start of the monitoring period, the system must sample according to the submitted sampling plan.

(2) The plan must be submitted in a form acceptable to the department.

(3) The system must monitor within two days of the date specified in the plan, unless one of the following conditions occurs.

1. If an extreme condition or situation exists that may pose danger to the sample collector, or that cannot be avoided, and causes the system to be unable to sample in the scheduled five-day period, the system must sample as close to the scheduled date as is feasible unless the department approves an alternative sampling date. The system must submit an explanation for the delayed sampling date to the department within one week of the missed sampling period. A replacement sample must be collected.

2. If a system is unable to report a valid analytical result for a scheduled sampling date due to equipment failure, loss of or damage to the sample, failure to comply with the analytical method or quality control requirements, or failure of the laboratory to analyze the sample, the system must notify the department of the cause of the delay and collect a replacement sample.

3. A replacement sample must be collected within 21 days of the scheduled sampling period or on the resampling date approved by the department.

(4) Missed sampling dates. Systems that fail to meet the dates in their sampling plan for any source water sample must revise their sampling plan to add dates for collecting all missed samples. The revised schedule must be submitted to the department for approval prior to the collection of the missed samples.

d. *Sampling locations.* Systems must collect samples for each treatment plant that treats a surface water or influenced groundwater source. If multiple plants draw water from the same influent (same pipe or intake), the department may approve one set of monitoring results to be used to satisfy the requirements for those plants.

(1) Chemical treatment location. Systems must collect source water samples prior to chemical treatment. If the system cannot feasibly collect a sample prior to chemical treatment, the department may grant approval for the system to collect the sample after chemical treatment. This approval would only be granted if the department determines in writing that collecting the samples prior to chemical treatment is not feasible for the system and that the chemical treatment is unlikely to have a significant adverse effect on the analysis of the sample.

(2) Filter backwash recycle return location. Systems that recycle filter backwash water must collect the source water samples prior to the point of filter backwash water addition.

(3) Bank filtration credit sampling location.

1. Systems that receive *Cryptosporidium* treatment credit for bank filtration under 43.9(3)“b” or 43.10(4)“c” must collect source water samples in the surface water source prior to bank filtration.

2. Systems that use bank filtration as pretreatment to a filtration plant must collect source water samples from the well, which is after bank filtration has occurred. Use of bank filtration during monitoring must be consistent with routine operational practice. Systems collecting samples after a bank filtration process may not receive treatment credit for the bank filtration under 43.11(10)“c.”

(4) Multiple sources. Systems with plants that use multiple water sources, including multiple surface water sources and blended surface water and groundwater sources, must collect samples as follows:

1. The use of multiple sources during monitoring must be consistent with routine operational practice.

2. If a sampling tap is available where the sources are combined prior to treatment, the system must collect samples from that tap.

3. If a sampling tap where the sources are combined prior to treatment is not available, the system must collect samples at each source near the intake on the same day and must use either of the following options for sample analysis.

- Physically composite the source samples into a single sample for analysis. Systems may composite the sample from each source into one sample prior to analysis. The volume of the sample from each source must be weighted according to the proportion of the source in the total plant flow at the time the sample is collected.

- Analyze the samples separately and mathematically composite the results. Systems may analyze samples from each source separately and calculate a weighted average of the analytical results for each sampling date. The weighted average must be calculated by multiplying the analytical result for each source by the fraction that source contributed to the total plant flow at the time the sample was collected and then summing the weighted analytical results.

e. Analytical methodology, laboratory certification, and data reporting requirements. Systems must have samples analyzed pursuant to the specifications listed in this paragraph. The system must report, in a format acceptable to the department, the analytical results from the source water monitoring no later than ten days after the end of the first month following the month when the sample is collected.

(1) *Cryptosporidium*. Systems must have *Cryptosporidium* samples analyzed by a laboratory that is approved under EPA's Laboratory Quality Assurance Evaluation Program for Analysis of *Cryptosporidium* in Water.

1. These are the approved analytical methods for *Cryptosporidium*:

- "Method 1623: *Cryptosporidium* and *Giardia* in Water by Filtration/IMS/FA," 2005, US EPA, EPA-815-R-05-002. Available at www.nemi.gov;

- "Method 1622: *Cryptosporidium* in Water by Filtration/IMS/FA," 2005, US EPA, EPA-815-R-05-001. Available at www.nemi.gov; and

- "Method 1623.1: *Cryptosporidium* and *Giardia* in Water by Filtration/Immunomagnetic Separation/Immunofluorescence Assay Microscopy," 2012, EPA-816-R-12-001. Available at www.nepis.epa.gov.

2. Using one of the approved methods, the laboratory must analyze at least a 10 L sample or a packed pellet volume of at least 2 mL. Systems unable to process a 10 L sample must analyze as much sample volume as can be filtered by two filters specified in the method, up to a packed pellet volume of at least 2 mL.

3. A matrix spike (MS) sample must be spiked and filtered by the laboratory according to the approved method. If the volume of the MS sample is greater than 10 L, the system may filter all but 10 L of the MS sample in the field and ship the filtered sample and the remaining 10 L of source water to the laboratory. In this case, the laboratory must spike the remaining 10 L of water and filter it through the filter used to collect the balance of the sample in the field.

4. Flow cytometer-counted spiking suspensions must be used for the matrix spike samples and the ongoing precision and recovery samples.

5. The following data elements must be reported for each *Cryptosporidium* analysis:

- PWSID.
- Facility ID.
- Sample collection date.
- Sample type (i.e., field or matrix spike).
- Sample volume filtered (L), to the nearest 0.25 L.
- Whether 100 percent of the filtered volume was examined by the laboratory.
- Number of oocysts counted.
- For matrix spike samples: sample volume spiked and estimated number of oocysts spiked.
- For samples in which less than 10 L is filtered or less than 100 percent of the sample volume is examined: the number of filters used and the packed pellet volume.

- For samples in which less than 100 percent of sample volume is examined: the volume of resuspended concentrate and the volume of this resuspension processed through immunomagnetic separation.

(2) *E. coli*. Systems must have the *E. coli* samples analyzed by a laboratory certified by EPA, the National Environmental Laboratory Accreditation Conference, or the department for total coliform or fecal coliform analysis in drinking water samples using the same approved *E. coli* method for the analysis of source water.

1. The approved analytical methods for the enumeration of *E. coli* in source water are shown in Table 2.

Table 2: *E. coli* Analytical Methods

Method	EPA	Standard Methods	Other
Most probable number with multiple tube or multiple well ^{1, 2}		9223 B ¹¹	991.15 ⁴ Colilert ^{3, 5} Colilert-18 ^{3, 5, 6}
Membrane filtration, single step ^{1, 7, 8}	1603 ⁹		m-ColiBlue24 ¹⁰
Membrane filtration, two step		9222D/9222G ¹²	

¹Tests must be conducted to provide organism enumeration (i.e., density). Select the appropriate configuration of tubes/filtrations and dilutions/volumes to account for the quality, consistency, and anticipated organism density in the water sample.

²Samples shall be enumerated by the multiple-tube or multiple-well procedure. Using multiple-tube procedures, employ an appropriate tube and dilution configuration of the sample as needed and report the Most Probable Number (MPN). Samples tested with Colilert® may be enumerated with the multiple-well procedures, Quanti-Tray®, Quanti-Tray® 2000, and the MPN calculated from the table provided by the manufacturer.

³These tests are collectively known as defined enzyme substrate tests, where, for example, a substrate is used to detect the enzyme beta-glucuronidase produced by *E. coli*.

⁴Association of Official Analytical Chemists, International. "Official Methods of Analysis of AOAC International, 16th Ed., Volume 1, Chapter 17, 1995. AOAC, 481 N. Frederick Ave., Suite 500, Gaithersburg, MD 20877-2417.

⁵Descriptions of the Colilert®, Colilert-18®, Quanti-Tray®, and Quanti-Tray® 2000 may be obtained from IDEXX Laboratories, Inc., 1 IDEXX Drive, Westbrook, ME 04092.

⁶Colilert-18® is an optimized formulation of the Colilert® for the determination of total coliforms and *E. coli* that provides results within 18 hours of incubation at 35 degrees C rather than the 24 hours required for the Colilert® test.

⁷The filter must be a 0.45 micron membrane filter or a membrane filter with another pore size certified by the manufacturer to fully retain organisms to be cultivated and to be free of extractables which could interfere with organism growth.

⁸When the membrane filter method has been used previously to test waters with high turbidity or large numbers of noncoliform bacteria, a parallel test should be conducted with a multiple-tube technique to demonstrate applicability and comparability of results.

⁹"Method 1603: *Escherichia coli* (*E. coli*) in Water by Membrane Filtration Using Modified Membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC), USEPA, July 2006." US EPA, Office of Water, Washington, DC, EPA 821-R-06-011. Available at www.nepis.epa.gov.

¹⁰A description of the m-ColiBlue24® test, Total Coliforms and *E. coli*, is available from Hach Company, 100 Dayton Ave., Ames, IA 50010.

¹¹Standard Methods for the Analysis of Water and Wastewater, 18th (1992), 19th (1995), and 20th (1998) editions, American Public Health Association. Available from APHA, 800 I Street, NW, Washington, DC 20001-3710.

¹²Standard Methods for the Examination of Water and Wastewater, 20th edition (1998). Available from APHA, 800 I Street, NW, Washington, DC 20001-3710.

2. The holding time (the time period from sample collection to initiation of analysis) shall not exceed 30 hours. The department may approve on a case-by-case basis an extension of the holding time to 48 hours, if the 30-hour holding time is not feasible. If the extension is allowed, the laboratory must use the Colilert® reagent version of the Standard Methods 9223B to conduct the analysis.

3. The samples must be maintained between 0 and 10 degrees C during storage and transit to the laboratory.

4. The following data elements must be reported for each *E. coli* analysis:

- PWSID.
- Facility ID.
- Sample collection date.
- Analytical method number.
- Method type.
- Source type (flowing stream or river; lake or reservoir; or influenced groundwater).
- Number of *E. coli* per 100 mL.
- Turbidity in NTU.

(3) Turbidity. The approved analytical methods for turbidity are listed in 43.5(4)"a"(1). Measurements of turbidity must be made by a party approved by the department, and reported on the laboratory data sheet with the corresponding *E. coli* sample.

43.11(4) Disinfection profiling and benchmarking.

a. *General requirements.* Following completion of the first round of source water monitoring, a system that plans to make a significant change to its disinfection practice must develop disinfection profiles and calculate disinfection benchmarks for *Giardia lamblia* and viruses.

(1) Notification to the department. The system must notify the department prior to changing its disinfection practice and must include in the notice the completed disinfection profile and disinfection benchmark for *Giardia lamblia* and viruses, a description of the proposed change in disinfection practice, and an analysis of how the proposed change will affect the current level of disinfection.

(2) Definition of “significant change.” A significant change to the disinfection practice is defined as follows:

1. Any change to the point of disinfection;
2. Any change to the disinfectant(s) used in the treatment plant;
3. Any change to the disinfection process; or
4. Any other modification identified by the department as a significant change to disinfection practice.

b. *Developing the disinfection profile.* In order to develop a disinfection profile, a system must monitor at least weekly for a period of 12 consecutive months to determine the total log inactivation for *Giardia lamblia* and viruses. If a system monitors more frequently, the monitoring frequency must be evenly spaced. A system that operates for fewer than 12 months per year must monitor weekly during the period of operation. A system must determine log inactivation for *Giardia lamblia* through the entire plant, based on CT_{99.9} values in Appendix A, Tables 1 through 6, as applicable. Systems must determine log inactivation for viruses through the entire treatment plant based on a protocol approved by the department.

(1) Monitoring requirements. Systems with a single point of disinfectant application prior to the entrance to the distribution system must conduct the monitoring listed in this subparagraph. Systems with multiple points of disinfectant application must conduct the same monitoring for each disinfection segment. Systems must monitor the parameters necessary to determine the total inactivation ratio. The analytical methods for the parameters are listed in 43.5(4)“a.” All measurements must be taken during peak hourly flow.

1. For systems using a disinfectant other than UV, the temperature of the disinfected water must be measured in degrees Celsius at each residual disinfectant concentration sampling point or at an alternative location approved by the department.

2. For systems using chlorine, the pH of the disinfected water must be measured at each chlorine residual disinfectant concentration sampling point or at an alternative location approved by the department.

3. The disinfectant contact time must be determined in minutes.

4. The residual disinfectant concentrations of the water must be determined in mg/L before or at the first customer and prior to each additional point of disinfectant application.

5. A system may use existing data to meet the monitoring requirements if the data are substantially equivalent to the required data, the system has not made any significant change to its treatment practice, and the system has the same source water as it had when the data were collected. Systems may develop disinfection profiles using up to three years of existing data.

6. A system may use disinfection profiles developed under 43.9(2) or 43.10(2) if the system has not made a significant change to its treatment practice and has the same source water as it had when the profile was developed. The virus profile must be developed using the same data on which the *Giardia lamblia* profile is based.

(2) Calculation of the total inactivation ratio for *Giardia lamblia*.

1. Systems using only one point of disinfectant application may determine the total inactivation ratio ($CT_{calc}/CT_{99.9}$) for the disinfection segment using either of the following methods.

- Determine one inactivation ratio before or at the first customer during peak hourly flow.

- Determine successive sequential inactivation ratios between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Calculate the total inactivation ratio by determining the inactivation ratio for each sequence ($CT_{calc}/CT_{99.9}$) and adding the values together.

2. Systems using more than one point of disinfectant application before the first customer must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. Calculate the ($CT_{calc}/CT_{99.9}$) value of each segment and add the values together to determine the total inactivation ratio.

3. Systems must then determine the total logs of inactivation by multiplying the total inactivation ratio by 3.0.

(3) Calculation of the total inactivation ratio for viruses. The system must calculate the log of inactivation for viruses using a protocol approved by the department.

c. Calculation of the disinfection benchmark.

(1) For each year of profiling data collected and calculated under this subrule, systems must determine the lowest mean monthly level of both *Giardia lamblia* and virus inactivation. Systems must determine the mean *Giardia lamblia* and virus inactivation for each calendar month for each year of profiling data by dividing the sum of daily or weekly *Giardia lamblia* and virus log inactivation by the number of values calculated for that month.

(2) For a system with one year of profiling data, the disinfection benchmark is the lowest monthly mean value. For a system with more than one year of profiling data, the disinfection benchmark is the mean of the lowest monthly mean values of *Giardia lamblia* and virus log inactivation in each year of profiling data.

43.11(5) Bin classification. Upon completion of the first round of source water monitoring, systems must calculate an initial *Cryptosporidium* bin concentration for each plant for which monitoring was required. Calculation of the bin concentration must use the *Cryptosporidium* results reported under 43.11(3)“a.”

a. Calculation of mean Cryptosporidium or bin concentration value.

(1) Systems that collect at least 48 samples. For systems that collect a total of at least 48 samples, the bin concentration is equal to the arithmetic mean of all sample concentrations.

(2) Systems that collect 24 to 47 samples. For systems that collect at least 24 samples but not more than 47 samples, the bin concentration is equal to the highest arithmetic mean of all sample concentrations in any 12 consecutive months during which *Cryptosporidium* samples were collected.

(3) Systems serving fewer than 10,000 people and monitoring for only one year. For systems that serve fewer than 10,000 people and monitor *Cryptosporidium* for only one year (i.e., 24 samples in 12 months), the bin concentration is equal to the arithmetic mean of all sample concentrations.

(4) Systems with plants operating on a part-time basis. For systems with plants operating only part of the year that monitor fewer than 12 months per year, the bin concentration is equal to the highest arithmetic mean of all sample concentrations during any year of *Cryptosporidium* monitoring.

(5) If the monthly *Cryptosporidium* sampling frequency varies, systems must first calculate a monthly average for each month of monitoring. Systems must then use these monthly average concentrations, rather than individual sample concentrations, in the applicable calculation for bin classification.

b. Determination of bin classification.

(1) First monitoring round. A system must determine the bin classification from Table 3, using its calculated bin concentration from 43.11(5)“a.”

Table 3: Bin Classification Table

System Type	<i>Cryptosporidium</i> Concentration, in oocysts/L	Bin Classification
Systems required to monitor for <i>Cryptosporidium</i> under 43.11(3)“b”(1) or 43.11(3)“b”(2)“3”	Fewer than 0.075 oocysts/L	Bin 1
	Between 0.075 and fewer than 1.0 oocysts/L	Bin 2
	Between 1.0 and fewer than 3.0 oocysts/L	Bin 3
	3.0 oocysts/L or greater	Bin 4
Systems serving fewer than 10,000 and not required to monitor for <i>Cryptosporidium</i> , pursuant to 43.11(3)“b”(2)“1”	Not applicable	Bin 1

(2) Second monitoring round. Following completion of the second round of source water monitoring, a system must recalculate its bin concentration and determine its new bin classification, using the same protocols outlined in 43.11(5)“a” and “b.”

c. Reporting bin classification to the department. Within six months of the end of the sampling period, the system must report its bin classification to the department for approval. The report must also include a summary of the source water monitoring data and the calculation procedure used to determine the bin classification.

d. Treatment technique violation. Failure to comply with 43.11(5) “b” and “c” is a violation of the treatment technique requirement.

43.11(6) Additional *Cryptosporidium* treatment requirements. A system must provide the level of additional treatment for *Cryptosporidium* specified in Table 4 based on its bin classification determined in 43.11(5) and according to the schedule in 43.11(7).

*a. Determination of additional *Cryptosporidium* treatment requirements.* Using Table 4, a system must determine any additional treatment requirements based upon its bin classification. The Bin 1 classification does not require any additional treatment. Bins 2 through 4 require additional *Cryptosporidium* treatment.

Table 4: Additional *Cryptosporidium* Treatment Requirements

Bin Classification	Treatment Used by the System for Compliance with 43.5, 43.9, and 43.10			
	Conventional filtration (including softening)	Direct filtration	Slow sand or diatomaceous earth filtration	Alternative filtration technologies
Bin 1	No additional treatment	No additional treatment	No additional treatment	No additional treatment
Bin 2	1-log treatment	1.5-log treatment	1-log treatment	At least 4.0-log ¹
Bin 3	2-log treatment	2.5-log treatment	2-log treatment	At least 5.0-log ¹
Bin 4	2.5-log treatment	3-log treatment	2.5-log treatment	At least 5.5-log ¹

¹The total *Cryptosporidium* removal and inactivation must be at least this value, as determined by the department.

b. Treatment requirements for Bins 2 through 4. A system that is classified as Bin 2, 3, or 4 must use one or more of the treatment and management options listed in 43.11(8) to comply with the required additional *Cryptosporidium* treatment. Systems classified as Bins 3 and 4 must achieve at least 1-log of the additional *Cryptosporidium* treatment required by using either one or a combination of the following: bag filters, bank filtration, cartridge filters, chlorine dioxide, membranes, ozone, or UV, as listed in 43.11(9) through 43.11(13).

c. Treatment technique violation. Failure by a system in any month to achieve treatment credit by meeting criteria in 43.11(9) through 43.11(13) that is at least equal to the level of treatment required in 43.11(6) “a” is a violation of the treatment technique requirement.

d. Significant changes to the watershed. If, after the system’s completion of source water monitoring (either round), the department determines during a sanitary survey or an equivalent source water assessment that significant changes occurred in the system’s watershed that could lead to increased contamination of the source water by *Cryptosporidium*, the system must take actions specified by the department to address the contamination. These actions may include additional source water monitoring and implementing microbial toolbox options listed in 43.11(8).

43.11(7) Schedule for compliance with *Cryptosporidium* treatment requirements. Following the initial bin classification under 43.11(5), systems must provide the level of treatment for *Cryptosporidium* required in 43.11(6), according to the schedule in Table 5. If the bin classification of a system changes following the second round of source water monitoring, the system must provide the level of treatment for *Cryptosporidium* required in 43.11(6), on a schedule approved by the department.

Table 5: *Cryptosporidium* Treatment Compliance Dates

Schedule	Population Served by System	Compliance Date for <i>Cryptosporidium</i> treatment requirements ¹
1	At least 100,000 people	April 1, 2012
2	From 50,000 to 99,999 people	October 1, 2012
3	From 10,000 to 49,999 people	October 1, 2013
4	Fewer than 10,000 people	October 1, 2014

¹The department may allow up to an additional two years for compliance with the treatment requirement if the system must make capital improvements.

43.11(8) Microbial toolbox options for meeting *Cryptosporidium* treatment requirements. Systems receive the treatment credits listed in Table 6 by meeting the conditions for microbial toolbox options

described in 43.11(9) through 43.11(13). Systems apply these treatment credits to meet the treatment requirements in 43.11(6). Table 6 summarizes options in the microbial toolbox.

Table 6: Microbial Toolbox Summary Table: Options, Treatment Credits, and Criteria

Toolbox Option	Specific Criteria Rule	<i>Cryptosporidium</i> treatment credit with design and implementation criteria
Source Protection and Management Toolbox Options		
Watershed control program	43.11(9)	0.5-log credit for department-approved program comprising required elements, annual program status report to department, and regular watershed survey.
Alternative source/intake management	43.11(9) "b"	No prescribed credit. Systems may conduct simultaneous monitoring for treatment bin classification at alternative intake locations or under alternative intake management strategies.
Prefiltration Toolbox Options		
Presedimentation basin with coagulation	43.11(10) "a"	0.5-log credit during any month that presedimentation basins achieve a monthly mean reduction of 0.5-log or greater in turbidity or alternative department-approved performance criteria. To be eligible, basins must be operated continuously with coagulant addition and all plant flow must pass through the basins.
Two-stage lime softening	43.11(10) "b"	0.5-log credit for two-stage softening where chemical addition and hardness precipitation occur in both stages. All plant flow must pass through both stages. Single-stage softening is credited as equivalent to conventional treatment.
Bank filtration	43.11(10) "c"	0.5-log credit for 25-foot setback; 1.0-log credit for 50-foot setback; aquifer must be unconsolidated sand containing at least 10 percent fines; average turbidity in wells must be less than 1 NTU. A system using a well followed by filtration when conducting source water monitoring must sample the well to determine bin classification and is not eligible for additional credit.
Treatment Performance Toolbox Options		
Combined filter performance	43.11(11) "a"	0.5-log credit for combined filter effluent turbidity less than or equal to 0.15 NTU in at least 95 percent of measurements each month.
Individual filter performance	43.11(11) "b"	0.5-log credit (in addition to the 0.5-log combined filter performance credit) if individual filter effluent turbidity is less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter and is never greater than 0.3 NTU in two consecutive measurements in any filter.
Demonstration of performance	43.11(11) "c"	Credit awarded to unit process or treatment train based on a demonstration to the department with a department-approved protocol.
Additional Filtration Toolbox Options		
Bag or cartridge filters (individual filters)	43.11(12) "a"	Up to 2-log credit based on the removal efficiency demonstrated during challenge testing with a 1.0-log factor of safety.
Bag or cartridge filters (in series)	43.11(12) "a"	Up to 2.5-log credit based on the removal efficiency demonstrated during challenge testing with a 0.5-log factor of safety.
Membrane filtration	43.11(12) "b"	Log credit equivalent to removal efficiency demonstrated in challenge test for device if supported by direct integrity testing.
Second-stage filtration	43.11(12) "c"	0.5-log credit for second separate granular media filtration stage if treatment train includes coagulation prior to first filter.

Toolbox Option	Specific Criteria Rule	<i>Cryptosporidium</i> treatment credit with design and implementation criteria
Slow sand filtration	43.11(12)“d”	2.5-log credit as a secondary filtration step; 3.0-log credit as a primary filtration process. No prior chlorination for either option.
Inactivation Toolbox Options		
Chlorine dioxide	43.11(13)	Log credit based on measured CT in relation to CT table.
Ozone	43.11(13)	Log credit based on measured CT in relation to CT table.
Ultraviolet light (UV)	43.11(13)	Log credit based on validated UV dose in relation to UV dose table; reactor validation testing required to establish UV dose and associated operating conditions.

43.11(9) Source toolbox components.

a. *Watershed control program.* Systems receive 0.5-log *Cryptosporidium* treatment credit for implementing a watershed control program that meets the requirements of this paragraph.

(1) Notification. Systems that intend to apply for the watershed control program credit must notify the department of this intent no later than two years prior to the treatment compliance date in 43.11(7) applicable to the system.

(2) Proposed watershed control plan. Systems must submit to the department a proposed watershed control plan no later than one year before the applicable treatment compliance date in 43.11(7). The department must approve the watershed control plan for the system to receive watershed control program treatment credit. The watershed control plan must include the following elements:

1. Identification of an “area of influence” outside of which the likelihood of *Cryptosporidium* or fecal contamination affecting the treatment plant intake is not significant. This is the area to be evaluated in future watershed surveys under 43.11(9)“a”(5)“2.”

2. Identification of both potential and actual sources of *Cryptosporidium* contamination and an assessment of the relative impact of these sources on the system’s source water quality.

3. An analysis of the effectiveness and feasibility of control measures that could reduce *Cryptosporidium* loading from sources of contamination to the system’s source water.

4. A statement of goals and specific actions the system will undertake to reduce source water *Cryptosporidium* levels. The plan must explain how the actions are expected to contribute to specific goals, identify watershed partners and their roles, identify resource requirements and commitments, and include a schedule for plan implementation with deadlines for completing specific actions identified in the plan.

(3) Existing watershed control programs. Systems with watershed control programs that were in place on January 5, 2006, are eligible to seek this credit. The systems’ watershed control plans must meet the criteria in 43.11(9)“a”(2) and must specify ongoing and future actions that will reduce source water *Cryptosporidium* levels.

(4) Department response to submitted plan. If the department does not respond to a system regarding approval of a watershed control plan submitted under this subrule and the system meets the other requirements of this subrule, the watershed control program will be considered approved and 0.5-log *Cryptosporidium* treatment credit will be awarded unless and until the department subsequently withdraws such approval.

(5) System requirements to maintain 0.5-log credit. Systems must complete the following actions to maintain the 0.5-log credit.

1. Submit an annual watershed control program status report to the department. The annual watershed control program status report must describe the system’s implementation of the approved plan and assess the adequacy of the plan to meet its goals. The plan must explain how the system is addressing any shortcomings in plan implementation, including those previously identified by the department or as a result of the watershed survey conducted under 43.11(9)“a”(5)“2.” It must also describe any significant changes that have occurred in the watershed since the last watershed sanitary survey. If a system determines during implementation that making a significant change to its approved watershed control program is necessary,

the system must notify the department prior to making any such changes. If any change is likely to reduce the level of source water protection, the system must also list in its notification the actions the system will take to mitigate this effect.

2. Undergo a watershed sanitary survey every three years for community water systems and every five years for noncommunity water systems and submit the survey report to the department. The survey must be conducted according to department guidelines and by persons acceptable to the department.

- The watershed sanitary survey must meet the following criteria: encompass the region identified in the department-approved watershed control plan as the area of influence; assess the implementation of actions to reduce source water *Cryptosporidium* levels; and identify any significant new sources of *Cryptosporidium*.

- If the department determines that significant changes may have occurred in the watershed since the previous watershed sanitary survey, systems must undergo another watershed sanitary survey by the date specified by the department, which may be earlier than the regular schedule of a three- or five-year frequency.

3. The system must make the watershed control plan, annual status reports, and watershed sanitary survey reports available to the public upon request. These documents must be in a plain language style and include criteria by which to evaluate the success of the program in achieving plan goals. The department may approve systems to withhold portions of an annual status report, watershed control plan, and watershed sanitary survey from the public, based on water supply security considerations.

(6) Withdrawal of watershed control program treatment credit. If the department determines that a system is not carrying out the approved watershed control plan, the department may withdraw the watershed control program treatment credit.

b. Alternative source. A system may conduct source water monitoring that reflects a different intake location (either in the same source or for an alternate source) or a different procedure for the timing or level of withdrawal from the source (alternative source monitoring). If the department approves, a system may determine its bin classification under 43.11(5) based on alternative source monitoring results.

(1) Systems conducting alternative source monitoring must also monitor their current plan intake concurrently, as described in 43.11(3).

(2) Alternative source monitoring must meet the requirements for source monitoring to determine bin classification, as described in 43.11(3). Systems must report to the department the alternative source monitoring results and provide supporting information documenting the operating conditions under which the samples were collected.

(3) If a system determines its bin classification under 43.11(5) using alternative source monitoring results that reflect a different intake location or a different procedure for managing the timing or level of withdrawal from the source, the system must relocate the intake or permanently adopt the withdrawal procedure, as applicable, no later than the applicable treatment compliance date in 43.11(7).

43.11(10) Prefiltration treatment toolbox components.

a. Presedimentation. Systems receive 0.5-log *Cryptosporidium* treatment credit for a presedimentation basin during any month the process meets the criteria in this paragraph.

(1) The presedimentation basin must be in continuous operation and must treat the entire plant flow taken from a surface water or influenced groundwater source.

(2) The system must continuously add a coagulant to the presedimentation basin.

(3) The presedimentation basin must achieve either of the following performance criteria:

1. Demonstrates at least 0.5-log mean reduction of influent turbidity. This reduction must be determined using daily turbidity measurements in the presedimentation process influent and effluent and must be calculated as follows: $\text{LOG}_{10}(\text{monthly mean of daily influent turbidity}) - \text{LOG}_{10}(\text{monthly mean of daily effluent turbidity})$.

2. Complies with department-approved performance criteria that demonstrate at least 0.5-log mean removal of micron-sized particulate material through the presedimentation process.

b. Two-stage lime softening. Systems receive an additional 0.5-log *Cryptosporidium* treatment credit for a two-stage lime softening plant if chemical addition and hardness precipitation occur in two separate

and sequential softening stages prior to filtration. Both softening stages must treat the entire plant flow taken from a surface water or influenced groundwater source.

c. Bank filtration. Systems receive *Cryptosporidium* treatment credit for bank filtration that serves as pretreatment to a filtration plant by meeting the criteria in this paragraph. Systems using bank filtration when they begin source water monitoring under 43.11(3)“a” must collect samples as described in 43.11(3)“d”(3) and are not eligible for this credit.

(1) Treatment credit. Wells with a groundwater flow path of at least 25 feet receive 0.5-log treatment credit; wells with a groundwater flow path of at least 50 feet receive 1.0-log treatment credit. The groundwater flow path must be determined as specified in 43.11(10)“c”(4).

(2) Granular aquifers only. Only wells in granular aquifers are eligible for treatment credit. Granular aquifers are those comprised of sand, clay, silt, rock fragments, pebbles or larger particles, and minor cement. A system must characterize the aquifer at the well site to determine aquifer properties. Systems must extract a core from the aquifer and demonstrate that in at least 90 percent of the core length, grains less than 1.0 mm in diameter constitute at least 10 percent of the core material.

(3) Horizontal and vertical wells only. Only horizontal and vertical wells are eligible for treatment credit.

(4) Measurement of groundwater flow path. For vertical wells, the groundwater flow path is the measured distance from the edge of the surface water body under high flow conditions (determined by the 100-year floodplain elevation boundary or by the floodway, as defined in Federal Emergency Management Agency flood hazard maps) to the well screen. For horizontal wells, the groundwater flow path is the measured distance from the bed of the river under normal flow conditions to the closest horizontal well lateral screen.

(5) Turbidity monitoring at the wellhead. Systems must monitor each wellhead for turbidity at least once every four hours while the bank filtration process is in operation. If monthly average turbidity levels, based on daily maximum values in the well, exceed 1 NTU, the system must report this result to the department and conduct an assessment within 30 days to determine the cause of the high turbidity levels in the well. If the department determines that microbial removal has been compromised, the department may revoke treatment credit until the system implements corrective actions approved by the department to remediate the problem.

(6) Springs and infiltration galleries. This treatment credit is not eligible for springs and infiltration galleries. Springs and infiltration galleries are eligible for credit through demonstration of performance study under 43.11(11)“c.”

(7) Bank filtration demonstration of performance. The department may approve *Cryptosporidium* treatment credit for bank filtration based on a demonstration of performance study that meets the criteria in this subparagraph. This treatment credit may be greater than 1.0-log and may be awarded to bank filtration that does not meet the criteria in 43.11(10)“c”(1) to (5).

1. The study must follow a protocol approved by the department and must involve the collection of data on the removal of *Cryptosporidium* or a surrogate for *Cryptosporidium* and related hydrogeologic and water quality parameters during the full range of operating conditions.

2. The study must include sampling both from the production well(s) and from monitoring wells that are screened and located along the shortest flow path between the surface water source and the production well(s).

43.11(11) Treatment performance toolbox components. This option pertains to physical treatment processes.

a. Combined filter performance. Systems using conventional filtration treatment or direct filtration treatment receive an additional 0.5-log *Cryptosporidium* treatment credit during any month the system meets the criteria in this paragraph. Combined filter effluent (CFE) turbidity must be less than or equal to 0.15 NTU in at least 95 percent of the measurements. Turbidity must be measured as described in 43.5(4) and, if applicable, 43.10(4).

b. Individual filter performance. Systems using conventional filtration treatment or direct filtration treatment receive 0.5-log *Cryptosporidium* treatment credit during any month the system meets the criteria in this paragraph, which can be in addition to the CFE 0.5-log credit from 43.11(11)“a.” Compliance with

these criteria must be based on individual filter turbidity monitoring as described in 43.9(4) or 43.10(5), as appropriate.

(1) The filtered water turbidity for each individual filter must be less than or equal to 0.15 NTU in at least 95 percent of the measurements recorded each month.

(2) No individual filter may have a measured turbidity greater than 0.3 NTU in two consecutive measurements taken 15 minutes apart.

(3) Any system that has received treatment credit for individual filter performance and fails to meet the requirements of 43.11(11)“b”(2) and (3) during any month shall not receive a treatment technique violation under 43.11(6) if the department determines the following:

1. The failure was due to unusual and short-term circumstances that could not reasonably be prevented through optimizing the treatment plant design, operation, and maintenance.

2. The system has experienced no more than two such failures in any calendar year.

c. *Demonstration of performance.* The department may approve *Cryptosporidium* treatment credit for drinking water treatment processes based on a demonstration of performance study that meets the criteria in this paragraph. This treatment credit may be greater than or less than the prescribed treatment credits in 43.11(6) or 43.11(10) through 43.11(13) and may be awarded to treatment processes that do not meet the criteria for the prescribed credits.

(1) Systems cannot receive the prescribed treatment credit for any toolbox option in 43.11(10) through 43.11(13) if that toolbox option is included in a demonstration of performance study for which treatment credit is awarded under this paragraph.

(2) The demonstration of performance study must follow a department-approved protocol and must demonstrate the level of *Cryptosporidium* reduction the treatment process will achieve under the full range of expected operating conditions for the system.

(3) Approval by the department must be in writing and may include monitoring and treatment performance criteria that the system must demonstrate and report on an ongoing basis to remain eligible for the treatment credit. The department may designate such criteria where necessary to verify that the conditions under which the demonstration of performance credit was approved are maintained during routine operation.

43.11(12) Additional filtration toolbox components.

a. *Bag and cartridge filters.* By meeting the criteria in this paragraph, systems receive *Cryptosporidium* treatment credit of up to 2.0-log for the use of individual bag or cartridge filters and up to 2.5-log for the use of bag or cartridge filters operated in series. To be eligible for this credit, systems must report the results of challenge testing that meets the requirements of 43.11(12)“a”(2) through 43.11(12)“a”(9) to the department. The filters must treat the entire plant flow taken from a surface water or influenced groundwater source.

(1) The *Cryptosporidium* treatment credit awarded for use of bag or cartridge filters must be based on the removal efficiency demonstrated during challenge testing that is conducted in accordance with the criteria in 43.11(12)“a”(2) through 43.11(12)“a”(9). A safety factor equal to 1-log for individual bag or cartridge filters and 0.5-log for bag or cartridge filters in series must be applied to challenge testing results to determine removal credit. Systems may use results from challenge testing conducted prior to January 5, 2006, if the prior testing was consistent with the criteria specified in this paragraph.

(2) Challenge testing must be performed on full-scale bag or cartridge filters, and the associated filter housing or pressure vessel, that are identical in material and construction to the filters and housings the system will use for removal of *Cryptosporidium*. Bag or cartridge filters must be challenge tested in the same configuration that the system will use, either as individual filters or as a series configuration of filters.

(3) Challenge testing must be conducted using *Cryptosporidium* or a surrogate that is removed no more efficiently than *Cryptosporidium*. The microorganism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate must be determined using a method capable of discretely quantifying the specific microorganisms or surrogate used in the test; gross measurements such as turbidity shall not be used.

(4) The maximum feed water concentration that can be used during a challenge test must be based on the detection limit of the challenge particulate in the filtrate (i.e., filtrate detection limit) and must be calculated using this equation:

$$\text{Maximum Feed Water Concentration} = 10,000 \times \text{Filtrate Detection Limit}$$

(5) Challenge testing must be conducted at the maximum design flow rate for the filter as specified by the manufacturer.

(6) Each filter evaluated must be tested for a duration sufficient to reach 100 percent of the terminal pressure drop, which thereby establishes the maximum pressure drop under which the filter may be used to comply with the requirements of this paragraph.

(7) Removal efficiency of a filter must be determined from the results of the challenge test and expressed in terms of log removal values using the following equation:

$$\text{LRV} = \text{LOG}_{10}(C_f) - \text{LOG}_{10}(C_p)$$

Where:

LRV = log removal value demonstrated during challenge test;

C_f = the feed concentration measured during the challenge test; and

C_p = the filtrate concentration measured during the challenge test.

Equivalent units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, the term C_p must be set equal to the detection limit.

(8) Each filter tested must be challenged with the challenge particulate during three periods over the filtration cycle: within two hours of start-up of a new filter; when the pressure drop is between 45 and 55 percent of the terminal pressure drop; and at the end of the cycle after the pressure drop has reached 100 percent of the terminal pressure drop. An LRV must be calculated for each of these challenge periods for each filter tested. The LRV for the filter ($\text{LRV}_{\text{filter}}$) must be assigned the value of the minimum LRV observed during the three challenge periods for that filter.

(9) If fewer than 20 filters are tested, the overall removal efficiency for the filter product line must be set equal to the lowest $\text{LRV}_{\text{filter}}$ among the filters tested. If 20 or more filters are tested, the overall removal efficiency for the filter product line must be set equal to the tenth percentile of the set of $\text{LRV}_{\text{filter}}$ values for the various filters tested. The percentile is defined by $[i/(n+1)]$ where “i” is the rank of “n” individual data points ordered lowest to highest. If necessary, the tenth percentile may be calculated using linear interpolation.

(10) If a previously tested filter is modified in a manner that could change the removal efficiency of the filter product line, challenge testing to demonstrate the removal efficiency of the modified filter must be conducted and submitted to the department.

b. Membrane filtration.

(1) Systems receive *Cryptosporidium* treatment credit for using membrane filtration that meets the criteria of this paragraph. Systems using membrane cartridge filters that meet the definition of membrane filtration in 567—40.2(455B) are eligible for this credit. The level of treatment credit a system receives is equal to the lower of the values determined under the following two paragraphs:

1. The removal efficiency demonstrated during challenge testing conducted under the criteria in 43.11(12) “b”(2).

2. The maximum removal efficiency that can be verified through direct integrity testing used with the membrane filtration process under the conditions in 43.11(12) “b”(3).

(2) Challenge testing. The membrane used by the system must undergo challenge testing to evaluate removal efficiency, and the system must report the results of challenge testing to the department. Challenge testing must be conducted according to the criteria listed in this subparagraph. Systems may use data from challenge testing conducted prior to January 5, 2006, if the prior testing was consistent with the criteria listed in this subparagraph.

1. Challenge testing must be conducted on either a full-scale membrane module, identical in material and construction to the membrane modules used in the system’s treatment facility, or a smaller-scale membrane module, identical in material and similar in construction to the full-scale module. A module is

defined as the smallest component of a membrane unit in which a specific membrane surface area is housed in a device with a filtrate outlet structure.

2. Challenge testing must be conducted using *Cryptosporidium* oocysts or a surrogate that is removed no more efficiently than *Cryptosporidium* oocysts. The organisms or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate, in both the feed and filtrate water, must be determined using a method capable of discretely quantifying the specific challenge particulate used in the test; gross measurements such as turbidity shall not be used.

3. The maximum feed water concentration that can be used during a challenge test is based on the detection limit of the challenge particulate in the filtrate and must be determined according to the following equation:

$$\text{Maximum Feed Water Concentration} = 3,160,000 \times \text{Filtrate Detection Limit}$$

4. Challenge testing must be conducted under representative hydraulic conditions at the maximum design flux and maximum design process recovery specified by the manufacturer for the membrane module. Flux is defined as the throughput of a pressure-driven membrane process expressed as flow per unit of membrane area. Recovery is defined as the volumetric percent of feed water that is converted to filtrate over the course of an operating cycle uninterrupted by events such as chemical cleaning or a solids removal process (i.e., backwashing).

5. Removal efficiency of a membrane module must be calculated from the challenge test results and expressed as a log removal value according to the following equation:

$$\text{LRV} = \text{LOG}_{10}(C_f) - \text{LOG}_{10}(C_p)$$

Where:

LRV = log removal value demonstrated during challenge test;

C_f = the feed concentration measured during the challenge test; and

C_p = the filtrate concentration measured during the challenge test.

Equivalent units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, the term C_p must be set equal to the detection limit for the purpose of calculating the LRV. An LRV must be calculated for each membrane module evaluated during the challenge test.

6. The removal efficiency of a membrane filtration process demonstrated during challenge testing must be expressed as a log removal value ($\text{LRV}_{\text{C-Test}}$). If fewer than 20 modules are tested, then $\text{LRV}_{\text{C-Test}}$ is equal to the lowest of the representative LRVs among the modules tested. If 20 or more modules are tested, then $\text{LRV}_{\text{C-Test}}$ is equal to the tenth percentile of the representative LRVs among the modules tested. The percentile is defined by $[i/(n+1)]$ where “i” is the rank of “n” individual data points ordered lowest to highest. If necessary, the tenth percentile may be calculated using linear interpolation.

7. The challenge test must establish a quality control release value (QCRV) for a nondestructive performance test that demonstrates the *Cryptosporidium* removal capability of the membrane filtration module. In order to verify *Cryptosporidium* removal capability, this performance test must be applied to each production membrane module that was not directly challenge tested but was used by the system. Production modules that do not meet the established QCRV are not eligible for the treatment credit demonstrated during the challenge test.

8. If a previously tested membrane is modified in a manner that could change the removal efficiency of the membrane or the applicability of the nondestructive performance test and associated QCRV, additional challenge testing to demonstrate the removal efficiency of the modified membrane must be conducted and submitted to the department, along with determination of a new QCRV.

(3) Direct integrity testing. Systems must conduct direct integrity testing in a manner that demonstrates a removal efficiency equal to or greater than the removal credit awarded for the membrane filtration process and meets the requirements described in this subparagraph. A direct integrity test is defined as a physical test applied to a membrane unit in order to identify and isolate integrity breaches (i.e., one or more leaks that could result in contamination of the filtrate).

1. The direct integrity test must be independently applied to each membrane unit in service. A membrane unit is defined as a group of membrane modules that share common valving that allows the unit to be isolated from the rest of the system for the purpose of integrity testing or other maintenance.

2. The direct integrity method must have a resolution of 3 micrometers or less, where resolution is defined as the size of the smallest integrity breach that contributes to a response from the direct integrity test.

3. The direct integrity test must have a sensitivity sufficient to verify the log treatment credit awarded by the department for the membrane filtration process, where sensitivity is defined as the maximum log removal value that can be reliably verified by a direct integrity test. Sensitivity must be determined using the approach in either of the following paragraphs as applicable to the type of direct integrity test the system uses.

- For direct integrity tests using applied pressure or vacuum, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = \text{LOG}_{10} [Q_p / (VCF \times Q_{\text{breach}})]$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test;

Q_p = total design filtrate flow from the membrane unit;

Q_{breach} = flow of water from an integrity breach associated with the smallest integrity test response that can be reliably measured; and

VCF = volumetric concentration factor, which is the ratio of the suspended solids concentration on the high-pressure side of the membrane relative to that in the feed water.

- For direct integrity tests using a particulate or molecular marker, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = \text{LOG}_{10} (C_f) - \text{LOG}_{10} (C_p)$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test;

C_f = the typical feed concentration of the marker used in the test; and

C_p = the filtrate concentration of the marker from an integral membrane unit.

4. Systems must establish a control limit within the sensitivity limits of the direct integrity test that is indicative of an integral membrane unit capable of meeting the removal credit awarded by the department.

5. If the result of a direct integrity test exceeds the control limit established under 43.11(12)“b”(3) “4,” the system must remove the membrane unit from service. Systems must conduct a direct integrity test to verify any repairs and may return the membrane unit to service only if the direct integrity test is within the established control limit.

6. Systems must conduct direct integrity testing on each membrane unit at a frequency of not less than once each day that the membrane unit is in operation. The department may approve less frequent testing, based on demonstrated process reliability, the use of multiple barriers effective for *Cryptosporidium*, or reliable process safeguards.

(4) Indirect integrity monitoring. Systems must conduct continuous indirect integrity monitoring on each membrane unit according to the following criteria. Indirect integrity monitoring is defined as monitoring some aspect of filtrate water quality that is indicative of the removal of particulate matter. A system that implements continuous direct integrity testing of membrane units in accordance with the criteria in 43.11(12)“b”(3) is not subject to the requirements for continuous indirect integrity monitoring. Systems must submit a monthly report to the department summarizing all continuous indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken in each case.

1. Unless the department approves an alternative parameter, continuous indirect integrity monitoring must include continuous filtrate turbidity monitoring.

2. Continuous monitoring must be conducted at a frequency of no less than once every 15 minutes.

3. Continuous monitoring must be separately conducted on each membrane unit.

4. If indirect integrity monitoring includes turbidity and if the filtrate turbidity readings are above 0.15 NTU for a period greater than 15 minutes (i.e., two consecutive 15-minute readings above 0.15 NTU), direct integrity testing must immediately be performed on the associated membrane unit as specified in 43.11(12)“b”(3)“1” through 43.11(12)“b”(3)“5.”

5. If indirect integrity monitoring includes a department-approved alternative parameter and if the alternative parameter exceeds a department-approved control limit for a period greater than 15 minutes, direct integrity testing must immediately be performed on the associated membrane units as specified in 43.11(12)“b”(3)“1” through 43.11(12)“b”(3)“5.”

c. *Second-stage filtration.* Systems receive 0.5-log *Cryptosporidium* treatment credit for using a separate second stage of filtration that consists of sand, dual media, GAC, or other fine-grain media following granular media filtration if the department approves. To be eligible for this credit, the first stage of filtration must be preceded by a coagulation step and both filtration stages must treat the entire plant flow taken from a surface water or influenced groundwater source. A cap, such as GAC, on a single stage of filtration is not eligible for this credit. The department must approve the treatment credit based on an assessment of the design characteristics of the filtration process.

d. *Slow sand filtration (as secondary filter).* Systems are eligible to receive 2.5-log *Cryptosporidium* treatment credit for using a slow sand filtration process that follows a separate stage of filtration if both filtration stages treat entire plant flow taken from a surface water or influenced groundwater source and no disinfectant residual is present in the influent water to the slow sand filtration process. The department must base its approval of the treatment credit on an assessment of the design characteristics of the filtration process. This does not apply to treatment credit awarded for slow sand filtration used as a primary filtration process.

43.11(13) Inactivation toolbox components.

a. *Calculation of CT values.*

(1) CT is the product of the disinfectant contact time (T, in minutes) and disinfectant concentration (C, in milligrams per liter). Systems with treatment credit for chlorine dioxide or ozone under 43.11(13)“b” or “c” must calculate CT at least once each day, with both C and T measured during peak hourly flow as specified in 43.5(4).

(2) Systems with several disinfection segments in sequence may calculate CT for each segment, where a disinfection segment is defined as a treatment unit process with a measureable disinfectant residual level and a liquid volume. Under this approach, systems must add the *Cryptosporidium* CT values in each segment to determine the total CT for the treatment plant.

b. *CT values for chlorine dioxide and ozone.*

(1) As described in 43.11(13)“a,” systems receive the *Cryptosporidium* treatment credit listed in Table 1 of Appendix B by meeting the corresponding chlorine dioxide CT value for the applicable water temperature.

(2) As described in 43.11(13)“a,” systems receive the *Cryptosporidium* treatment credit listed in Table 2 of Appendix B by meeting the corresponding ozone CT value for the applicable water temperature.

c. *Site-specific study.* The department may approve alternative chlorine dioxide or ozone CT values to those listed in 43.11(13)“b” on a site-specific basis. The department must base its approval on a site-specific study conducted by the system. The study must follow a department-approved protocol.

d. *Ultraviolet light.* Systems receive *Cryptosporidium*, *Giardia lamblia*, and virus treatment credits for ultraviolet (UV) light reactors by achieving the corresponding UV dose values shown in Table 3 of Appendix B. Systems must use the following procedures to validate and monitor UV reactors in order to demonstrate that the reactors are achieving a particular UV dose value for treatment credit.

(1) Reactor validation testing. Systems must use UV reactors that have undergone validation testing to determine the operating conditions under which the reactor delivers the required UV dose (i.e., validated operating conditions). These operating conditions must include flow rate, UV intensity as measured by a UV sensor, and UV lamp status.

1. When determining validated operating conditions, systems must account for the following factors: UV absorbance of the water; lamp fouling and aging; measurement uncertainty of on-line sensors; UV dose distributions arising from the velocity profiles through the reactor; failure of UV lamps or other critical system components; and inlet and outlet piping or channel configurations of the UV reactor.

2. Validation testing must include the following: full-scale testing of a reactor that conforms uniformly to the UV reactors used by the system and inactivation of a test microorganism whose dose response characteristics have been quantified with a low-pressure mercury vapor lamp.

3. The department may approve an alternative approach to validation testing.
 - (2) Reactor monitoring.
 1. Systems must monitor their UV reactors to determine if the reactors are operating within validated conditions, as determined under 43.11(13) “d”(1). This monitoring must include UV sensor, flow rate, lamp status, and other parameters the department designates based on UV reactor operation. Systems must verify the calibration of UV sensors and must recalibrate sensors in accordance with a protocol approved by the department.
 2. To receive treatment credit for UV light, systems must treat at least 95 percent of the water delivered to the public during each month by UV reactors operating within validated conditions for the required UV dose. Systems must demonstrate compliance with this condition by the monitoring required under 43.11(13) “d”(2) “1.”
- 43.11(14) Reporting requirements.**
- a. *Sampling schedules and monitoring results.* Systems must report source water sampling schedules and monitoring results under 43.11(3) “c” and 43.11(3) “e,” unless the systems notify the department that they will not conduct source water monitoring due to meeting the criteria of 5.5-log treatment for *Cryptosporidium* under 43.11(3) “a.”
 - b. *Cryptosporidium bin classification.* Systems must report their *Cryptosporidium* bin classification determined under 43.11(5).
 - c. *Disinfection profiles and benchmarks.* Systems must report disinfection profiles and benchmarks to the department as described in 43.11(4) “a” and 43.11(4) “b” prior to making a significant change in disinfection practice.
 - d. *Microbial toolbox options.* Systems must report to the department in accordance with Table 7 for any microbial toolbox options used to comply with treatment requirements under 43.11(6).

Table 7: Microbial Toolbox Reporting Requirements

Toolbox Option	Systems must submit this information	Information must be submitted on this schedule
1. Watershed control program	Notice of intention to develop a new or continue an existing watershed control program	No later than two years before the applicable treatment compliance date in 43.11(7)
	Watershed control plan	No later than one year before the applicable treatment compliance date in 43.11(7)
	Annual watershed control program status report	Every 12 months, beginning one year after the applicable treatment compliance date in 43.11(7)
	Watershed sanitary survey report	- For community water systems, every three years beginning three years after the applicable treatment compliance date in 43.11(7) - For noncommunity water systems, every five years beginning five years after the applicable treatment compliance date in 43.11(7)
2. Alternative source/intake management	Verification that system has relocated the intake or adopted the intake withdrawal procedure reflected in monitoring results	No later than the applicable treatment compliance date in 43.11(7)
3. Presedimentation	Monthly verification of the following: - Continuous basin operation - Treatment of 100 percent of the flow - Continuous addition of a coagulant - At least 0.5-log mean reduction of influent turbidity or compliance with alternative department-approved performance criteria	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
4. Two-stage lime softening	Monthly verification of the following: - Chemical addition and hardness precipitation occurred in two separate and	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on

Toolbox Option	Systems must submit this information	Information must be submitted on this schedule
	sequential softening stages prior to filtration - Both stages treated 100 percent of plant flow	the applicable treatment compliance date in 43.11(7)
5. Bank filtration	Initial demonstration of the following: - Unconsolidated, predominantly sandy aquifer - Setback distance of at least 25 feet for 0.5-log credit or 50 feet for 1.0-log credit	No later than the applicable treatment compliance date in 43.11(7)
	If monthly average of daily maximum turbidity is greater than 1 NTU, then system must report result and submit an assessment of the cause.	Report within 30 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
6. Combined filter performance	Monthly verification of combined filter effluent (CFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of the 4-hour CFE measurements taken each month	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
7. Individual filter performance	Monthly verification of the following: - Individual filter effluent (IFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter - No individual filter effluent turbidity levels greater than 0.3 NTU in two consecutive readings 15 minutes apart	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
8. Demonstration of performance	Results from testing following a department-approved protocol	No later than the applicable treatment compliance date in 43.11(7)
	As required by the department, monthly verification of operation within conditions of department approval for demonstration of performance credit	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
9. Bag filters and cartridge filters	Demonstration that the following criteria are met: - Process meets the definition of bag or cartridge filtration - Removal efficiency established through challenge testing that meets criteria in this subpart	No later than the applicable treatment compliance date in 43.11(7)
	Monthly verification that 100 percent of plant flow was filtered	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
10. Membrane filtration	Results of verification testing demonstrating the following: - Removal efficiency established through challenge testing that meets criteria - Integrity test method and parameters, including resolution, sensitivity, test frequency, control limits, and associated baseline	No later than the applicable treatment compliance date in 43.11(7)
	Monthly report summarizing the following: - All direct integrity tests above the control limit - If applicable, any turbidity or alternative department-approved indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)

Toolbox Option	Systems must submit this information	Information must be submitted on this schedule
11. Second-stage filtration	Monthly verification that 100 percent of flow was filtered through both stages and that first stage was preceded by coagulation step	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
12. Slow sand filtration as a secondary filter	Monthly verification that both a slow sand filter and a preceding separate stage of filtration treated 100 percent of the flow from surface or influenced groundwater sources	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
13. Chlorine dioxide	Summary of CT values for each day as described in 43.11(13)	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
14. Ozone	Summary of CT values for each day as described in 43.11(13)	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)
15. Ultraviolet light (UV)	Validation test results demonstrating operating conditions that achieve required UV dose	No later than the applicable treatment compliance date in 43.11(7)
	Monthly report summarizing the percentage of water entering the distribution system that was not treated by UV reactors operating within validated conditions for the required dose as specified in 43.11(13) “d”	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 43.11(7)

43.11(15) Record-keeping requirements.

a. Source water monitoring records. Systems must keep results from the initial round of source water monitoring under 43.11(3)“a” and the second round of source water monitoring under 43.11(3)“b” until three years after bin classification under 43.11(5) for the particular round of monitoring.

b. Systems meeting 5.5-log treatment for Cryptosporidium. Systems must keep for three years records of any notification to the department that the systems will meet the 5.5-log *Cryptosporidium* treatment requirements and avoid source water monitoring.

c. Microbial toolbox treatment monitoring records. Systems must keep the results of treatment monitoring associated with microbial toolbox options under 43.11(8) through 43.11(13) for three years.

[ARC 9915B, IAB 12/14/11, effective 1/18/12; ARC 3735C, IAB 4/11/18, effective 5/16/18]

567—43.12(455B) Optimization goals.

43.12(1) Turbidity optimization goals. Surface water and IGW systems must meet the requirements listed in 567—43.5(455B), 567—43.9(455B), and 567—43.10(455B). To encourage operational optimization, the department has adopted the following goals for systems using surface water or influenced groundwater and that wish to pursue the optimization of their existing treatment processes. These goals are voluntary. Data collected for optimization purposes will not be used to determine compliance with the requirements in 567—43.5(455B), 567—43.9(455B), 567—43.10(455B), or 567—43.11(455B) unless the optimization data are identical to the compliance data.

a. Sedimentation performance goals. The sedimentation performance goals are based upon the average annual raw water turbidity levels.

(1) When the annual average raw water turbidity is less than or equal to 10 NTU over the course of the calendar year, the turbidity should be less than or equal to 1 NTU in at least 95 percent of measurements based on the maximum daily value of readings taken at least once every four hours from each sedimentation basin while the plant is operating.

(2) When the annual average raw water turbidity is more than 10 NTU over the course of the calendar year, the turbidity should be less than or equal to 2 NTU in at least 95 percent of measurements based on

the maximum daily value of readings taken at least once every four hours from each sedimentation basin while the plant is operating.

b. Individual filter performance goals. The individual filter performance goals depend upon the system's capability of filtering to waste.

(1) For systems that have the capability of filtering to waste, the individual filter turbidity should be less than or equal to 0.10 NTU in at least 95 percent of measurements over the course of the calendar year, based on the daily maximum value of readings recorded at least once per minute while the plant is in operation. The maximum individual filter turbidity must not exceed 0.30 NTU at any time. The filter must return to service with a turbidity of 0.10 NTU or less.

(2) For systems that do not have the capability of filtering to waste, the individual filter turbidity should be less than or equal to 0.10 NTU in at least 95 percent of measurements over the course of the calendar year, excepting the 15 minutes following the completion of the backwash process, based on the daily maximum value of readings recorded at least once per minute while the plant is in operation. The maximum individual filter turbidity must not exceed 0.30 NTU following backwash and must return to a level at or below 0.10 NTU within 15 minutes of returning the filter to service.

c. Combined filter performance goal. The combined filter performance goal has two components:

(1) Combined filter effluent turbidity should be less than or equal to 0.10 NTU in at least 95 percent of measurements over the course of the calendar year, based on daily maximum value of readings recorded at least once per minute while the plant is operating.

(2) The maximum individual filter turbidity must not exceed 0.30 NTU at any time.

43.12(2) *Disinfection optimization goals.* Reserved.

[ARC 9915B, IAB 12/14/11, effective 1/18/12]

TABLE A: SEPARATION DISTANCES FROM WELLS

Rescinded IAB 1/7/04, effective 2/11/04

TABLE B

Minimum Self-Monitoring Requirements

Public Water Supply Systems

[Prior to 12/12/90, appeared in 567—Ch 41, Table D]

Rescinded IAB 8/11/99, effective 9/15/99

APPENDIX A: CT_{99.9} TABLES FOR DISINFECTION PROFILINGTABLE 1: CT Values (CT_{99.9}) for 99.9 Percent Inactivation of *Giardia lamblia* Cysts by Free Chlorine at 0.5°C or Lower¹

Free Residual Chlorine, mg/L	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	137	163	195	237	277	329	390
0.6	141	168	200	239	286	342	407
0.8	145	172	205	246	295	354	422
1.0	148	176	210	253	304	365	437
1.2	152	180	215	259	313	376	451
1.4	155	184	221	266	321	387	464
1.6	157	189	226	273	329	397	477
1.8	162	193	231	279	338	407	489
2.0	165	197	236	286	346	417	500
2.2	169	201	242	297	353	426	511
2.4	172	205	247	298	361	435	522
2.6	175	209	252	304	368	444	533
2.8	178	213	257	310	375	452	543
3.0	181	217	261	316	382	460	552

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. Any CT values between the indicated pH values may be determined by linear interpolation. Any CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature and at the higher pH.

TABLE 2: CT Values (CT_{99.9}) for 99.9 Percent Inactivation of *Giardia lamblia* Cysts by Free Chlorine at 5.0°C¹

Free Residual Chlorine, mg/L	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	97	117	139	166	198	236	279
0.6	100	120	143	171	204	244	291
0.8	103	122	146	175	210	252	301
1.0	105	125	149	179	216	260	312
1.2	107	127	152	183	221	267	320
1.4	109	130	155	187	227	274	329
1.6	111	132	158	192	232	281	337
1.8	114	135	162	196	238	287	345
2.0	116	138	165	200	243	294	353
2.2	118	140	169	204	248	300	361
2.4	120	143	172	209	253	306	368
2.6	122	146	175	213	258	312	375
2.8	124	148	178	217	263	318	382
3.0	126	151	182	221	268	324	389

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. Any CT values between the indicated pH values may be determined by linear interpolation. Any CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature and at the higher pH.

TABLE 3: CT Values (CT_{99.9}) for 99.9 Percent Inactivation of *Giardia lamblia* Cysts by Free Chlorine at 10.0°C¹

Free Residual Chlorine, mg/L	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	73	88	104	125	149	177	209
0.6	75	90	107	128	153	183	218
0.8	78	92	110	131	158	189	226
1.0	79	94	112	134	162	195	234
1.2	80	95	114	137	166	200	240
1.4	82	98	116	140	170	206	247
1.6	83	99	119	144	174	211	253
1.8	86	101	122	147	179	215	259
2.0	87	104	124	150	182	221	265
2.2	89	105	127	153	186	225	271
2.4	90	107	129	157	190	230	276
2.6	92	110	131	160	194	234	281
2.8	93	111	134	163	197	239	287
3.0	95	113	137	166	201	243	292

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. Any CT values between the indicated pH values may be determined by linear interpolation. Any CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature and at the higher pH.

TABLE 4: CT Values (CT_{99.9}) for 99.9 Percent Inactivation of *Giardia lamblia* Cysts by Free Chlorine at 15.0°C¹

Free Residual Chlorine, mg/L	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	49	59	70	83	99	118	140
0.6	50	60	72	86	102	122	146
0.8	52	61	73	88	105	126	151
1.0	53	63	75	90	108	130	156
1.2	54	64	76	92	111	134	160
1.4	55	65	78	94	114	137	165
1.6	56	66	79	96	116	141	169
1.8	57	68	81	98	119	144	173
2.0	58	69	83	100	122	147	177
2.2	59	70	85	102	124	150	181
2.4	60	72	86	105	127	153	184
2.6	61	73	88	107	129	156	188
2.8	62	74	89	109	132	159	191
3.0	63	76	91	111	134	162	195

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. Any CT values between the indicated pH values may be determined by linear interpolation. Any CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature and at the higher pH.

TABLE 5: CT Values (CT_{99.9}) for 99.9 Percent Inactivation of *Giardia lamblia* Cysts by Free Chlorine at 20.0°C¹

Free Residual Chlorine, mg/L	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	36	44	52	62	74	89	105
0.6	38	45	54	64	77	92	109
0.8	39	46	55	66	79	95	113
1.0	39	47	56	67	81	98	117
1.2	40	48	57	69	83	100	120
1.4	41	49	58	70	85	103	123
1.6	42	50	59	72	87	105	126
1.8	43	51	61	74	89	108	129
2.0	44	52	62	75	91	110	132
2.2	44	53	63	77	93	113	135
2.4	45	54	65	78	95	115	138
2.6	46	55	66	80	97	117	141
2.8	47	56	67	81	99	119	143
3.0	47	57	68	83	101	122	146

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. Any CT values between the indicated pH values may be determined by linear interpolation. Any CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature and at the higher pH.

TABLE 6: CT Values (CT_{99.9}) for 99.9 Percent Inactivation of *Giardia lamblia* Cysts by Free Chlorine at 25.0°C and Higher¹

Free Residual Chlorine, mg/L	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	24	29	35	42	50	59	70
0.6	25	30	36	43	51	61	73
0.8	26	31	37	44	53	63	75
1.0	26	31	37	45	54	65	78
1.2	27	32	38	46	55	67	80
1.4	27	33	39	47	57	69	82
1.6	28	33	40	48	58	70	84
1.8	29	34	41	49	60	72	86
2.0	29	35	41	50	61	74	88
2.2	30	35	42	51	62	75	90
2.4	30	36	43	52	63	77	92
2.6	31	37	44	53	65	78	94
2.8	31	37	45	54	66	80	96
3.0	32	38	46	55	67	81	97

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. Any CT values between the indicated pH values may be determined by linear interpolation. Any CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99,9} value at the lower temperature and at the higher pH.

TABLE 7: CT Values (CT_{99,9}) for 99.9 Percent Inactivation of *Giardia lamblia* Cysts by Chlorine Dioxide and Ozone¹

Disinfectant	Temperature, °C					
	<1	5	10	15	20	≥25
Chlorine Dioxide	63	26	23	19	15	11
Ozone	2.9	1.9	1.4	0.95	0.72	0.48

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. Any CT values between the indicated temperatures may be determined by linear interpolation. If no interpolation is used, use the CT_{99,9} value at the lower temperature for determining CT_{99,9} values between indicated temperatures.

TABLE 8: CT Values (CT_{99,9}) for 99.9 Percent Inactivation of *Giardia lamblia* Cysts by Chloramines¹

Disinfectant	Temperature, °C					
	<1	5	10	15	20	25
Chloramines	3800	2200	1850	1500	1100	750

¹These values are for pH values of 6 to 9. These CT values may be assumed to achieve greater than 99.99 percent inactivation of viruses only if chlorine is added and mixed in the water prior to the addition of ammonia. If this condition is not met, the system must demonstrate, based on on-site studies or other information, as approved by the department, that the system is achieving at least 99.99 percent inactivation of viruses. Any CT values between the indicated temperatures may be determined by linear interpolation. If no interpolation is used, use the CT_{99,9} value at the lower temperature for determining CT_{99,9} values between indicated temperatures.

APPENDIX B: CT TABLES FOR *CRYPTOSPORIDIUM* INACTIVATIONTABLE 1: CT Values (mg-min/L) for *Cryptosporidium* Inactivation by Chlorine Dioxide¹

Log Credit	Water Temperature, °C										
	≤0.5	1	2	3	5	7	10	15	20	25	30
0.25	159	153	140	128	107	90	69	45	29	19	12
0.5	319	305	279	256	214	180	138	89	58	38	24
1.0	637	610	558	511	429	360	277	179	116	75	49
1.5	956	915	838	767	643	539	415	268	174	113	73
2.0	1275	1220	1117	1023	858	719	553	357	232	150	98
2.5	1594	1525	1396	1278	1072	899	691	447	289	188	122
3.0	1912	1830	1675	1534	1286	1079	830	536	347	226	147

¹Systems may use this equation to determine log credit between the indicated values:

$$\text{Log credit} = [0.001506 \times (1.09116)^{\text{Temp}}] \times \text{CT}$$

TABLE 2: CT Values (mg-min/L) for *Cryptosporidium* Inactivation by Ozone¹

Log Credit	Water Temperature, °C										
	≤0.5	1	2	3	5	7	10	15	20	25	30
0.25	6.0	5.8	5.2	4.8	4.0	3.3	2.5	1.6	1.0	0.6	0.39
0.5	12	12	10	9.5	7.9	6.5	4.9	3.1	2.0	1.2	0.78
1.0	24	23	21	19	16	13	9.9	6.2	3.9	2.5	1.6
1.5	36	35	31	29	24	20	15	9.3	5.9	3.7	2.4
2.0	48	46	42	38	32	26	20	12	7.8	4.9	3.1
2.5	60	58	52	48	40	33	25	16	9.8	6.2	3.9
3.0	72	69	63	57	47	39	30	19	12	7.4	4.7

¹Systems may use this equation to determine log credit between the indicated values:

$$\text{Log credit} = [0.0397 \times (1.09757)^{\text{Temp}}] \times \text{CT}$$

TABLE 3: UV Dose for *Cryptosporidium*, *Giardia lamblia*, and Virus Inactivation Credit¹

Log Credit	<i>Cryptosporidium</i> UV dose (mJ/cm ²)	<i>Giardia lamblia</i> UV dose (mJ/cm ²)	Virus UV dose (mJ/cm ²)
0.5	1.6	1.5	39
1.0	2.5	2.1	58
1.5	3.9	3.0	79
2.0	5.8	5.2	100
2.5	8.5	7.7	121
3.0	12	11	143
3.5	15	15	163
4.0	22	22	186

¹The treatment credits listed in Table 3 are for UV light at a wavelength of 254 nm as produced by a low-pressure mercury vapor lamp. To receive treatment credit for other lamp types, systems must demonstrate an equivalent germicidal dose through reactor validation testing. The UV dose values in this table are applicable only to post-filter applications of UV in filtered systems.

[ARC 9915B, IAB 12/14/11, effective 1/18/12]

APPENDIX C: CT TABLES FOR VIRUS INACTIVATION UNDER THE GROUNDWATER RULE, 567
—41.7(455B)

TABLE 1: CT Values (mg-min/L) for Inactivation of Viruses by Free Chlorine, pH 6.0-9.0¹

Inactivation Log Credit	Water Temperature, °C								
	1	2	3	4	5	6	7	8	9
2	5.8	5.3	4.9	4.4	4.0	3.8	3.6	3.4	3.2
3	8.7	8.0	7.3	6.7	6.0	5.6	5.2	4.8	4.4
4	11.6	10.7	9.8	8.9	8.0	7.6	7.2	6.8	6.4
¹ CT values provided in the table are modified by linear interpolation between 0.5°C increments.									

Inactivation Log Credit	Water Temperature, °C							
	10	11	12	13	14	15	16	17
2	3.0	2.8	2.6	2.4	2.2	2.0	1.8	1.6
3	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6
4	6.0	5.6	5.2	4.8	4.4	4.0	3.8	3.6
¹ CT values provided in the table are modified by linear interpolation between 0.5°C increments.								

Inactivation Log Credit	Water Temperature, °C							
	18	19	20	21	22	23	24	25
2	1.4	1.2	1.0	1.0	1.0	1.0	1.0	1.0
3	2.4	2.2	2.0	1.8	1.6	1.4	1.2	1.0
4	3.4	3.2	3.0	2.8	2.6	2.4	2.2	2.0
¹ CT values provided in the table are modified by linear interpolation between 0.5°C increments.								

TABLE 2: CT Values (mg-min/L) for Inactivation of Viruses by Free Chlorine, pH 9.1-10.0

Inactivation Log Credit	Water Temperature, °C					
	0.5	5	10	15	20	25
2	45	30	22	15	11	7
3	66	44	33	22	16	11
4	90	60	45	30	22	15

TABLE 3: CT Values (mg-min/L) for Inactivation of Viruses by Chlorine Dioxide, pH 6.0-9.0¹

Inactivation Log Credit	Water Temperature, °C								
	1	2	3	4	5	6	7	8	9
2	8.4	7.7	7.0	6.3	5.6	5.3	5.0	4.8	4.5
3	25.6	23.5	21.4	19.2	17.1	16.2	15.4	14.5	13.7
4	50.1	45.9	41.8	37.6	33.4	31.7	30.1	28.4	26.8

¹CT values provided in the table are modified by linear interpolation between 0.5°C increments.

Inactivation Log Credit	Water Temperature, °C							
	10	11	12	13	14	15	16	17
2	4.2	3.9	3.6	3.4	3.1	2.8	2.7	2.5
3	12.8	12.0	11.1	10.3	9.4	8.6	8.2	7.7
4	25.1	23.4	21.7	20.1	18.4	16.7	15.9	15.0

¹CT values provided in the table are modified by linear interpolation between 0.5°C increments.

Inactivation Log Credit	Water Temperature, °C							
	18	19	20	21	22	23	24	25
2	2.4	2.2	2.1	2.0	1.8	1.7	1.5	1.4
3	7.3	6.8	6.4	6.0	5.6	5.1	4.7	4.3
4	14.2	13.3	12.5	11.7	10.9	10.0	9.2	8.4

¹CT values provided in the table are modified by linear interpolation between 0.5°C increments.

TABLE 4: CT Values (mg-min/L) for Inactivation of Viruses by Ozone¹

Inactivation Log Credit	Water Temperature, °C								
	1	2	3	4	5	6	7	8	9
2	0.90	0.83	0.75	0.68	0.60	0.58	0.56	0.54	0.52
3	1.40	1.28	1.15	1.03	0.90	0.88	0.86	0.84	0.82
4	1.80	1.65	1.50	1.35	1.20	1.16	1.12	1.08	1.04

¹CT values provided in the table are modified by linear interpolation between 0.5°C increments.

Inactivation Log Credit	Water Temperature, °C							
	10	11	12	13	14	15	16	17
2	0.50	0.46	0.42	0.38	0.34	0.30	0.29	0.28
3	0.80	0.74	0.68	0.62	0.56	0.50	0.48	0.46
4	1.00	0.92	0.84	0.76	0.68	0.60	0.58	0.56

¹CT values provided in the table are modified by linear interpolation between 0.5°C increments.

Inactivation Log Credit	Water Temperature, °C							
	18	19	20	21	22	23	24	25
2	0.27	0.26	0.25	0.23	0.21	0.19	0.17	0.15
3	0.44	0.42	0.40	0.37	0.34	0.31	0.28	0.25
4	0.54	0.52	0.50	0.46	0.42	0.38	0.34	0.30

¹CT values provided in the table are modified by linear interpolation between 0.5°C increments.

No CT table is provided for chloramines or total chlorine because the CT values would be prohibitively high for groundwater systems.

Tables are from the EPA Groundwater Rule Implementation Guidance, EPA 816-R-09-004, January 2009, pages 97-98.

[ARC 3735C, IAB 4/11/18, effective 5/16/18]

These rules are intended to implement Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192.

[Filed 11/26/90, Notice 6/13/90—published 12/12/90, effective 1/16/91]

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[Filed ARC 3735C (Notice ARC 3568C, IAB 1/17/18), IAB 4/11/18, effective 5/16/18]

[Filed ARC 6190C (Notice ARC 6037C, IAB 11/17/21), IAB 2/9/22, effective 3/16/22]

¹ Effective date of 43.2(3)“b”(1) to (9) and 43.3(3)“b”(1) and (2) delayed until adjournment of the 1995 General Assembly by the Administrative Rules Review Committee at its meeting held March 13, 1995.

CHAPTER 44
DRINKING WATER STATE REVOLVING FUND

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—44.1(455B) Statutory authority. The authority for the Iowa department of natural resources (department) to administer the drinking water state revolving fund (DWSRF) is provided by Iowa Code sections 455B.291 through 455B.299.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.2(455B) Scope of title. The department and the Iowa Finance Authority (authority) are jointly designated to administer the DWSRF loan program to assist in the financing of infrastructure projects pursuant to the Safe Drinking Water Act (SDWA). The director will coordinate with the authority under the terms of an interagency agreement entered into pursuant to Iowa Code chapter 28E.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.3(455B) Purpose.

44.3(1) The DWSRF provides financial assistance to eligible public water supply systems (PWS) for the design and construction of facilities to ensure public health and the provision of safe and adequate drinking water.

44.3(2) The EPA provides capitalization grants for this program to the department. Financial assistance projects must be in conformance with the requirements of the Public Health Service Act (42 U.S.C. 300f et seq.), United States Code, Title XIV, Section 1452, Part E, and must comply with this chapter to be eligible for a DWSRF loan.

44.3(3) The department establishes priorities for the use of the DWSRF and publishes them in its intended use plan (IUP). The IUP will identify all proposed uses of set-asides and available loan funds. All potentially funded projects must be approved by the department and the environmental protection commission (EPC).

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.4(455B) Definitions. Definitions and abbreviations provided in 567—Chapter 40 apply to this chapter.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.5(455B) Set-asides. The DWSRF may use a portion of the capitalization grant funds for set-asides, in accordance with 40 CFR §35.3535. The SDWA authorizes set-aside funds to enable states to implement specific SDWA requirements. The amount and use of set-aside money is set each year in the IUP pursuant to rule 567—44.9(455B) and may be adjusted from year to year based on available funds and priorities as outlined in the IUP.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.6(455B) Eligibility.

44.6(1) Eligible systems. The following systems are eligible to receive funds from the DWSRF for improvements as listed and defined in the SDWA amendments of 1996 (P.L. 104-182, August 6, 1996).

- a. Community drinking water systems (CWSs).
- b. Nonprofit nontransient noncommunity drinking water systems (NTNCs).
- c. Cities and counties that are PWSs or can become viable new PWSs as a result of this project.
- d. Any other governmental subdivision of the state responsible for a PWS.

44.6(2) Ineligible systems and activities. The following systems and activities are ineligible to receive funds from the DWSRF.

- a. Any applicant that has not adopted and implemented satisfactory department-approved water conservation plans and practices, or demonstrated to the department an ongoing effort to adopt and implement such plans and practices within one calendar year from the date of the loan agreement.

b. Any applicant in significant noncompliance with any applicable primary drinking water regulation, unless the project will return the applicant to compliance.

c. Any applicant lacking viability (an applicant whose system lacks technical, financial, and managerial viability to comply with the SDWA and is nonviable or lacks capacity according to the definition in the SDWA), unless the applicant commits to undertake appropriate changes in operations, including ownership, management accounting, rates, maintenance, consolidation, alternative sources of water supply, or other procedures if the director determines that such changes are necessary to demonstrate viability.

d. Projects and activities deemed ineligible for participation in the DWSRF by the EPA's DWSRF regulations (40 CFR Part 35, Subpart L) or program guidance, or by the department.

44.6(3) *Certified operator requirement.* An eligible system must submit to the department the name, certification number, and certification expiration date of the certified operator, pursuant to 567—Chapter 81, in direct responsible charge for the facility operation before receiving a loan. A system without a certified operator shall not receive loan assistance.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.7(455B) Application.

44.7(1) *Application.* Applications for placement on the project priority list shall be accepted by the department on a continuous basis and will be presented to the EPC for approval according to the schedule described in the IUP. Application shall be made on the form provided by the department; the applicant may include additional information in the application. Forms may be obtained from www.iowasrf.com.

44.7(2) *Construction project application requirements.* An applicant seeking financial assistance for construction must include with the application:

a. A description of the entity's current drinking water supply system, including a discussion of existing and potential problems or failures in the current system and compliance with state and federal criteria;

b. A description of the type of project for which financial assistance is being requested;

c. An estimate of the population and the number of households to be served;

d. A completed Self-Assessment Manual for Iowa Water System Viability;

e. A description of the basis for project design;

f. A map showing the geographical area that the project is expected to serve;

g. A cost estimate for the selected project;

h. The amount of financial assistance being requested;

i. A proposed project construction schedule; and

j. A preliminary engineering report.

44.7(3) *Preliminary engineering report requirements.* To be eligible for placement on the project priority list for a construction loan, a system must have a preliminary engineering report of potential system needs (also known as a "planning" study) approved by the department, and must submit to the director a written application for placement on the list.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.8(455B) Project point ranking system (project priority list).

44.8(1) *Project priority list.* The director shall develop and maintain a project priority list of PWSs that have requested financial assistance through the DWSRF program to address either a new or an upgraded drinking water system, including individual subcomponents. The term "public water system projects" may also include separate segments or phases of a segmented or phased project. Projects will continue to be eligible for loan funding when funded for the first year of a multiyear project effort.

44.8(2) *Project priority list ranking criteria.*

a. A construction project's priority points shall be the total number of points assigned by the department pursuant to the scoring system delineated in 44.8(3). All projects shall be listed in descending order on the published project priority list according to the number of total priority points assigned each project.

b. When two or more projects have the same priority point total, the project sponsored by a system in the process of consolidation shall receive the higher priority. A private system in the process of forming and becoming a PWS shall have the next highest priority, and the entity with the smallest served population shall receive the next highest priority.

c. The most current official census population shall be used for all municipalities that serve only the population within their incorporated boundaries and that apply for these loan funds. For all other municipalities and other CWSs, and for NTNCs, population will be counted based on either the actual population, verifiable by the department, or population as calculated by multiplying by an occupancy factor of 2.5 persons per service connection. New systems will be counted based on census data, an occupancy factor of 2.5 persons per service connection, an occupancy factor of 2.5 persons per identifiable occupied building, or other means acceptable to the department.

d. Funding shall be offered to the projects with highest rank on the project priority list, subject to the project's readiness to proceed, and shall proceed from the highest project downward, subject to availability of funds.

e. The published project priority list shall be included in the department's IUP pursuant to 567—44.9(455B).

f. Projects involving a multiyear, phased effort may carry over their original priority point total from the previous year's application, provided that the project owner reapplies at each stage.

44.8(3) Project priority list scoring criteria. Eligible public drinking water supply projects shall be scored pursuant to the following priority point scoring system.

IOWA DWSRF PROJECT SCORING SYSTEM

(Multiple attributes within a lettered subcategory are not additive, but points are additive from other subcategories; consolidation/restructuring is an approved option to correct violations or "improve" treatment.)

Scoring Criterion	Points
A. Human Health Risk-related Criteria (maximum of 60 points)	
1. Correction of acute MCL or Tier I TT violation as defined in 567—paragraph 42.1(2) "a" (fecal coliform, nitrate, nitrite, chlorine dioxide, turbidity, CT corrective measures, and Giardia), or resolution of a health-based related BCA	60
2. Correction of nonacute MCL violation (IOCs excluding acute contaminants, radionuclides, SOCs, VOCs)	50
3. Correction of an expected MCL or TT violation (acute or nonacute)	45
4. Correction of Tier II TT violation as defined in 567—paragraph 42.1(3) "a" (Pb/Cu corrective measures, disinfection byproduct precursor removal)	40
5. Mitigation of an imminent threat from groundwater contamination (from a UST site, CERCLA site, or uncontrolled site)	35
6. Connection of individual residences to PWS to eliminate use of contaminated individual private wells (bacterial, nitrate, radionuclide, or IOC/VOC/SOC well contamination all eligible)	35
7. Replacement of asbestos cement pipe (replace at least 200 feet of pipe)	15
B. Infrastructure and Engineering-related Improvement Criteria (maximum of 35 points)	
1. Development of system redundancy and additional source to meet peak day demand with largest well or intake out of service; plant process rehabilitation (to ensure redundancy of treatment units to protect against acute or chronic MCL with system's largest treatment unit out of service); water storage improvements (reliability enhancement to increase effective storage to Average Daily Demand, including either at-ground or elevated storage); pumping improvements (meeting hydraulic and Ten-State Standard requirements for Average Daily Demand); or resolution of an infrastructure-related BCA	35
2. Water systems over capacity expansion. Points are allowable only when the system is operating at 85% or more of system design capacity. Source, plant, or distribution system improvements for system expansion are all eligible under this category.	30
3. Pressure and other distribution system improvements, including pump upgrades, pipe looping, valves, fittings, line replacement, hydrants, pumping stations, and water meters	25
4. Construction of resiliency projects to mitigate expected reduction or degradation of source and/or finished water quality or quantity caused by disaster events including but not limited to floods, droughts, ice storms, tornadoes, and cyberattacks	20
5. Treatment plant improvements, excluding operation and maintenance costs	15

Scoring Criterion	Points
6. Provision of emergency power/emergency pumping capacity including purchase of diesel generators or installation of automatic switching systems	15
7. Security improvements (fencing, lighting, video surveillance, locks, access control)	10
C. Affordability Criteria (maximum of 15 points)	
1. System meets the state DWSRF program's Disadvantaged Community (DAC) criteria as defined in the IUP	15
D. Special Category Improvements (maximum of 15 points)	
1. Wellhead or source water protection plan development or implementation meeting department standards, including loans for land or easement acquisition	15
2. Water conservation measures/conservation plan preparation, adoption, and enforcement	5
E. Department Adjustment Factor for Population	
1. (Project Serves) Population less than 10,000	10
TOTAL MAXIMUM POINTS	135

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.9(455B) Intended use plan (IUP).

44.9(1) Development. The director shall prepare an IUP at least annually and on a quarterly basis as needed. The IUP will be subject to a public hearing and approved by the commission and EPA.

44.9(2) Contents. The IUP will identify the anticipated uses of loan funds and will include:

- a. The state project priority list (defined in rule 567—44.8(455B)) that includes all projects that are eligible for DWSRF loans. The list will comply with 40 CFR §35.3555;
- b. Discussion of the long-term and short-term DWSRF goals;
- c. Information on the types of activities to be supported by the DWSRF, including requests for planning and design loans and any proposed activities eligible for assistance under set-aside authority of the SDWA;
- d. The method by which the IUP may be amended; and
- e. Assurances on how the state intends to meet environmental review requirements of the SDWA.

44.9(3) Eligibility. The department will consider the following in developing the list of eligible recipients for inclusion in the IUP:

- a. Whether a project will be ready to proceed on a schedule consistent with time requirements for outlay of funds; and
- b. Whether the project addresses the need upon which the system's priority is based.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.10(455B) Department review and approval of projects.

44.10(1) Project initiation conference. The department may require a project initiation meeting with an applicant or the applicants' representative.

44.10(2) Required project information.

a. An applicant seeking financial assistance from the DWSRF for a construction project must provide the following information to the director for review and approval:

- (1) A complete construction permit application pursuant to 567—Chapters 41 and 43, including plans and specifications, consistent with the IUP and the approved preliminary engineering report submitted pursuant to 44.7(3);
- (2) A complete description of the planned project, including the construction requirements necessary to complete the project as proposed;
- (3) The latest engineering cost estimate for the project; and
- (4) A demonstration of the applicant's ability to provide the necessary legal, institutional, managerial, and financial capability to complete the project.

b. Those portions of projects not meeting eligibility requirements may be excluded from the funded project, but included in the submitted plans and specifications if the applicant chooses to keep the loan-ineligible part of the project as part of the overall system improvement. Ineligible portions of projects include but are not limited to dams, water rights, monitoring costs, operation and maintenance expenses,

projects designed primarily in anticipation of speculative growth, and projects needed primarily for fire protection.

44.10(3) Department review. Departmental review requirements shall consist of the following:

a. Upon review and approval of construction projects submitted as required under 567—44.7(455B) and the plans and specifications as required under 44.10(2), and following a determination that the project meets the applicable requirements of the SDWA, federal regulations, Iowa statutes, and relevant portions of this chapter, the director shall approve the project in writing.

b. If there is an alteration (change order) to a project after the director approves the project, the eligible applicant must request, in writing, an amended department approval. The director shall review the request and proposed project alteration (change order) and, upon a determination that the project meets the applicable SDWA requirements, federal regulations, the August 7, 2000, DWSRF: Interim Final Rule (40 CFR Part 35, Subpart L), program guidance, Iowa statutes, and relevant portions of this chapter, the director shall approve the project as amended.

c. If the project is not approved, the director shall notify the applicant in writing of the reason for disapproval.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.11(455B) General administrative requirements.

44.11(1) Allowable costs. Allowable costs shall be limited to those costs deemed necessary, reasonable, and directly related to the efficient completion of the project. The director will determine project costs eligible for state assistance in accordance with rule 567—44.6(455B). Land purchase, easement, or rights-of-way costs are ineligible, with the exception of land that is integral to a project needed to meet or maintain public health protection and that is needed to locate eligible treatment or distribution works. Source water protection easements are considered to be integral to a project. The acquisition of land or easements has to be from a willing seller. In addition to costs identified in this chapter, unallowable costs include the following:

- a.* Costs of service lines, except lead-containing service lines and connectors;
- b.* Costs of in-house plumbing;
- c.* Administrative costs of the loan recipient; and
- d.* Costs of vehicles and tools.

44.11(2) Audits. The recipient shall provide access at all times for the department, the authority, the state auditor, and the Office of the Inspector General (OIG) at EPA to all project records and documents for inspection and audit purposes for a period of three years from the date of the final loan payment. The same access to the project site(s) shall be provided for inspection purposes.

44.11(3) Cross-cutters. Other federal and state statutes and programs, including federal “cross-cutters,” will be applicable to DWSRF projects.

44.11(4) Additional loan amount. If eligible costs exceed the loan amount, the recipient may request an increase. The director in coordination with the authority will evaluate the request by considering available money in the fund as well as compliance with other state and federal requirements.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.12(455B) Construction phase and postconstruction phase requirements.

44.12(1) Final inspection. A final inspection of the project may be performed by the director to verify that construction is complete (except for weather-related items) and conforms with the approved plans and specifications and all approved change orders.

44.12(2) Adequate project performance. The department shall undertake measures to discern adequate project performance as follows:

a. The loan recipient must certify to the director that the project is operating as planned and designed using a form approved by the department.

b. If the loan recipient is unable to certify that the project is operating as planned and designed, the recipient must submit a corrective action report to the director for review and approval. An acceptable corrective action report must contain an analysis of the project’s failure to operate as designed; a discussion

of the nature, scope, and cost of the action needed to correct the failure; and a schedule for completing the corrective work.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.13(455B) Sanctions. Failure of a project to conform to approved plans and specifications or failure of a loan recipient to comply with the requirements of 567—Chapter 40 through 567—Chapter 44 constitutes grounds for the withholding of loan disbursements. The loan recipient is then responsible for ensuring that the identified problem is rectified such that disbursements may be resumed. Once an agreement for correcting the conditions that led to the withholding of funds is reached between the department and the loan recipient, the retained funds shall be released according to the provisions of the agreement.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

567—44.14(455B) Disputes. A person or entity that disagrees with the project rankings, department decisions, or the withholding of project funding pursuant to this chapter may request a formal review of the action. A person or entity must submit a review request in writing to the director within 45 days of the action date. A decision by the director in a formal review case may be further appealed to the EPC.

[ARC 9198C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.291 through 455B.299.

[Filed 12/19/97, Notice 9/10/97—published 1/14/98, effective 2/18/98]

[Filed emergency 10/26/01—published 11/14/01, effective 10/26/01]

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[Filed ARC 9198C (Notice ARC 8625C, IAB 1/8/25), IAB 5/14/25, effective 6/18/25]

CHAPTERS 45 and 46
Reserved

CHAPTER 47
PRIVATE WELL SAMPLING, REHABILITATION, AND CLOSURE—
GRANTS TO COUNTIES
Rescinded IAB 10/11/06, effective 11/15/06

CHAPTER 48
Reserved

CHAPTER 49
NONPUBLIC WATER WELLS—PERMITS AND CONSTRUCTION

[Prior to 7/1/83, Health Dept. Ch 45]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—49.1(455B) Purpose. The purpose of this chapter is to protect the public health by protecting groundwater supplies from contamination by establishing uniform minimum standards and methods for nonpublic water supply well construction and reconstruction. This chapter provides minimum standards for installation of well pumps or equipment employed in withdrawing or obtaining water from a well for any use, except monitoring wells, including safeguards as may be necessary to protect from contamination the water in an aquifer and water being pumped from a well.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.2(455B) Definitions, references, and abbreviations. In addition to the definitions in 567—Chapter 39, 567—Chapter 40, and 567—Chapter 82; the references and abbreviations in 567—Chapter 40; and Iowa Code sections 455B.101, 455B.171, 455B.190 and 455B.190A, the following definitions and abbreviations shall apply to this chapter:

49.2(1) Definitions.

“Administrative authority” means the county board of supervisors or its designee.

“Agreement” means a signed document between the department and the county board of supervisors with which the department delegates the authority to issue private well drilling permits to the county board of supervisors or its designee.

“Anaerobic lagoon” means an impoundment, the primary function of which is to store and stabilize organic wastes. The impoundment is designed to receive wastes on a regular basis, and the design waste loading rates are such that the predominant biological activity in the impoundment will be anaerobic. An anaerobic lagoon does not include:

1. A runoff control basin that collects and stores only precipitation-induced runoff from an open feedlot feeding operation; or
2. A waste slurry storage basin that receives waste discharges from confinement feeding operations and that is designed for complete removal of accumulated wastes from the basin at least semiannually; or
3. Any anaerobic treatment system that includes collection and treatment facilities for all off-gases.

“Annular space” means the open space between the well hole excavation and the well casing.

“Cesspool” means a covered excavation, lined or unlined, into which wastes from toilets or urinals are discharged for disposal. Cesspools are not an approved method of sewage disposal.

“Compensation for well interference” means payment to the owner of a nonregulated well for damages caused by a lowered water level in the well due to withdrawal of water for a permitted use.

“Confinement building” means a building used in conjunction with a confinement feeding operation to house animals.

“Conforming well” means a well that complies with the standards of this chapter, including wells properly plugged according to 567—Chapter 39.

“Contiguous” means any number of parcels of land that physically touch one another, including tracts of land separated by roads, railroads or streams, except that for the purpose of reporting on other existing wells on the property, the radius of a contiguous piece of land shall be limited to one mile from the site of the newly constructed well.

“Contractor” is defined in Iowa Code section 455B.171(3). For the purposes of this chapter, the term also includes a corporation, partnership, sole proprietorship, association or any other business entity, and any employee or officer of the entity.

“Established grade” means the permanent point of contact of the ground to artificial surface with the casing or curbing of the well.

“GHEX” means ground heat exchange.

“GHEX loop borehole construction” means the borehole excavation, emplacement of the closed loop, grouting of the loop, and installation of the heat exchange fluid.

“GHEX loop boreholes” means ground heat exchange borehole(s); ground-coupled, closed-loop, heat exchange borehole(s); or any excavation 20 feet or greater in depth that is augered, bored, cored, drilled, driven, dug, jetted, washed, or is otherwise constructed into which a closed loop used for ground heat exchange is installed. A GHEX loop borehole is not a water supply well.

“GHEX loop system services” means any construction, installation, rehabilitation, repair, or plugging of the various components of ground heat exchange systems, including the borehole, piping, grout, and heat-exchange fluid.

“Health-related problem” means well water that contains any contaminant at a level that exceeds MCLs (maximum contaminant levels) or HALs (health advisory levels) as adopted by the department.

“Heavy drilling fluid” means water used for drilling that, because of the natural clay content of the borehole or by addition of bentonite grout, has a solids density of at least 10 percent by weight or a mud weight of at least 9.25 lbs/gal.

“Inactive well” means a well that is not currently in use and is capped or sealed to prevent the entrance of contaminants into the well but is in such a condition that it can be activated to produce a safe supply of water.

“Landowner” means an individual, trust, partnership, corporation, government or governmental subdivision or agency, association, or other legal entity that has legal or equitable title to a piece of land.

“Landowner’s agent” means a person who acts for or in place of the landowner by authority from the landowner.

“Low permeability material” means a geological unit of unconsolidated material (usually clay or till) or bedrock (usually shale) that is all or partially saturated and having permeability low enough (10⁻⁷ cm/sec) to give water in the aquifer artesian head.

“Nonpublic water supply well” means a well that does not supply a public water supply system (PWS).

“Nonregulated well” means a well used to supply water for a nonregulated use (a use of water less than 25,000 gallons per day that is not required to have a water use permit).

“Open feedlot” means an unroofed or partially roofed animal feeding operation in which no crop, vegetation, forage growth, or residue cover is maintained during the period that animals are confined in the operation.

“Permitted use” means a use of water in excess of 25,000 gallons per day that requires a water use permit pursuant to 567—Chapter 50 and Iowa Code chapter 455B, subchapter III, part 4.

“Pitless adapter” means a device designed for attachment to one or more openings through a well casing. It shall be constructed so as to prevent the entrance of contaminants into the well through such openings, conduct water from the well, protect the water from freezing or extremes of temperature, and provide access to water system parts within the well.

“Pitless unit” means an assembly that extends the upper end of the well casing to above grade. It shall be constructed so as to prevent the entrance of contaminants into the well, conduct water from the well, and protect the water from freezing or extremes of temperature, and provide full access to the well and to water system parts within the well. It shall provide a pitless well cap for the top terminal of the well.

“Private well” means a well that does not supply a public water supply system.

“Pumps and pumping equipment” means any equipment or materials, including seals, tanks, fittings and controls utilized or intended for use in withdrawing or obtaining water for any use.

“Runoff control basin” means an impoundment designed and operated to collect and store runoff from an open feedlot.

“Stuffing box” means an approved receptacle in which packing may be compressed to form a watertight or airtight junction between two objects.

“Upper terminus” means the upper ten feet of the well casing as measured from the finished surface grade.

“Well” is synonymous with “water well” as defined in Iowa Code section 455B.171. The term does not include heat pump or geothermal heat exchange systems less than 20 feet deep or temporary dewatering wells in place for seven days or less.

“*Well construction*” means constructing a well and installing necessary casing, screen, liners, grout, seals, and other appurtenances.

“*Well liner*” means a pipe used to line the inside of a well hole but not designed to hold hydraulic or structural loading. Liners shall be installed within a casing or in an ungrouted open borehole.

“*Well plugging*” means the closure of an abandoned well with plugging materials by procedures that will permanently seal the well from contamination by surface drainage and permanently seal off the well from contamination into an aquifer. “Well plugging” includes the proper application of filling and sealing materials.

“*Well reconstruction*” means modification of the original construction of a well. “Well reconstruction” includes but is not limited to deepening the well, installing a liner, installing or replacing a screen with one of a different diameter or length, installing a pitless adapter, extending the casing, or hydrofracturing a well. Replacing a screen with one of identical diameter and length or replacing a pitless adapter is considered repair, not reconstruction.

“*Well rehabilitation*” means the physical or chemical cleaning of a well.

“*Well seal*” means a device used to cover or seal a well that establishes or maintains a junction between the well casing and the piping, electric conduit, or equipment installed, so as to prevent water or other foreign material from entering the well at the uppermost terminal.

1. “Well cap” means a snug-fitting, watertight device used above flood level that excludes dust and vermin and allows for screened venting.

2. “Sanitary seal” means a watertight fitting that uses mechanical compression that is installed on wells that terminate in a wellhouse.

49.2(2) Abbreviations.

Abbreviation	Meaning
ABS	acrylonitrile-butadiene-styrene
DR	dimension ratio
FDA	U.S. Food and Drug Administration
HDPE	high-density polyethylene
HTH	high test hypochlorite
psi	pounds per square inch
PVC	polyvinyl chloride
SCH	schedule, as in a SCH 40 rating
SD	separation distance (a.k.a. setback distance)
SDR	standard dimension ratio
USP	United States Pharmacopeia
VFD	variable frequency drive

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.3(455B) Applicability. The provisions contained herein apply to the construction and reconstruction of all nonpublic water supply wells 20 feet or greater in depth.

49.3(1) Nonconforming well construction installations.

a. Certified well drillers and pump installers shall ensure that the reconstruction of nonconforming wells adheres to all applicable provisions of this chapter or to comparable construction or installation requirements approved by the administrative authority, except for separation distances (SDs).

b. When any construction or reconstruction is done on a nonconforming feature of a well, that feature shall be upgraded and brought into compliance with the material and installation standards in this chapter, except for SDs.

49.3(2) Nonconforming water system installations.

a. Certified pump installers shall ensure that the reconstruction or repair of nonconforming water systems adheres to all applicable provisions of this chapter or to comparable construction or installation requirements approved by the administrative authority.

b. When pump services are performed on a well that has a contamination problem, the well shall be upgraded and brought into compliance with the installation standards in this chapter, except for SDs.

c. When pump services are performed on a well that does not have a contamination problem, the well may be put back into service with nonconforming features. However, the certified installer shall notify the well owner in writing of the defects and include recommendations to correct these deficiencies.

49.3(3) Construction permit required.

a. In accordance with Iowa Code section 455B.187(2), a landowner or landowner's agent shall not construct a new private well without first obtaining a well construction permit from the department or a county authorized to issue permits pursuant to this chapter. Examples of private wells requiring well construction permits include but are not limited to domestic wells, livestock wells, irrigation wells, recreational-use wells, monitoring wells, heat pump wells, horizontal and lateral geothermal wells, industrial wells, and dewatering wells.

b. A private well construction permit is required for all replacement wells and for modification of the physical dimensions of a well.

49.3(4) Exemptions.

a. The permitting and construction rules in this chapter shall not apply to public water supply wells; elevator shafts; underground storage tank monitoring wells covered under 567—Chapter 135; or monitoring wells for solid waste disposal facilities covered in 567—Chapter 113.

b. All dewatering wells are exempt from the construction standards of this chapter, except that a construction permit is required if a dewatering well will be in place for more than seven consecutive days.

c. Private well construction permits are not required for temporary test holes or wells that are in place for seven consecutive days or less; soil borings; mineral, rock, gas, and other non-groundwater wells or exploration boreholes; and all monitoring wells required as part of a permit or a construction approval issued by the department.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.4(455B) General.

49.4(1) Duties of administrative authority.

a. The administrative authority shall:

- (1) Have the authority to visit well sites during any phase of the work without prior notice, and
- (2) Require the issuance of permits and the submission of well logs by rule.

b. The administrative authority may also require posting of performance bonds and the collection and submission of other data.

49.4(2) No well construction or reconstruction shall be initiated until a permit has been issued by the proper authority. Construction permit issuance covered by this chapter shall be coordinated with water withdrawal permits issued by the department, pursuant to 567—Chapter 50.

49.4(3) All well services shall be performed by a certified well contractor or the property owner as specified in 567—Chapter 82.

49.4(4) It is the responsibility of the certified well contractor to ensure that a well construction permit has been issued prior to initiation of well construction or reconstruction and to ensure that all well services are performed in accordance with this chapter.

49.4(5) Waivers. Waivers to these rules may be granted by the administrative authority if sufficient information is provided to substantiate equal protection and the need for such action. Waiver requests and reasoning shall be in writing. Waiver approvals or rejections shall also be in writing. Where permitting authority has not been delegated to the county, the department will review and grant or deny any waiver requests within that jurisdiction.

49.4(6) Noncompliance. Violations of any of the provisions of this chapter may be addressed by the department pursuant to Iowa Code sections 455B.109, 455B.110, 455B.175 and 455B.191.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.5(455B) Private well construction permit applications and fees.

49.5(1) Application forms.

a. An application for a private well construction permit shall be made on forms provided by the department. However, counties that have active delegation of authority to issue new private well construction permits pursuant to rule 567—49.7(455B) may develop and use their own application forms, subject to department approval.

b. Each application shall list all wells, including non-plugged abandoned wells, on the applicant's property contiguous to the well site described in the application and describe the location of each well site. The location(s) shall be given as a legal land description (section, township and range) to the nearest quarter of a quarter of a quarter of a section, or as a latitude and longitude in degrees to four-decimal accuracy.

c. A proper application shall consist of a fully completed form and nonrefundable fee.

49.5(2) Application fees.

a. Each application for a private well construction permit shall be accompanied by a nonrefundable fee of \$125 payable to the department of natural resources unless a county is authorized to issue private well construction permits pursuant to rule 567—49.7(455B).

b. In cases where the permitting authority is delegated to a county, it may set a different fee and designate the terms for fee payment and shall submit to the department a permit fee of \$25 per application. This \$25 fee shall be submitted quarterly by the counties in a manner provided by the department.

c. More than one proposed well for the same use on one contiguous piece of property of less than ten acres may be listed on one application and only one fee need be paid irrespective of the number of wells listed on the application form. Additional wells on the same property at a later time shall require another permit. Separate permits are required for individual wells and geothermal systems that are not interconnected and supply or will supply separate domestic or commercial dwellings.

d. The department is exempt from the fee payment requirements to the counties. The department shall remit fees directly to the department's private well permit program fund.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.6(455B) Private well construction permit issuance, conditions, expiration, and denial.

49.6(1) Issuance. Upon receipt of a complete application, the department or contracting county shall issue a private well construction permit to the landowner or landowner's agent, except as provided in 49.6(6).

49.6(2) Not a water withdrawal permit. Each permit shall include notification that a private well construction permit is not a water withdrawal permit and does not eliminate the necessity of obtaining any water withdrawal permits required in 567—Chapters 50 and 53 through 55 for water withdrawal in excess of 25,000 gallons of water per day from any source or combination of sources in the state of Iowa.

49.6(3) Construction by certified well contractor. Each well construction permit shall require that each well be constructed by a certified well contractor in compliance with this chapter and 567—Chapter 82.

49.6(4) Transferability. A private well construction permit is not transferable.

49.6(5) Expiration. A private well construction permit shall expire one calendar year from the date of issuance. If the well construction is not started prior to the permit expiration date, a new application plus a new nonrefundable fee must be filed with the department or the county pursuant to 49.5(2).

49.6(6) Permit denial. The department or contracting county may deny a private well construction permit in the following circumstances:

a. If granting the permit would lead to the violation of state law, could result in groundwater contamination, or would lead to withdrawal from a protected source;

b. If the well could threaten public health or the environment; or

c. If the well would be an underground agricultural drainage injection well.

49.6(7) Appeal of permit denial. Any applicant aggrieved by a decision issued under the provisions of this chapter may file a notice of appeal with the director. The notice of appeal must be filed within 30 days of the date of the permit decision. The form of the notice of appeal and appeal procedures are governed by 561—Chapter 7. Appeal of a permit denied by a county that has been delegated authority to issue private well construction permits shall be administered by the county in accordance with its appeal or judiciary

review process. Appeal to the department is possible only when the appeal involves well design or construction variances or if delegation to the county is suspended, rescinded, or revoked.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.7(455B) Delegation of construction permitting authority to a county.

49.7(1) *Application.* A county board of supervisors, board of health, or the board's designee, hereafter referred to as a "county," requesting the authority to issue private well construction permits shall enter into an intergovernmental (28E) service agreement with the department in accordance with Iowa Code chapter 28E. The agreement shall be signed by the department and the county and include statements complying with this chapter and 567—Chapter 39. Additional information supporting an application may be requested by the department. The department may contract for all or part of the private well permitting services in those counties that do not receive or maintain delegation authority or for permit authorities retained by the department.

49.7(2) *Information to the department.* The delegation agreement shall provide for the method, format, and frequency of reporting all permit application information and remission of fees to the department.

49.7(3) *Authority.* After delegation of authority to a county, all applications in that county shall be made to the board or its designee, except that all new private well construction permit applications by state or federal agencies shall be made to the department.

49.7(4) *Delegation term.* A delegation of authority may be for up to five years and may be redelegated at the department's discretion.

49.7(5) *Permit number.* Each permit shall be given a unique number as prescribed by the department. This numbering system shall be consistent throughout the state.

49.7(6) *Emergency permits.* Contracting counties must have policies and procedures in place to accommodate the issuance of permits on an emergency basis for the immediate replacement or reconstruction of wells in response to the sudden and unforeseen loss or serious impairment of a well for its intended use.

49.7(7) *Delegation agreement revocation.* The department may revoke a county delegation agreement if the board of supervisors or the board's designee failed or refused to carry out the provisions of this chapter in a timely manner or violated any of the provisions of the delegation agreement with the department.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.8(455B) Well location and separation distances (SDs).

49.8(1) Wells shall be located with consideration given to the lot size; soil contour, porosity, and absorbency; local groundwater conditions; flooding; publicly available geologic data including but not limited to well logs; and other factors necessary to implement the rules.

a. Frost pits. Wells cannot be located within frost pits. Frost pits that do not contain wells are allowed for the purpose of housing other appurtenances, such as pressure tanks and valves, provided the frost pits are not located closer than ten feet from any well.

b. Relation to buildings. Wells shall be located so that no building interferes with reasonable access for cleaning, treatment, repair, testing, inspection, or other maintenance. Wells cannot be located in basements.

c. Easements. No well shall be located on a property not owned by the well owner unless an easement allowing such placement is reviewed and approved by the administrative authority and the easement is legally recorded.

49.8(2) The following minimum lateral SDs in Table I below from all private wells shall apply for the common structures or sources of contamination listed in the table. The lack of specific distances to other possible sources of contamination, such as refuse disposal sites and high-pressure gas lines, does not minimize their potential hazard. Other possible sources shall be evaluated in each particular situation and a distance arrived at that is based on pertinent facts. The well contractor shall consult the administrative authority for assistance in determining a proper distance in such cases.

TABLE I: Private Well Separation Distances

Structure or Source of Contamination	Required Minimum Lateral Distance, as Measured Horizontally on the Ground Surface, in feet	
	Private Wells	
	Deep Well ¹	Shallow Well ¹
WELLS:		
Public wells:		
Public water supply well – deep or shallow	200	400
Below-ground level finished water storage facility	50	
Private wells:		
Existing private wells that do not conform to 567—Chapter 49	100	
Existing private wells that conform to 567—Chapter 49	10	
WASTEWATER DISPOSAL SYSTEMS:		
PSDSs and onsite treatment systems – closed portion ²	50	
PSDSs and onsite treatment systems – open portion ²	100	
Wastewater treatment works ^{3,4,5}	400	
CHEMICALS:		
Transmission pipelines (including but not limited to fertilizer, liquid petroleum, or anhydrous ammonia) ⁶	100	200
Chemical and mineral storage or preparation areas, including areas for spray materials, commercial fertilizers, or chemicals that may contaminate groundwater, except for liquid propane gas (LPG)	150	
Liquid hydrocarbon storage tanks, except for LPG	100	
LPG storage tanks	15	
ANIMALS:		
Animal enclosures (such as confinement buildings or open feedlots)	100	200
Animal Wastes:		
Storage basins or lagoons, or runoff control basins	1000 ⁵	
Solids stockpiles, solids settling facilities, or storage tanks	100	200
WATERBODIES:		
Flowing streams, ponds, lakes, reservoirs, wetlands, or drainage channels ⁷	25	
MISCELLANEOUS		
Anaerobic lagoons ⁵	1000 ⁸	
Solid waste landfills and disposal sites ⁸	1000	
Roadside ditches and road rights-of-way	15	
Cisterns, well pits (containing a well head), yard hydrants, or frost pits	10	
Property lines ⁹	4	
Land application of septage ¹⁰	500	
Land application of sewage sludge	200	
CONVEYANCES: ¹¹		
Gravity sanitary sewers and sanitary sewer force mains including those carrying water treatment plant wastes:		
Water main materials ¹²	25 ¹³	
Standard sanitary sewer materials ¹²	50 ¹³	
Storm sewers, general minimums	10	
Independent clear water drains or pump house floor drains	10	
Building sewer service lines and laterals ¹⁴	10	

¹Deep and shallow wells are defined in rule 567—40.2(455B).

²PSDS (private sewage disposal system) is defined in 567—subrule 69.1(2). For the purposes of this table, “onsite treatment system” includes any wastewater treatment system not included in the definition of a PSDS (i.e., provides treatment or disposal of domestic sewage from more than four dwelling units or 16 or more individuals on a continuing basis) that is utilizing wastewater treatment technologies described in 567—Chapter 69 to treat domestic waste. Closed portion refers to the part of a treatment system that is fully contained and does not allow effluent or pretreated effluent to enter soil or groundwater (e.g., septic tank or impervious vault toilet). Open portion refers to the part of a treatment system that allows effluent or pretreated effluent to discharge into soil or groundwater for treatment or disposal (e.g., soil absorption system or unlined ISSF system). These SDs also apply to septic systems that are not considered privately owned.

³For the purposes of this table, “wastewater treatment works” includes lagoons and mechanical treatment plants as described in this superscript. The term “lagoons” includes aerated lagoon systems, advanced aerated lagoon systems, and waste stabilization lagoons, as defined in 567—subrule 81.1(1), and holding ponds, equalization basins, and sludge digestion or holding tanks, as described in the Iowa Wastewater Facilities Design Standards (IWFDS). The term does not include lagoons used to dispose of water treatment plant wastes and anaerobic lagoons used for animal wastes (as noted in superscript 5). The SD from lagoons shall be measured from the water surface. The term “mechanical treatment plants” includes activated sludge systems and fixed film biological treatment systems, as defined in 567—subrule 81.1(1), and any other wastewater disposal system that is not a PSDS, an onsite treatment system, or a lagoon.

⁴The SD between an existing, nonpotable, deep or shallow private well and an industrial treatment works may be reduced from 400 feet to 200 feet to accommodate the expansion of an existing industrial treatment works, provided the well and the treatment works share the same ownership.

⁵The 400-foot SD between a private well and an anaerobic lagoon, earthen manure storage basin, earthen manure slurry storage basin, or runoff control basin shall be 1,000 feet. If an applicant for a private well construction permit demonstrates through percolation testing that the seepage loss through the lagoon or basin does not exceed 1/16 inch per day (0.0625 inch/day), the SD shall be 400 feet. The percolation test shall meet the requirements of ASTM D1587/D1587M-15 and 567—subrule 65.15(11).

⁶These private well SDs apply only if a more restrictive setback is not set by the pipeline owner.

⁷Includes drainage channels that may have a direct connection to the groundwater table or a surface water.

⁸Solid waste, when referring to landfills and disposal sites, means garbage, refuse, rubbish, and other similar discarded solid or semisolid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities.

⁹This distance applies unless a mutual easement is signed and recorded by both parties.

¹⁰Septage shall be land applied in accordance with 567—Chapter 68.

¹¹The SDs are dependent upon two factors: the type of piping that is in the existing sewer or drain, as noted in the table, and that the piping was properly installed in accordance with the standards.

¹²These are the type of materials or pipe used to construct the type of sewer, main, or drain as specified, in accordance with 567—subrule 43.3(2) and Section 2.4 of the IWFDS.

¹³The 25- and 50-foot SDs do not apply to private closed-loop geothermal wells. The SD between closed-loop geothermal systems and both gravity sanitary sewers and sanitary sewer force mains shall be 10 feet.

¹⁴The SD for building sewer service lines and laterals shall be considered the minimum distance when constructing sewer lines and shall be increased where possible to provide better protection.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.9(455B) General construction requirements. Wells shall be planned and constructed to adapt to the geologic and groundwater conditions of the proposed well site to ensure both the reasonable utilization of every natural protection against contamination of the water-bearing formation(s) and the exclusion of

possible sources of contamination, to attempt to produce bacterially safe water free of health-related problems.

49.9(1) *Water used in construction.* Water used in the construction process shall be obtained from a potable water source that will not result in well contamination. Drilling water shall be treated with 3 pints of 5.25 percent sodium hypochlorite solution per 100 gallons of water, 0.25 pounds of 65 percent calcium hypochlorite per 100 gallons of water, or other additives to produce an equivalent concentration of chlorine residual (50 ppm).

49.9(2) *Wellhead.*

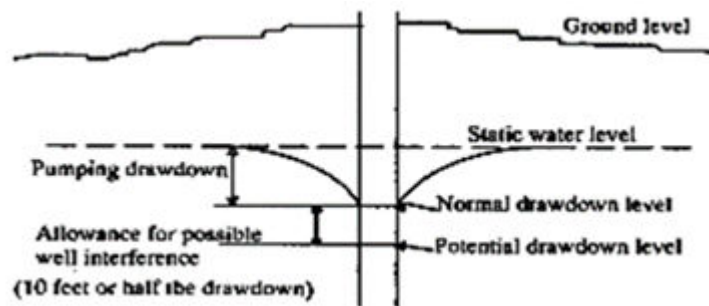
a. The upper terminal casing of all wells shall extend at least 12 inches above established grade or pump house floor, or the 100-year flood level, whichever is higher. A well cap or sanitary seal shall be installed immediately following well completion. A well cap shall be used on an exposed well; a sanitary seal only on a well terminating within a wellhouse. Any openings in the cap or seal, such as for pump wiring or water depth measurement, shall be properly grommeted or sealed, except for properly screened and oriented vent openings.

b. The ground surface immediately adjacent to the well casing shall be compacted and graded so that surface water is diverted away from the casing. Well platforms are not recommended, except those used as pump house floors.

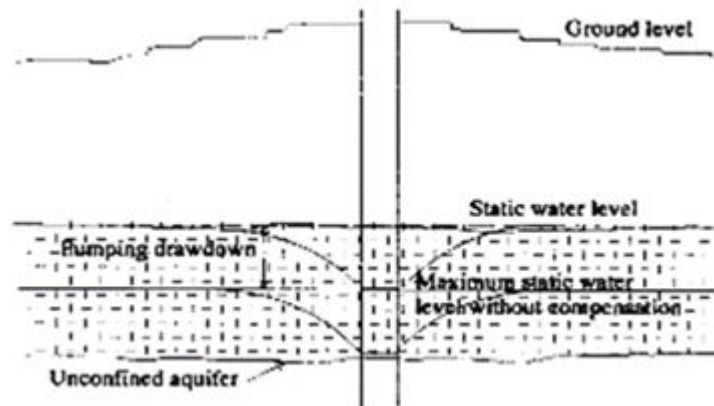
49.9(3) *Criteria for well interference protection.* 567—Chapter 54 provides an administrative process for owners of nonregulated wells to receive compensation for well interference caused by permitted uses. To be eligible for compensation due to well interference, nonregulated wells shall be constructed to allow for some potential well interference.

a. Allowance for potential well interference is accomplished by constructing a nonregulated well to anticipate a lowering of the well's static head, which may be caused by interference from a nearby permitted use well.

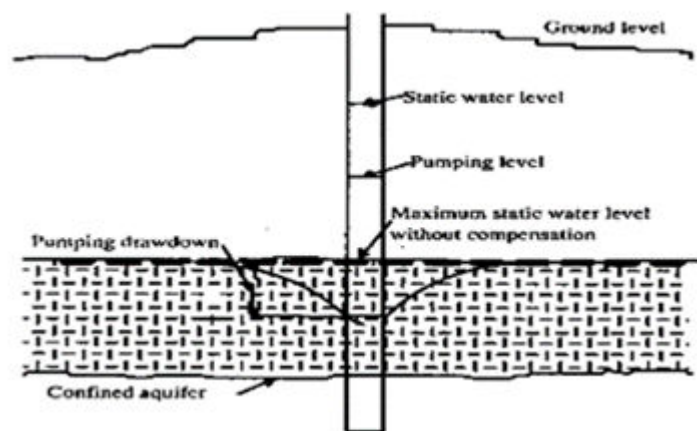
(1) A well shall be drilled deep enough to allow for pump setting at least 10 feet or half the normal pumping drawdown, whichever is greater, below the initial recommended setting depth.



(2) If a well draws from an unconfined aquifer, the static water level may drop to half the saturated thickness of the aquifer before well interference is considered, if the calculation in (1) above should indicate a shallower depth. Shallow aquifers that are only slightly confined may be classified as unconfined aquifers for this purpose.



(3) Where a well penetrates a confined aquifer, the static water level is protected only to the top of the aquifer if the calculation in (1) above should indicate a deeper level.



(4) Protected levels for flowing wells will be considered the top of the confined aquifer or 100 feet below the surface, whichever is higher. Flowing wells shall be constructed to accommodate a pump capable of supplying a sufficient water supply at protected levels.

(5) The well design also needs to consider drought and reduced well efficiency. Additional information is provided in 567—Chapter 54.

b. A well that is used to withdraw more than 25,000 gallons of water per day requires a water use permit from the department. Upon obtaining such a permit, the well is considered a permitted use.

(1) If a permitted use exists prior to the construction of a well without a water use permit, no compensation for well interference will be allowed unless a significant change in the permitted use occurs.

(2) A physical change to withdrawal facilities may be considered a significant change to a permitted use (e.g., moving the withdrawal location, installing a new well, or installing a higher capacity pump).

(3) A person desiring to construct a well not requiring a water use permit should first obtain information concerning nearby permitted use wells. The department shall provide information on permitted use wells upon request.

49.9(4) Access port for water level measurement. Permitted use wells shall be equipped with an access port having a minimum diameter of $\frac{3}{4}$ inch. The access port shall be fitted with a threaded cap or plug and be located to allow insertion of a steel tape or electric probe into the well for water level measurements. When a spool type of pitless adapter is used that obstructs clear access to the water, a $\frac{3}{4}$ -inch pipe shall be attached to the spool and brought to the surface below the well cap to allow water level measurements. Wells not requiring a water use permit should be constructed with an access port for water level measurement for possible future well interference concerns.

49.9(5) Interconnection of aquifers. Permitted use wells shall use casing and grouting to maintain a hydraulic separation between distinct aquifers separated by confining intervals. Hydraulic separation of

distinct aquifers for non-permitted use wells is not required; however, caution should be taken to prevent aquifer contamination, and the administrative authority shall be consulted for possible local regulations when interconnection of aquifers across confining intervals is anticipated.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.10(455B) Types of well construction.

49.10(1) Drilled wells.

a. Non-bedrock wells.

(1) Casing depth. In no case shall less than 20 feet of permanent solid casing be installed in wells drilled in unconsolidated materials. If the alluvial aquifer where the water is to be drawn from is covered by less than 40 feet of low permeability materials, the well screen shall be set at the bottom of the water-bearing aquifer or at least 60 feet from the surface. Deeper depths may be required if nitrate contamination is excessive. If more than 40 feet of low permeability materials are present above the aquifer, the casing shall extend down at least to the top of the aquifer.

(2) Grouting.

1. Grout shall be placed to a minimum depth of 40 feet or along the full length of the casing where less than 40 feet of casing is set. Grouting the full length of the casing below 40 feet may be necessary to isolate any contaminated water lenses or aquifers.

2. If a layer of low permeability material at least 5 feet thick is encountered less than 40 feet from the surface, the grout may be terminated no less than 5 feet below the top of this low permeability material, but in no case less than 20 feet from the ground surface.

3. Grout shall be placed in accordance with 49.11(3), except when driving casing. When driving casing, a cone-shaped depression or temporary outer casing that is filled with bentonite products must be maintained around the well casing. The bottom of the driven casing shall be equipped with a drive shoe.

(3) Annular space.

1. The borehole diameter shall be at least three inches greater than the outside diameter of the well casing to the minimum grouting depth.

2. When steel well casing pipe is installed using percussion methods, the annular space shall be at least five inches greater than the outside diameter of the well casing to a minimum depth of 25 feet.

(4) If the depth of casing is greater than 40 feet, the annular space below 40 feet may be filled with heavy drilling fluid taken from the borehole as long as the top 40 feet of annular space is properly grouted. In this case, the annular space below 40 feet shall be kept as small as possible to avoid settling.

b. Bored and augered non-bedrock wells with concrete, fiberglass, or clay tile casing. The casing shall be at least 18 inches in diameter and buried-slab construction is required.

(1) Casing.

1. The top of the concrete, fiberglass, or vitrified clay pipe casing shall be terminated not less than 10 feet below ground surface and extend to a minimum depth of 20 feet.

2. Casing shall be fitted with a reinforced concrete, fiberglass, or steel plate, into which a watertight steel or thermoplastic casing is firmly embedded in or connected to a pipe that is cast or welded into the plate.

3. The embedded casing shall be at least 5 inches in diameter and shall extend from the plate to not less than 12 inches above established grade or the 100-year flood level, whichever is higher.

4. A pitless adapter shall be installed below frost depth on newly installed plastic or steel casing.

(2) Grout. A 12-inch grout seal shall be poured over and around the plate.

(3) Annular space. The annular space between the steel or thermoplastic casing and the borehole shall be backfilled with clean compacted soil free of debris or large organic material. During the backfilling process, the earth shall be thoroughly tamped to minimize settling. Grading around the well shall then be accomplished in accordance with 49.9(2).

c. Bedrock wells.

(1) Casing depth. Casing shall extend to a depth of at least 40 feet and be seated in firm rock. When the uppermost bedrock consists of creviced limestone or dolomite that does not produce water, the casing shall extend through the creviced formation, be seated in firm rock, and be properly grouted.

(2) Grouting.

1. For bedrock wells, full-length grouting of the casing is strongly recommended. Grout shall be placed to a minimum depth of 40 feet in accordance with 49.11(3), except when driving casing using percussion or casing-hammer/rotary drilling.

2. When driving casing, a cone-shaped depression or temporary outer casing that is filled with bentonite products shall be maintained around the outside of the casing. The bottom of the driven casing shall be equipped with a drive shoe.

3. If a layer of low permeability material at least 5 feet thick is encountered less than 40 feet from the surface, the grout may be terminated no less than 5 feet below the top of this low permeability material, but in no case less than 20 feet from the ground surface.

4. Where local conditions warrant, the administrative authority may require more extensive grouting to protect any aquifer(s) that are penetrated.

(3) Annular space.

1. The borehole shall be at least three inches greater than the outside diameter of the well casing for the upper 40 feet or the minimum grouting depth.

2. When steel casing pipe is installed using percussion, or casing-hammer/rotary methods, the annular space shall be at least five inches greater than the outside diameter of the well casing to a minimum depth of 25 feet.

3. When bedrock wells are full-length pressure-grouted through the casing, the borehole diameter shall be three inches larger than the outside diameter of the casing for the minimum depth of at least 25 feet.

(4) If the depth of casing is greater than 40 feet, the annular space below 40 feet may be filled with heavy drilling fluid taken from the borehole as long as the top 40 feet of annular space is properly grouted. In this case, the annular space below 40 feet shall be kept as small as possible to avoid settling.

(5) In fractured rock, where circulation of slurry cannot be maintained, grouting may be done with bentonite chips. The chips shall be hydrated with one gallon of water per bag of bentonite.

49.10(2) *Driven, direct push, and sandpoint wells.* Well construction in sandy areas with a high water table is not recommended for potable water supplies. These types of wells shall meet the requirements of this chapter, except for casing depth and grouting requirements.

49.10(3) *Flowing artesian wells.*

a. Drilling operations shall extend into but not through the formation confining the water. The casing shall be installed and the annular space full-length pressure-grouted and allowed to set. After the grout is set, the drill hole shall be extended into the confined water-bearing formation.

b. Flow control from the well shall be provided by valved pipe connections or a receiving tank set at an altitude corresponding to that of the artesian head. Under no circumstances shall the water flow uncontrolled to waste.

c. A direct connection between the discharge pipe and a receiving tank, sewer, or other source of contamination is prohibited.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.11(455B) Material standards. All materials utilized in well water construction shall conform to the standards and guidance of the AWWA, API, ASTM, and NGWA, except as modified by this rule.

49.11(1) *Well casing.*

a. *Steel well casing and couplings.*

(1) Steel well casing pipe shall have the weights and dimensions specified in Table II. Well casing pipe shall be new steel pipe meeting one of the following standards:

1. ASTM A-53-96,
2. ASTM A-106-95,
3. ASTM A-589-95a - Type I, II or III,
4. API SPEC 5CT (5th Edition, 4/1/95),
5. API SPEC 5D (3rd Edition, 8/1/92), or
6. API SPEC 5L (41st Edition, 4/1/95).

(2) Each length of casing shall be legibly marked in accordance with API or ASTM marking specifications with the manufacturer's or processor's name or trademark, size in inches, weight in pounds

per foot, whether seamless or welded (type of weld), and the API or ASTM specification or trade monogram.

(3) All casing pipe joints shall be watertight welded construction or threaded couplings.

(4) Minimum casing pipe and coupling weights and dimensions are shown in Table II below:

Table II - Minimum Casing Pipe and Coupling Weights and Dimensions

Size (inches)	Weight (lbs/ft)		Pipe				Couplings	
	Threads & coupling	Plain end	Thickness (inches)	External diameter (inches)	Internal diameter (inches)	Threads per inch	External diameter (inches)	Length (inches)
1	1.70	1.68	.133	1.315	1.049	11-1/2	1.576	2-5/8
1-1/4	2.30	2.27	.140	1.660	1.380	11-1/2	1.900	2-3/4
1-1/2	2.75	2.72	.145	1.900	1.610	11-1/2	2.200	2-3/4
2	3.75	3.65	.154	2.375	2.067	11-1/2	2.750	2-7/8
2-1/2	5.90	5.79	.203	2.875	2.469	8	3.250	3-15/16
3	7.70	7.58	.216	3.500	3.068	8	4.000	4-1/16
3-1/2	9.25	9.11	.226	4.000	3.548	8	4.625	4-3/16
4	11.00	10.79	.237	4.500	4.026	8	5.200	4-5/16
5	15.00	14.62	.258	5.563	5.047	8	6.296	4-1/2
6	19.46	18.97	.280	6.625	6.065	8	7.390	4-11/16
6-5/8 OD	20.00	19.49	.288	6.625	6.049	8	7.390	4-11/16
7 OD	20.00	19.54	.272	7.000	6.366	8 R	7.657	4-11/16
8	29.35	28.55	.322	8.625	8.071	8	9.625	5-1/16
10	41.85	40.48	.365	10.750	10.136	8	11.750	5-9/16
12	51.15	49.56	.375	12.750	12.090	8	14.000	5-15/16
14 OD	57.00	54.57	.375	14.000	13.250	8	15.000	6-3/8
16 OD	65.30	62.58	.375	16.000	15.250	8	17.000	6-3/4
18 OD	73.00	70.59	.375	18.000	17.250	8	19.000	7-1/8
20 OD	81.00	78.60	.375	20.000	19.250	8	21.000	7-5/8

R = Round Threads

b. *Thermoplastic casing and couplings.*

(1) Materials. Thermoplastic well casing pipe and couplings shall:

1. Be new PVC or ABS material having a minimum pressure rating of 200 psi and meeting one of the following standards: ASTM F 480-12, ASTM D2241-09, AWWA C-900-16, or ASTM 1785-21; and

2. Have an SDR of 21, 17, or 13.5, a DR of 18 or 14, or a SCH 40 or 80 rating, depending upon the specification.

(2) Potable water standards. The thermoplastic well casing pipe, pipe couplings, cement, primer, and other components shall be approved for well casing pipe in potable water supplies by the NSF 61-2016 or the health effects portion of NSF 14-2012 as they relate to well casing pipe, or an approved equivalent organization.

(3) Markings. Each length of casing shall be legibly marked with the manufacturer's or processor's name or trademark, the size in inches, and the ASTM F 480 specification or trade monogram.

(4) Casing joints. Thermoplastic pipe shall be assembled with either flush-threaded joints, integral-bell, solvent-cemented joints, one-piece solvent-cemented couplings, or a nonmetallic restrained joint system in accordance with ASTM F 480-12.

(5) When cement grout is used with thermoplastic casing, the manufacturer's specifications for use shall be followed, except in the top 40 feet.

(6) Thermoplastic pipe extending above ground shall be protected from ultraviolet light exposure.

(7) Under no circumstances shall thermoplastic well casing be driven.

49.11(2) Grouting guides. Casing that is to be grouted shall have a minimum of two sets of centering guides attached to the casing to allow for unobstructed flow and deposition of grout.

49.11(3) Grouting materials and procedures.

a. *Concrete grout.* This mixture shall consist of cement, sand aggregate, and water, in the proportion of one bag cement (94 lbs.) and an equal volume of aggregate to not more than six gallons of clean water. Concrete grout shall not be used below the water table. Admixtures to reduce permeability or control setting time shall meet ASTM C 494-19. Concrete grout may be used with administrative authority permission where large void spaces need to be filled.

b. *Neat cement grout.* This mixture shall consist of one bag of cement (94 lbs.) to not more than six gallons of clean water. Admixtures to reduce permeability or control setting time shall meet ASTM C 494-19.

c. *Bentonite grout.* This is a mixture of water and commercial sodium-bentonite clay manufactured for the purpose of well grouting. Mixing shall be per manufacturer's specifications. Sodium-bentonite mixtures that have high viscosity but contain less than 10 percent solids are designed for drilling purposes and shall not be used as grout. Organic polymers used in grout mixtures shall meet NSF 60-2016.

d. *Bentonite pellets, chips, or granular bentonite.* A layer of bentonite pellets, chips, or granular bentonite not exceeding five feet may be used between the gravel pack and grout. Bentonite pellets are otherwise not permissible.

e. *Exclusion.* Drilling fluids and cuttings may not be used as grouting material.

f. *Application.* Grouting shall be performed by pumping the mixture into the annular space from the bottom upward through the casing or through a tremie pipe until the annular space is filled. Grouting shall be done in one continuous operation, if possible. The bottom of the tremie pipe shall remain submerged in grout while grouting.

g. *Exceptions.* If buried-slab, percussion, or casing-hammer/rotary methods are used to construct a well, grouting shall be performed in accordance with 49.10(1) and 49.10(2). If slurry circulation cannot be maintained, grouting shall be performed in accordance with 49.10(1) "c"(5).

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.12(455B) Well reconstruction. All well reconstruction shall meet the requirements of this chapter, except for SDs. If the well feature in need of reconstruction cannot be brought into compliance with these rules, the well shall be properly plugged.

49.12(1) Liner installation. If reconstruction will involve the placement of a liner, a certified well contractor shall determine whether or not the proposed reconstruction is being done in order to correct a health-related problem. Based on the determination, the reconstruction shall be performed in accordance with either 49.12(1) "a" or "b" below.

a. *Standards for liner installation to correct a health-related problem.*

(1) The liner shall:

1. Have a minimum of two sets of centering guides to allow the proper placement of grout, and
2. Extend to the ground surface or top of the pitless adapter.

(2) In no case shall the liner be driven into place.

(3) The annular space between the old casing and the liner shall be pressure-grouted in place throughout its entire length using an approved grout.

b. *Standards for liner installation to correct a problem that is not health-related.*

(1) The liner shall extend at least ten feet above the static water level or, if a caving zone is present, shall extend above this region.

(2) The liner may be pressure-grouted in place if there is a sufficient annular space for proper grout application.

c. *Liner materials.* Liners shall meet the well casing standards in 49.11(1). Liners may be composed of either steel or thermoplastic with a minimum inside diameter of four inches. Steel liners shall be new and have a minimum wall thickness of .188 inches. Plastic liners shall have an SDR of 26 or less or be SCH 40 or SCH 80. If the installation does not meet the definition of a liner, casing material shall be used.

49.12(2) Upper terminus. All well reconstruction performed on the upper terminus of a well shall meet the standards of this chapter, except for SDs.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.13(455B) Drilling mud disposal. Drilling fluid and mud remaining after construction of a well shall not be disposed of in a stream or storm sewer; nor shall these materials be discharged into a sanitary sewer without permission of the owner and operator of the wastewater treatment facility.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.14(455B) Pumps, pumping equipment, and wiring.

49.14(1) General pump installation requirements. Pump installation shall be planned and carried out so the pump will be:

- a. Installed so that it and its surroundings are not exposed to chemical or biological contamination;
- b. Properly sized so as to provide the volume of water necessary, where obtainable, for an adequate water supply;
- c. Designed to meet the well characteristics and not exceed the yield of the well, except for low yield seepage/storage wells;
- d. Installed without repriming or breaking suction;
- e. Installed in a manner that provides adequate protection against contamination of the water supply from any surface or subsurface sources; and
- f. Accessible for maintenance, repair, and removal.

49.14(2) Lubrication. Pump motor lubricant or coolant oil shall be NSF H1 approved or be FDA Generally Recognized As Safe (GRAS)-approved for incidental food contact.

49.14(3) Other power pumps. Other power pumps located over the well shall be mechanically joined to the casing or on a pump foundation or stand in a manner that effectively seals the top of the well. A sanitary seal shall be used where the pump is not located over the well, and the pump delivery or suction pipe emerges from the top.

49.14(4) Hand pumps or similar devices.

a. A hand pump, hand pump head, hand pump stand, or similar device shall be constructed so that there are no openings into the interior of the pump or well casing where rain or surface water, dirt, insects, or animals, or other foreign matter can enter.

b. Hand pumps shall:

- (1) Be provided with a casing vent as described in 49.17(2);
- (2) Have a closed, downward-directed spout and a sealed pump rod packing assembly; and
- (3) Be attached to a well casing by a sealed flange or other method approved by the administrative authority. The flange shall not be less than 12 inches above a concrete slab or the ground surface.

c. Where a well casing functions as a hand pump cylinder wall, the plunger shall not be less than 25 feet below the ground surface. Casing wall weep holes are not allowed.

49.14(5) Pump wiring. Pump wiring within the well shall be double-jacketed copper wire meeting the NEC specifications for wire sizing unless the pump manufacturer requires a non-jacketed wire. Wire outside of the casing shall meet NEC specifications, at a minimum. Wire shall be secured to the drop pipe at a minimum of 20-foot intervals.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.15(455B) Drop pipe.

49.15(1) Discharge pipe. Galvanized, black, or stainless steel drop pipe shall be minimum SCH 40 wall thickness when threaded. Minimum SCH 10 stainless is allowed with mechanical joint type systems. PVC drop pipe shall be minimum SCH 80 wall thickness. SCH 80 machined PVC, brass, stainless steel couplings, or equivalent thickness cast couplings (including mechanical joints), shall be used with PVC pipe. Polyethylene drop pipe shall meet the minimum specifications of ASTM D3350-21. Only brass or stainless steel fittings can be used on polyethylene drop pipe. If polyethylene drop pipe is used, the outside diameter of the pump shall be at least one inch smaller than the inside diameter of the well casing.

49.15(2) Check valve. For potable water installations, all pumps shall have a check valve within 20 feet of the pump for pump installations without drain-back aeration. For pump installations with drain-back aeration, the check valve shall be below the pitless adapter.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.16(455B) Pitless adapters and pitless units.

49.16(1) Pitless adapters and pitless units conforming to WSC Pitless Adapter Standard—1997 (PAS-97) are considered compliant with these rules.

49.16(2) No well casing shall be cut off or cut into below ground surface except to install a pitless well adapter below the frost level.

49.16(3) A pitless subsurface pipe connection to a well casing pipe shall be made with a weld-on, clamp-on, or bolt-on pitless adapter or weld-on or threaded pitless unit. Aboveground discharge pitless adapters with a drain-back into the well are prohibited on systems under continuous pressure.

49.16(4) If the pitless adapter is gasketed, the opening in the casing shall be sawed to the diameter recommended by the manufacturer with a hole saw and not cut with a torch. The pitless adapter used shall have the correct curvature to fit the diameter of the casing.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.17(455B) Well caps, seals, and vents.**49.17(1) Caps and seals.**

a. A well cap shall be used on any well not protected by a wellhouse and shall seal tightly against the casing to prevent surface water, dirt, insects, or any foreign matter from entering the well.

b. The well casing shall terminate at least one foot above the finished grade surface.

c. A split-top sanitary seal may only be used on a well terminating within a wellhouse.

d. Any openings in the cap or seal, such as for pump wiring, water depth measurement, or chemical feed, shall be properly grommeted or sealed, except for properly screened and oriented vent openings.

e. There shall be no openings through the well cap except for a factory-installed vent, air-line chemical feed, and power supply wiring unless a proposal is submitted to and approved by the administrative authority. To be approved, a proposal shall show that any entrance into the well cap is watertight, prevents surface water from entering the water supply, is secured in position, is only removable with tools, and is resistant to weathering and corrosion.

f. Well pump systems that are not under continuous pressure and have no pressure tank may discharge out of the top of the well if all connections are watertight welds or grommeted openings. Venting, heights, and other cap requirements shall be met.

49.17(2) Vents. A well cap used on a well that has a pitless adapter or pitless unit shall have a screened vent hole at least ½ inch in diameter, pointing downward, with not less than 24-mesh noncorrosive screen. Vent openings shall terminate at least 12 inches above finished ground surface. Venting is required on all wells, except Class 3 wells or flowing wells.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.18(455B) Underground piping and wiring.

49.18(1) Underground piping from the well casing to the pressure tank shall be a minimum 100 psi pressure rating, NSF Standard 61, and meet ASTM standards for potable water.

49.18(2) Underground wiring from a well shall either be enclosed in a watertight electrical conduit extending from the entrance of the conduit into the casing to a minimum of three feet below ground level, threaded into the well cap, or sealed into the cap or casing in a watertight manner. The internal passage of the conduit shall be sealed around the wire with a nonhardening, pliable sealing compound.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.19(455B) Filters, water treatment equipment, and sampling faucets.

49.19(1) Filters and water treatment equipment shall be installed and operated in accordance with manufacturers' directions.

49.19(2) In all pressure water systems, provision shall be made for collection of water samples directly from the well by installation of a sampling faucet before the pressure tank, prior to encountering any water treatment equipment.

a. The sampling faucet shall be installed at least 12 inches above the floor, have a downturned spout, and be in an accessible location.

b. All sample faucets shall be metal and have a smooth (nonthreaded) outlet.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.20(455B) Hydropneumatic (pressure) tanks.

49.20(1) *Sizing.* With the exception of tanks that utilize VFDs, pressure tanks shall have an effective water volume large enough to allow the well pump to operate at least one minute between low-pressure activation and high-pressure shut off while no water is being used by the system. The minimum pressure shall be set according to the manufacturer's recommendation.

49.20(2) *Constant pressure pump.* Constant pressure/variable speed pumps shall be sized and operated at the minimum pressure according to manufacturer's recommendation.

49.20(3) *Pressure relief valve.* Tanks shall have a pressure relief valve sized according to the pump capacity, if the pump is capable of developing pressure greater than the working pressure of any system component. The pressure relief valve shall be located prior to any shut-off valve on the distribution system side of the tank.

49.20(4) *Pressure gauge.* Tanks shall have a pressure gauge capable of reading at least 100 psi.

49.20(5) *Tank appurtenances.* If a non-bladder tank is used, it shall be equipped with a means of adding or venting air from the tank to maintain the proper air-water ratio.

49.20(6) *Tank location.* Buried pressure tanks are prohibited. If pressure tanks are not located in a residence or other heated structure, they shall be located in a buried vault or aboveground structure.

a. Buried vault (frost pit). The vault and vault opening shall be sized to allow ease of access for the installation and maintenance of necessary equipment. The vault shall be as watertight as possible, allow for drainage via drain tile or sump pump, and have at least one foot of rock or gravel above the tile. All wiring in the vault shall be in watertight conduit. No buried vault shall be allowed within a 100-year flood plain.

b. Aboveground structure. The structure and access opening shall be sized to allow the installation and maintenance of necessary equipment. The structure shall be insulated and heated to prevent tank freezing. Structures with concrete floors shall be at least four inches above the surrounding ground and be sloped to a drain or to the door to facilitate drainage. If the structure is located over the well, it shall have a hinged roof or removable hatch over the well or have other provisions for pulling the well pump.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.21(455B) Connections.

49.21(1) *Electrical connections.* At a minimum, all electrical installation shall be performed and maintained in accordance with the NEC. A certified pump installer may perform wiring from the pump to the electrical panel unless local ordinances require additional licensing.

49.21(2) *Interconnections and cross connections.* No connection between a well or boring and another well, boring, water supply system, any chemical injection, or contamination source is allowed unless the connection is:

- a. Protected by an air gap;*
- b. Protected by a backflow preventer as approved by the department;*
- c. Inspected upon completion, and inspected annually by a certified backflow prevention assembly tester in accordance with 481—Chapter 476; or*
- d. Between wells or borings that meet the construction standards of this chapter, are used for the same purpose, and have equivalent quality water supply.*

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.22(455B) Backflow prevention for chemical injection systems for nonpotable wells.

49.22(1) *Backflow prevention for irrigation.* Where a chemical injection system is connected directly to a well used for irrigation that is not used as a potable water supply, a single-check spring-loaded backflow preventer shall be installed between the point of chemical injection on the pump discharge piping and the well, in accordance with the manufacturer's instructions. The check valve shall withstand a minimum hydraulic pressure of 150 psi without leaking. The backflow device shall be provided with:

- a. Valving so that water can be drained from the system to prevent freezing;*
- b. A vacuum relief valve to prevent backsiphoning of chemicals into the well;*
- c. An automatic low-pressure drain at least ¾ inch in diameter, positioned so that when draining occurs liquid will flow away from the well. This drain shall be at least six inches above grade, and shall quickly drain the check valve water when operation of the well pump is discontinued;*

- d. A watertight seal around the check valve; and
- e. An inspection port four inches in diameter to allow inspection of check valve operation.

49.22(2) Pump control interconnection. The well pump and the chemical injection pump shall be electrically connected so that, when the well pump stops, the chemical pump will shut off automatically.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.23(455B) Ground heat exchange (GHEX) closed-loop borehole systems. In addition to the other provisions of this chapter, the following provisions apply to the construction of GHEX loop systems 20 feet or greater in depth.

49.23(1) Piping shall be a minimum of 160 psi pressure-rated HDPE and be pressure-tested with air or potable water for 15 minutes at a pressure of 1.5 times the system operating pressure, after installation in the borehole.

49.23(2) Connection to piping shall use socket fusion or butt fusion joining methods.

49.23(3) Only potable water, or food-grade or USP-grade propylene glycol or calcium chloride, may be used as heat transfer fluid.

a. Heat transfer fluids containing additives shall be NSF certified as HT1 in the NSF White Book.

b. Any other materials or additives shall be NSF 60 certified.

c. Additives shall be mixed only in concentrations recommended by the manufacturer.

d. A permanent sign shall be attached to the heat pump specifying the exact mixture of heat transfer fluid contained and stating that only approved heat transfer fluids may be used.

49.23(4) A flow measurement device shall be installed on each system.

49.23(5) Water make-up lines to the vertical heat exchanger shall be protected with a backflow prevention device.

49.23(6) Grouting shall be performed for the full length of the borehole via tremie pipe from the bottom upwards with the tremie submerged in grout during the entire process. The grout shall be checked for subsidence at least 24 hours after the initial grouting. If subsidence has occurred, the grouting process shall be repeated and rechecked until the borehole is fully grouted and subsidence has stopped.

49.23(7) All buried piping, including the top of vertical boreholes and the full length of horizontal piping, shall be permanently marked with magnetic tape, magnetic wire, or survey pins to allow for underground detection or utility location at the ground surface.

49.23(8) Within 30 days of GHEX borehole system installation, an as-built aerial map or engineering document shall be submitted to the permitting authority with the well record form showing the location and GPS coordinates of each vertical and horizontal borehole and all horizontal piping from the borehole into the building and vault. The permitting authority shall upload the document to the department's private well database.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.24(455B) Well disinfection. Wells and water systems shall be disinfected by the contractor following construction completion and whenever any well services are performed.

49.24(1) Prior to disinfection, all new, repaired or rehabilitated wells shall be pumped to waste until the water is free of drilling mud, drill cuttings, and sand, and the water is clear.

49.24(2) A chlorine solution, such as a sodium or calcium hypochlorite, shall be used for well disinfection. Chlorine compounds and any additives shall be NSF 60 (2016) certified.

49.24(3) Disinfectant shall:

a. Be dispersed throughout the entire water column in the well,

b. Be brought into contact with the inside of the well casing pipe above the static water level, and

c. Remain in the well for a minimum of two hours if a concentration of at least 100 mg/L chlorine is achieved, or a minimum of 24 hours if at least 50 mg/L is achieved.

49.24(4) For emergency situations, a contact time of a minimum of 30 minutes shall be provided at a chlorine concentration of at least 200 mg/L.

49.24(5) The amount of HTH or household bleach required for a chlorine concentration of 200 mg/L is given in Table III below:

Table III - Amount of chlorine disinfectant required for every 25 feet of water in well

Well casing diameter (in inches)	4	6	8	12	18	24	30	36
Amount of pelleted HTH (in ounces containing approx. 70 percent $\text{Ca}(\text{OCl})_2$)	0.7	1.5	2.6	5.6	13	23	36	52
Amount of chlorine bleach (in pints containing 5.25 percent NaOCl)	0.5	1.2	2.1	4.7	10.6	18.8	29.3	42.2

49.24(6) Dry disinfectant shall be dissolved in a separate container of water before introduction into the well. The solution shall contain not more than eight ounces of pelleted HTH disinfectant per five gallons of water.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.25(455B) Water sampling and analysis.

49.25(1) The owner of a new, reconstructed, or rehabilitated well shall submit a water sample to a certified laboratory for coliform bacteria and nitrate analysis, or allow the administrative authority to collect this water sample. The water sample shall be collected at least 10 days after, but not more than 30 days after, a well is put into service following construction, reconstruction, or rehabilitation. The analysis results shall be submitted to the administrative authority.

49.25(2) If the water sample analysis detects the presence of bacteria, the disinfection procedure described in rule 567—49.24(455B) shall be repeated.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

567—49.26(455B) Well abandonment. Abandoned wells are a contamination hazard to the water bearing formation as well as a physical hazard for people.

49.26(1) *Plugging rules.* Abandoned wells shall be properly plugged as required in 567—Chapter 39.

49.26(2) *Waste disposal prohibition.* Under no circumstances shall abandoned wells be used for the disposal of debris, solid waste, septic tank sludge or effluents; for any other type of unauthorized disposal of waste materials; or as a receptacle for field tile drainage.

[ARC 9196C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code chapter 455B.

[Filed 5/20/80, Notice 11/14/79—published 6/11/80, effective 10/1/80]¹

[Filed emergency 2/20/81 after Notice 12/24/80—published 3/18/81, effective 2/28/81]

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[Filed ARC 9196C (Notice ARC 8627C, IAB 1/8/25), IAB 5/14/25, effective 6/18/25]

¹ Effective date of Chapter 49 [Health Dept. Ch 45] delayed 70 days by the Administrative Rules Review Committee [Published 10/1/80]. Effective date of Chapter 49 [Health Dept. Ch 45] delayed by the Administrative Rules Review Committee 45 days after convening of the next General Assembly pursuant to §17A.8(9) [Published 11/26/80].

² Effective date of 49.9(1)“a” delayed 70 days by the Administrative Rules Review Committee at its meeting held May 12, 1998.

DIVISION C
WITHDRAWAL, DIVERSION AND STORAGE OF WATER: WATER RIGHTS ALLOCATION

CHAPTER 50
WATER USE, WITHDRAWALS, AND DIVERSIONS

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—50.1(455B) Scope of division. The department has jurisdiction over the surface and groundwater of the state to establish and administer a comprehensive program to ensure that the water resources of the state be put to beneficial use to the fullest extent possible, that the waste or unreasonable use or unreasonable methods of use of water be prevented, and that the conservation and protection of water resources be required with the view to their reasonable and beneficial use in the interest of the people.

Any person who proposes to pump or divert by gravity more than 25,000 gallons of water during a period of 24 hours or less from any source of groundwater or surface water, including streams bordering the state; impound surface water; divert surface runoff into a well, sinkhole or excavation; or inject water or any material into a well has a duty to review the thresholds in this chapter and contact the department to resolve any doubt concerning whether a permit is required.

This chapter explains when approval is required for withdrawal, diversion, or storage of water and the criteria for permitting the withdrawal or diversion of water. 567—Chapter 53 sets forth the procedure for designating certain ground and surface water sources as protected sources and explains special criteria and conditions that may be applicable to those sources. 567—Chapter 54 describes procedures and criteria for determining compensation to owners of nonregulated wells for well interference caused by permitted uses. [ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.2(455B) Definitions. In addition to the definitions, references, and abbreviations in 567—Chapter 40, the following definitions apply to this title unless otherwise specified in the particular chapter of this title:

“Administrative resolution” means the settlement of well interference conflicts by the department according to established rules and procedures.

“Aquifer” means a water-bearing geological formation of sufficient volume, porosity, and permeability to be capable of yielding a usable quantity of water to a well or spring.

“Certified well contractor” means a well contractor who has successfully passed an examination prescribed by the department to determine the applicant’s qualifications to perform well drilling or pump services or both pursuant to 567—Chapter 82.

“Community public water supply” or *“CWS”* means a system for the provision to the public of piped water for domestic use that has at least 15 service connections used by year-round residents or serves at least 25 year-round residents.

“Confined aquifer” means an aquifer that contains water under pressure and bounded above and below by confining layers. In a well penetrating a confined aquifer, pressure will cause water to rise above the top of the aquifer.

“Confining layer” means a body of low permeable geologic material that is located above or below one or more aquifers.

“Conflict” means a dispute between a nonregulated or regulated well owner and a permitted water user regarding the liability of the permitted user for well interference damages to the nonregulated well.

“Consumptive use” means any use of water that involves substantial evaporation, transpiration, incorporation of water into a product, or removal of water from a source without return to the source.

“Domestic use” means a use of water for human consumption and sanitation and public safety (fire protection).

“Drainage system” means tile lines, laterals, surface inlets, or other improvements that are constructed to facilitate land drainage.

“Drawdown” means the decrease in groundwater level due to well pumping.

“General crop” means commercial field corn, hay, soybeans, oats, grain sorghum, or wheat.

“Industrial use” means a use of water by manufacturing, processing, commercial, and other industrial facilities to provide a product or a service, excluding domestic use, irrigation use, livestock use, quarry use, power generation use, and recreational and aesthetic use.

“Interior stream” means rivers, creeks, or other watercourses located within the interior of Iowa, not forming the borders of the state.

“Irrigation use” means a use of water that is artificially applied to land to aid growth of general crops and specialty crops.

“Livestock use” means a use of water in the production of animals, such as for drinking, sanitation, and cooling.

“Nonregulated well” means a well used to supply water for a nonregulated use.

“Permitted use” means a use of water in excess of 25,000 gallons per day that requires a water use permit pursuant to these rules and Iowa Code chapter 455B, subchapter III, part 4.

“Pesticide” means (1) any substance or mixture of substances intended to prevent, destroy, repel, or mitigate, directly or indirectly, any insects, rodents, nematodes, fungi, weeds, or other forms of plant or animal life or viruses, except viruses on or in living persons, which the secretary of agriculture shall declare to be a pest; and (2) any substance intended for use as a plant growth regulator, defoliant, or desiccant.

“Power generation use” means a use of water incidental to the generation of electric power for distribution and sale to the public, including process water and water for cooling purposes.

“Protected flow” means the *“established average minimum flow”* defined in Iowa Code section 455B.261.

“Protected source” means a surface water or groundwater source recognized by rule as needing special protection to ensure its long-term availability, in terms of either quality, quantity, or both, to preserve the public health and welfare.

“Pump test” means a department-approved test for pumping from a well at controlled rate(s) for a specified duration while water levels are accurately measured at given frequencies in the pumping well and observation well(s).

“Quarry use” means a use of water for the extraction of stone, sand, minerals, or other geologic materials from the earth.

“Recreational and aesthetic use” means a use of water that is not essential for the preservation of life, the general welfare, or the state’s economic base. Examples include but are not limited to flooding of wildlife areas, filling of pools and fountains, nonessential cooling, car washing, street cleaning, washing of other exterior surfaces, amusement park-type water rides, turf watering, and watering of landscape plantings.

“Seven-day, 1-in-10 year low flow” or *“7Q10”* means the minimum average flow expected to occur during a period of seven consecutive days that has an average recurrence interval of once in ten years.

“Specialty crop” means all other crops not listed as a general crop.

“Stream” means a watercourse other than a lake as defined in Iowa Code section 455B.261.

“Stream bordering the state” means those reaches of the Missouri, Mississippi, Des Moines, and Big Sioux rivers that mark Iowa’s boundaries.

“Sufficient water supply” means a nonregulated well that is capable of providing enough water for the nonregulated use.

“Surface water” means water occurring on the surface of the ground.

“Surface water intake” means an artificial opening to a drain tile that drains into an agricultural drainage well, if the artificial opening allows surface water to enter the drain tile without filtration through the soil profile.

“Test pumping” means a controlled aquifer test for verification of well interference.

“Verified well interference” means well interference that has been proven by test pumping or with other substantial evidence to have caused or will cause a nonregulated well to be unable to maintain a sufficient water supply.

“Water use reduction plan” means a plan that establishes numeric water reduction goals on a short-term time frame through either voluntary or mandatory water conservation requirements.

“Well interference” means the lowering of water level in a well caused by the withdrawal of water at another location (usually a nearby well).

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.3(17A,455B) Forms.

50.3(1) *Application forms.* The following application forms are currently in use:

Form 16: Application for a New Water Use Permit or to Modify an Existing Water Use Permit. 542-3106.

Form 18: Application for Permit to Store Water for Beneficial Use. 542-3109.

Form 20: Registration of Minor Nonrecurring Use of Water. 542-3112.

Form 542-1470: Water Supply Section Water Use Permit Renewal.

Form 542-1539: Application for Use of an Agricultural Drainage Well.

50.3(2) *Supplementary information forms.* The following forms are used to obtain additional information to supplement applications:

Form 21: Survey of Land Owners and Occupants. 542-3113.

Form 22: Well Inventory Form. 542-3114.

Form 122: Water Well Inspection Report.

50.3(3) *Reporting form.* The following form is for reporting permitted activities:

Form 23: Report of Water Use by all Regulated Users. 542-3115.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.4(17A,455B) When a water use permit is required. Unless otherwise provided herein, a water use permit shall be required for the use, withdrawal, or diversion of more than 25,000 gallons of water per day for any purpose.

50.4(1) *Drainage at construction sites.* A permittee may obtain permit coverage through registration as described in 50.4(4) for a withdrawal of water to lower the water table as necessary at a construction site.

50.4(2) *Pump test.* The department may authorize by registration as described in 50.4(4) test pumping of sources of water to determine the source’s adequacy and the effects of water withdrawals on other users and the natural environment. The department may require an applicant to submit the pump test results to the department. No registration for a pump test shall be for a period of more than one year. A registration must be obtained from the department for any pump test in which more than 25,000 gallons of water will be withdrawn in a 24-hour period.

50.4(3) *Rural water districts.* A water use permit shall be required for withdrawals of water by any rural water district having its own source of water, and such a withdrawal shall be classified as a use by a CWS.

50.4(4) *Permit coverage obtained by registration for minor, nonrecurring uses.* Any use of water that is a minor, nonrecurring use, including but not limited to highway construction and maintenance, charging of lagoons, drilling wells, or hydrostatic testing of pipelines, shall require permit coverage that may be obtained through registration.

a. An applicant may register a minor, nonrecurring water use by submitting the registration form provided by the department. Such registrations shall be for up to one year.

b. After an investigation of any withdrawal allegedly causing material damage, the department shall require prompt, appropriate action for the alleviation of damages. Where agreement cannot be reached on the action necessary for the alleviation of damages, withdrawal of water shall cease immediately upon notification by the department and a water use permit application shall be submitted.

50.4(5) *Research contracts.* Water withdrawals for research purposes by the Iowa Geological Survey through its agents, employees, or contractees may be authorized by registration under 50.4(4) and may be subject to conditions set by the department.

50.4(6) *Excavation and processing of rock and gravel products.* A water use permit is required for withdrawal of more than 25,000 gallons of surface water or groundwater in one day in connection with removal or processing of rock or gravel products. A water use permit is not required for the following:

a. Operation of a hydraulic dredge that returns all water used as a transport medium directly back into the pit from which it is withdrawn by the dredge; and

b. Water withdrawal from a gravel pit or rock quarry sump pit for material washing if the wash water is discharged directly back into the pit from which it is withdrawn.

50.4(7) *Diversion from surface into aquifer.* A water use permit is required for diversion of water or any other material from the surface directly into any aquifer, including diversion by means of an agricultural drainage well. Diversion by tile or ditch into a sinkhole or quarry excavated in carbonate rock is presumed to be a diversion from the surface directly into an aquifer in the absence of convincing evidence to the contrary.

50.4(8) *Cooling/heating systems.* A water use permit to withdraw groundwater for use as a heat exchange media in a heating/cooling system may be granted, allowing such groundwater to be discharged into sanitary or storm sewers when the use is complete. However, a permittee that has such a system shall make a plan and design provisions to the permittee's system to allow the groundwater to be reinjected to the aquifer from which it was originally pumped. The department reserves the right to order such direct return as part of its water conservation plan responsibility described in 50.16(3) and its priority allocation plan responsibility described in rule 567—50.17(455B).

50.4(9) *Drain tile lines.* Water in drain tile lines shall be considered surface water.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274, and 455B.278 and chapter 460.

567—50.5(17A,455B) Water use permit applications.

50.5(1) *Application forms.* Department forms for water use permit applications and modifications are listed in 50.3(1) and are located on the water use program website at www.iowadnr.gov/wateruse.

a. Application for approval of a new withdrawal or diversion of water. For withdrawals or diversions of water, a water use permit application shall be submitted to the department by or on behalf of the owner, lessee, easement holder, or option holder of the source and area where the water is to be withdrawn, diverted, and used. An application shall be accompanied by a map portraying the withdrawal or diversion points and the land area on which water is to be used.

b. Application for modification or renewal of a water use permit. A request for renewal of a water use permit shall be submitted to the department. A request to modify an existing water use permit shall be submitted to the department and must include an explanation of the necessity for the modification.

50.5(2) *Fees.*

a. Water use permit application fees. A new water use permit application, an existing water use permit modification request, or a registration of a minor nonrecurring use of water must be accompanied by the fee listed in the table below. These fees are nonrefundable and nontransferable. For any single application, if more than one fee applies, only the higher fee is required.

Water Use Permit Application Description	Form	Fee, in dollars
(1) To apply for a new permit to withdraw or divert water	16 (542-3106)	\$350
(2) To renew an existing permit	542-1470	\$0
(3) To modify an existing permit to either add a new source or increase the amount or rate of water withdrawn or diverted from a source or sources	16 (542-3106)	\$350
(4) To modify the conditions of an existing permit that are not described in Item 3 of this table	16 (542-3106)	\$0
(5) To apply for an ASR permit or a protected source designation	N/A	\$700
(6) To register a minor nonrecurring use of water	20 (542-3112)	\$75

b. Annual water use permit fee. In addition to the application fee, there is an annual permit fee. Each water use permittee shall pay the same annual fee. The fee is not prorated and is nonrefundable. The annual water use permit fee is due December 1 of each year. The department will provide an annual fee notice to each permittee at least 60 days prior to the fee due date. An additional fee of \$100 will be imposed if the fee is not received by December 1. Failure to remit the fee by January 1 may result in permit termination.

(1) The annual fee shall be based on the costs for administering the water use permitting program for the previous calendar years and on the anticipated expenses for succeeding fiscal years. The department will review the annual permit fee each year and adjust the fee as necessary to cover all reasonable costs required to develop and administer the water use permitting program. The department shall request commission approval of the amount of the annual fee no later than September 30 of each year.

(2) Permittees that have paid an application fee after December 1, but prior to November 30, will not be required to pay an annual fee until December 1 of the following year. If an applicant remits an annual fee for the 12-month period beginning December 1 and then later submits an application fee for a permit modification, the applicant will be refunded the lesser fee.

50.5(3) *Required supporting information.* A water use permit application shall not be considered complete until the fee specified in this rule and all supporting information requested under rule 567—50.6(17A,455B) has been submitted by the applicant or the applicant's agent.

50.5(4) *Initial screening of water use permit applications.*

a. General procedure. Upon receipt, each application shall be evaluated by the department to determine whether adequate information is available to review the project. The department shall then advise the applicant of additional information required for project review.

b. Application to withdraw groundwater. Evaluation of the potential effects of a proposed withdrawal of groundwater requires review of available hydrogeological information. The department may require additional supporting hydrogeological information, which the applicant is responsible for providing.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.6(17A,455B) Supporting information for water use permit applications. As described in this rule, applicants shall submit supporting information reasonably required to assist the department in conducting the investigation required by Iowa Code sections 455B.264 and 455B.281 and in determining whether permit issuance would be consistent with the beneficial use policies and principles in Iowa Code section 455B.262. The department may require additional information relative to applications for the following types of permits.

50.6(1) *Groundwater withdrawal permit.*

a. Identification of source and effects of pumping. Applicants for a water use permit to withdraw groundwater shall submit information to identify the well location(s) and the aquifer(s) from which water withdrawals are proposed, predict the effects of pumping with a reasonable degree of confidence, and determine any permit conditions for well interference pursuant to 567—Chapter 54. In areas of uncertainty, to determine the availability of a water source of adequate quantity and quality and to predict the effects of pumping, the applicants shall perform test drilling, yield testing, and pump testing that includes measurements in one or more observation wells conducted with prior approval and in a manner acceptable to the department. Applicants shall perform each of these exploratory operations to the extent necessary for the department to determine whether a water use permit should be issued and to identify conditions which should be imposed in a permit. The following requirements apply to exploratory drilling, yield testing, and pump testing.

(1) Test drilling. Where test drilling is needed for geological information relevant to the application, an applicant shall employ a driller to collect, bag, and properly label cutting samples at each five-foot interval and at each apparent change in geological formation from a test hole or production well hole at least the approximate depth of the proposed production well. The cutting samples shall be saved for collection in sample bags provided by the Iowa Geological Survey (IGS). The samples shall be submitted to the IGS and be accompanied by a driller's log showing the well's location and total depth and a description of the materials encountered at successive intervals.

(2) Yield testing. An applicant shall construct a well and test pump it for yield to the extent necessary to determine whether water is available at the applicant's proposed rate of withdrawal from the proposed source. A written registration from the department is required before any yield test in which more than 25,000 gallons will be withdrawn in a period of 24 hours or less, as provided in 50.4(4).

(3) Pump testing. An applicant shall conduct a controlled aquifer pump test with supervision by a certified well contractor, licensed professional engineer, or other department designee as a condition of obtaining a water use permit, if the department finds an aquifer test necessary to determine the effects that

the proposed withdrawal has on other nearby water users. An applicant may be required to construct, develop, and maintain adequate observation wells for use in an aquifer pump test, subsequent water level measurements, or water quality monitoring. An applicant shall obtain a registration for an aquifer pump test as provided in 50.4(4).

b. Cooperation in obtaining well information. An applicant requesting a permit authorizing groundwater withdrawals from a well or reservoir may be required to assist the department in conducting an inventory of nearby wells within a designated radius of the proposed site. The need for an inventory and the appropriate radius will be determined after considering the characteristics of the aquifer that is proposed as a source of water and the proposed withdrawals. The department shall provide the applicant a map specifying the proposed inventory area, forms specifying the information to be gathered in the inventory, and a description of regulated uses within the inventory area. The applicant shall make a good-faith effort to assist the department in obtaining information from public records to identify landowners and occupants and from drilling contractors or pump installers identified by a landowner or occupant responding to the inventory.

50.6(2) Irrigation permit. An applicant proposing to irrigate crops on land shall submit a conservation plan or describe the conservation system that does not exceed the NRCS compliance-based soil loss limits for the land where crop irrigation is proposed, if the land includes soils more erodible than Capability Subclass IIe as defined by the NRCS. The application shall include a written explanation of how operation of the proposed irrigation system will be compatible with the plan or system.

50.6(3) Quarry permit. Iowa Code section 455B.268 requires that a water use permit be obtained before diverting water or material from the surface directly into any underground watercourse or basin.

50.6(4) Diversion of water into an aquifer not related to the use of an agricultural drainage well. An applicant for a water use permit to divert water or any other material from the surface into an aquifer not related to the use of an agricultural drainage well shall submit information showing that the requested diversion will not alter the quality of the aquifer.

50.6(5) Water withdrawal from a protected water source. An applicant for a water use permit to withdraw water from a protected water source designated in 567—Chapter 53 may be required to provide specific information to support the application as required by rule 567—53.3(455B).

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.7(17A,455B) Review of complete water use permit applications.

50.7(1) Summary report. Before a decision is made on a water use permit application, the department shall prepare a summary report stating whether the withdrawal, diversion, or use of water described in the application conforms to relevant criteria. The report shall identify the information used to determine the potential for a proposed use of water to adversely affect other water users. For an application to withdraw groundwater, the report shall describe the anticipated effects on water levels resulting from the proposed use, indicate if verified well interference has been found, and provide options for resolving any verified well interference in accordance with 567—Chapter 54.

50.7(2) Public notice (PN).

a. New water use permits and permit modifications. Prior to issuing a permit to withdraw, divert, or inject water, the department shall publish a PN of recommendation to issue a water use permit. A PN shall summarize the application and the recommendations in the summary report and allow the public 20 days to request a copy of the summary report and submit comments on the report. The department may extend the comment period upon request for good cause. PNs may be published in a newspaper circulated in the locality of the proposed water source, or the department may use other publication methods to ensure adequate notice to the affected public. A PN shall be sent to any person who has requested a copy of the notice concerning the particular water use under consideration.

b. Water use permit renewals. The PN provisions of 50.7(2)“a” shall not apply to water use permit renewals.

50.7(3) Notice to the applicant of criteria violation. If the application review determines that the proposed withdrawal, diversion, or use of water violates one or more criteria and the application should therefore be disapproved, or approved only subject to special conditions to which the applicant has not agreed, the department shall notify the applicant and, when practical, suggest appropriate project

modifications. The department shall offer the applicant an opportunity to submit comments before a decision is made.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.8(17A,455B) Decision by the department.

50.8(1) *Form of decision.* The decision by the department shall be either approval or denial of the water use permit application. Each water use permit shall include appropriate standard and special conditions consistent with Iowa Code sections 455B.261 through 455B.274 and 455B.281 and 567—Chapters 50, 53 and 54. The decision shall incorporate by reference or attachment the summary report described in 50.7(1). Each decision shall include the following:

- a. Determinations as to whether the project satisfies all relevant criteria not addressed in the attached summary report;
- b. An explanation of the purpose for imposing each special condition; and
- c. An explanation of consideration given to all comments submitted pursuant to 50.7(2) unless the comments are adequately addressed in the attached summary report.

50.8(2) *Notice of decision.* Copies of the decision shall be mailed to the applicant, any person who commented pursuant to 50.7(2), and any other person who has requested a copy of the decision. The decision shall be sent by certified mail. A decision becomes the final decision of the department unless a timely notice of appeal is filed in accordance with 50.8(3).

50.8(3) *Appeal of decision.* Any person aggrieved by a decision issued under this rule may file a notice of appeal with the director. The notice of appeal must be filed within 30 days following the certified mailing date of the decision unless the appellant shows good cause for failure to receive actual notice and file within the allowed time. The form of the notice of appeal and appeal procedures are governed by 567—Chapter 7. The department shall mail a copy of the notice of appeal to each person who commented on the application. If the appeal is from denial of a permit and a notice of recommendation to grant a permit was not published, the department shall publish the notice of commencement of a contested case and provide an opportunity for interested people to seek intervention in the contested case.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 17A.3, 455B.105, 455B.171, 455B.262, 455B.264 through 455B.274, 455B.278, and 455B.281.

567—50.9(455B) Conditions on permitted water uses. This rule includes permit restrictions that apply to various types of permitted water uses. A permitted use may be subject to additional restrictions related to its potential effects on surface or groundwater. Procedures for determining conditions imposed due to well interference are found in 567—Chapter 54.

50.9(1) *Irrigation water use permits.*

a. *Authorized irrigation season.* Permits shall authorize irrigation of any general crop from April 1 to September 30 and any specialty crop from April 1 to October 31 unless the department finds that a different period is justified.

b. *Authorized annual amount.* Permits shall authorize withdrawals equivalent to one acre-foot per acre for a general crop and two acre-feet per acre for a specialty crop unless the department finds that a different amount is justified. Notwithstanding the general criteria in this paragraph, permits for irrigation of general crops from the alluvial aquifers of the Missouri and Mississippi Rivers shall authorize withdrawals of up to 1.5 acre-feet per acre if requested by the applicant unless the department finds that a different amount is justified.

c. *Conservation plan for erosion control.* Where 50.6(2) requires the submission of a soil conservation plan, an irrigation water use permit shall make authorization of irrigation contingent upon compliance with the soil conservation plan.

d. *Irrigation scheduling.* The department may require that irrigation of a general crop be scheduled according to a department-recommended method to minimize the potential for waste of water or by an equivalent method selected by the permittee and approved by the department.

e. *Irrigation system check valve.* Each irrigation water use permit shall require the installation of an adequate check valve and frequent inspections of proper valve function to prevent contaminants from back-

siphoning into the water source before a fertilizer, pesticide, herbicide, or other additive is introduced into the irrigation system.

50.9(2) The amount of water authorized for industrial use or power generation use shall be consistent with industry-wide usage for the same or similar purposes and types of facilities and shall provide for growth where need is demonstrated by the applicant.

50.9(3) The amount of water authorized for use by a CWS shall not exceed 200 gallons per day per capita, except that additional water may be authorized for growth and industrial use where need is demonstrated by the applicant.

50.9(4) *Recreational and aesthetic water use permits.*

a. Authorized amount. The amount of water authorized for recreational and aesthetic uses shall be determined on a case-by-case basis.

b. Watering system backflow-prevention valve. Water use permits authorizing the use of water for turf or landscape plantings shall require the installation of an adequate check valve and annual inspections of proper valve function to prevent contaminants from back-siphoning into the water source before a fertilizer, pesticide, herbicide, or other additive is introduced into the irrigation system.

This rule is intended to implement Iowa Code section 455B.265.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.10(455B) Conditions on withdrawals from streams. Water withdrawals from streams shall be subject to the following conditions:

50.10(1) *Protected flow restriction.* Except as provided in 50.10(2), withdrawals for consumptive uses, with the exception of CWSs, shall cease when the streamflow is below the protected flow designated in 50.15(3). When the flow of a stream, or portion thereof designated by the department, is below a flow equal to the protected flow plus the summation of all permitted consumptive withdrawals by permittees whose permits provide for maintenance of a protected flow in such stream or portion thereof, the department may, subject to the provisions of 50.10(2), order temporary cessation or rotation of all consumptive withdrawals, with the exception of CWSs, to ensure that the protected flow is preserved.

50.10(2) *Replacement water exemption.* Subrule 50.10(1) shall not apply to withdrawals for consumptive uses from a stream if the permittee discharges replacement water into such stream or tributary thereto at rates sufficient to offset the consumptive withdrawals and the department approves the method and location of discharge.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.11(455B) Conditions on water withdrawals from groundwater sources.

50.11(1) *Withdrawals from unconfined aquifers adjacent to streams.* Water withdrawals from unconfined aquifers adjacent to streams shall be subject to the following conditions:

a. Protected flow restriction. Withdrawals for consumptive uses, with the exception of CWSs, at any point within 1/8 mile (660 feet) of an interior stream shall be considered withdrawals from the stream and shall cease when the stream is below the protected flow designated in rule 567—50.15(455B) except as provided in 50.11(1)“c” to “f.”

b. Seven-day, one-in-ten-year low flow (7Q10) restriction. Withdrawals for consumptive uses, with the exception of CWSs, at any point located between 1/8 mile (660 feet) and ¼ mile (1,320 feet) of a stream, other than a stream bordering the state, shall cease when the streamflow is at or below the 7Q10 as determined at the nearest downstream USGS gage, except as provided in 50.11(1)“c” to “f.”

c. Missouri/Mississippi River-interior stream confluence restriction. Withdrawals for consumptive uses, with the exception of CWSs, from the alluvial aquifers below the floodplains of streams bordering the state at any point within 1/8 mile (660 feet) of any interior stream shall cease when the flow of such interior stream is at or below the 7Q10, except as provided in 50.11(1)“d.”

d. Other conditions. Notwithstanding 50.11(1)“a” to “c,” other conditions may be imposed as necessary to ensure adequate protection of water supplies for ordinary household, livestock, and domestic uses; fish and wildlife use; recreational use; preservation and enhancement of aesthetic values; or other uses of a public nature.

e. Replacement water exemption. 50.11(1)“a” through “c” shall not apply to withdrawals for consumptive uses from an unconfined aquifer, if the permittee discharges replacement water into such stream or tributary thereto at rates sufficient to offset the consumptive withdrawals and the department approves the method and location of discharge.

f. Exemptions from low-flow restrictions. The restrictions of 50.11(1)“a” through “d” may be waived if the applicant or permittee can conclusively demonstrate, by conducting pump testing, that the withdrawal will not reduce the flow of the adjacent stream. The pump testing plan must be approved by the department prior to the testing.

50.11(2) Withdrawals from the Cambrian-Ordovician (Jordan) aquifer. Water withdrawals from the Cambrian-Ordovician (Jordan) aquifer, including the St. Peter sandstone formation, the Prairie du Chien group, and the Jordan sandstone formation, shall be subject to the following conditions:

a. Two-hundred-gallon-per-minute (gpm) restriction. New withdrawals of water for irrigation, recreational, or aesthetic uses shall not exceed 200 gpm. Existing permits for irrigation, recreational, and aesthetic uses that authorize withdrawal rates in excess of 200 gpm may be modified or rescinded if the department determines that any well in the vicinity experiences loss of water due to pumping or if the pumping water level is reduced to or below the levels described in 50.11(2)“f”(1) and 50.11(2)“g”(1).

b. Two-thousand-gallon-per-minute (gpm) restriction. New water withdrawals for industrial or power generation uses at a single plant location shall not exceed 2,000 gpm. Existing permits for industrial or power generation use that authorize withdrawal rates in excess of 2,000 gpm may be modified or rescinded if the department determines that any well in the vicinity experiences a loss of water due to pumping or if the pumping water level is reduced to or below the levels described in 50.11(2)“f”(1) and 50.11(2)“g”(1).

c. Limited cooling and geothermal use. No once-through (single pass with disposal to storm sewer or equivalent) cooling water or geothermal usage is allowed. Withdrawals for geothermal purposes are prohibited unless 100 percent of the withdrawn water is reinjected into the aquifer in accordance with department requirements.

d. Jordan aquifer high-capacity permits and wells. Water use permits for the Jordan aquifer shall be issued on a five-year permit cycle. A water use permit for wells expected to pump over 25,000 gallons per day from the Jordan aquifer shall be obtained from the department before any water well construction permit is issued. After a water use permit has been obtained, a county may issue a Jordan aquifer water well construction permit for any nonpublic water supply system unless that well is located in one of the protected-source areas listed in 567—subrules 53.5(2) and 53.5(3). The department may issue a Jordan aquifer water well construction permit for a public water supply system or a well located in the protected source areas listed in 567—subrules 53.5(2) and 53.5(3). All driller’s logs for water use wells completed in the Jordan aquifer shall be submitted to the department and the Iowa Geological Survey.

e. Tier 1 Jordan wells. A Jordan water use well is classified as Tier 1 when pumping water levels have not reached the Tier 2 or Tier 3 levels described in 50.11(2)“f”(1) and 50.11(2)“g”(1). Permittees with Tier 1 Jordan wells shall follow standard water use reporting procedures for the Jordan aquifer pursuant to 567—50.13(455B).

f. Tier 2 Jordan wells.

(1) A Jordan well is classified as Tier 2 when the pumping water level measured at the well declines over 300 feet below the 1978 Horick and Steinhilber potentiometric surface, or the pumping water level declines over 50 percent from the 1978 Horick and Steinhilber potentiometric surface and the top of the Jordan aquifer, whichever is more conservative.

(2) Permittees with Jordan wells that have reached the Tier 2 level shall develop a site-specific water use reduction plan and submit it to the department for review and approval. The water use reduction plan shall set a defined usage percent reduction target that will minimize Jordan aquifer withdrawals and prevent the decline of the water level from reaching the Tier 3 category pursuant to 50.11(2)“g”(1). If the water use reduction plan is not implemented, the department may reduce the permitted water use allocation, pursue permit enforcement, or rescind the permit.

g. Tier 3 Jordan wells.

(1) A Jordan well is classified as Tier 3 when the pumping water level measured at the well declines over 400 feet below the 1978 Horick and Steinhilber potentiometric surface, or the pumping water level

declines over 75 percent from the 1978 Horick and Steinhilber potentiometric surface and the top of the Jordan aquifer, whichever is more conservative.

(2) Permittees with Jordan wells that have reached the Tier 3 level shall develop an aggressive water use reduction plan using an approved predictive model that will lead to recovery of the pumping water level to elevations above Tier 3 levels. The department shall review and approve the plan and model predictions. If water levels continue to decline beyond the Tier 3 level, the department may reduce the permitted water use allocation; pursue permit enforcement, including aspects of the water use reduction plan; or rescind the permit.

h. Waivers. Waivers from these rules will be considered by the department through the procedures found in 561—Chapter 10.

i. Plan resources. Resources for developing water use reduction plans are listed in 50.16(3) “d.”
[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.12(455B) Duration of water use permits for withdrawal or diversion of water.

50.12(1) General. A water use permit shall remain as an appurtenance of the land described in the permit through the date specified in the permit and any permit extension unless the permit or its extension is terminated under rule 567—50.14(455B). A water use permit may be renewed if an application is submitted prior to the termination date specified in the permit.

50.12(2) Withdrawal or diversion of surface water. Water use permits for withdrawal or diversion of surface water shall be issued for ten years.

50.12(3) Withdrawal of groundwater. Water use permits for groundwater withdrawal shall be issued for a maximum period of ten years and may be granted for less than ten years if geological data on the capacity of the aquifer and its rate of recharge are indeterminate.

This rule is intended to implement Iowa Code section 455B.265.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.13(455B) Monitoring, recording, and reporting of water use and effects on water sources.

50.13(1) Water use reports. Each permittee shall submit to the department, at least annually, or as prescribed by the department, reports of water used, diverted, or stored and any other information deemed necessary by the department.

50.13(2) Access ports. All new water use permits authorizing withdrawals from wells shall require that each authorized production well be equipped with an access port with a minimum diameter of ¾ inch. Access ports must be located to allow insertion of a steel tape or electric probe into the well casing for measurement of water levels.

50.13(3) Pump tests and observation wells. A permittee may be required to conduct a pump test as a condition of keeping a water use permit if the department finds a pump test is necessary to determine the effects that the authorized withdrawals have on other water users. A pump test, authorized by the department and supervised by a certified well contractor, licensed professional engineer, or other department designee, may be required for an administrative resolution of a well interference conflict pursuant to 567—Chapter 54. A permittee may be required to construct, develop, and maintain adequate observation wells for use in a pump test and for subsequent water level measurements or water quality monitoring.

This rule is intended to implement Iowa Code sections 455B.261, 455B.264, 455B.266, 455B.268(1) and 455B.281.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.14(455B) Modification, termination, and emergency suspension of water use permits.

50.14(1) General. Except as provided in 50.14(2), after at least 30 days’ written notice mailed to the permittee’s last-known address by certified mail, and an opportunity for the permittee to be heard in an evidentiary hearing conducted in accordance with Iowa Code chapter 17A, the department may modify or terminate a water use permit or any permit condition, notwithstanding any other rule, for any of the following reasons:

a. Violation of permit condition or law. Violation of a permit condition or the law pertaining to the water use permit by the permittee or permittee's agent, tenant, or consultant.

b. Nonuse. The permittee has failed for three consecutive years to use the water, and the permittee has not demonstrated adequate plans to use the water within a reasonable time. Nonuse due to adequate rainfall shall not be a justification for permit termination. However, authorization to withdraw water from a proposed well may be terminated after notice to the permittee if the permittee has failed to construct the proposed well within three years after permit issuance.

c. Public health and safety. Modification or termination is necessary to protect the public health and safety, to protect the public interests in lands and waters, or to prevent any manner of substantial injury to persons or property.

d. Addition of conservation provisions. Modification to include conservation provisions is deemed necessary by the department.

e. Allocated amount. For three consecutive years, annual water use has exceeded the amount of water allocated in the water use permit.

50.14(2) Emergency suspension or restriction. Notwithstanding any other rule or permit conditions, if the department finds that it is imperatively necessary in an emergency to protect from imminent danger or substantial injury the public health, welfare, or safety, or the public or private interest in lands or water, or to implement the priority allocation system pursuant to rule 567—50.17(455B), and these findings are incorporated into a written emergency order to the permittee, the department may immediately suspend or restrict operations under a water use permit and require the permittee to take measures necessary to prevent or remedy the injury. The emergency order shall state an effective date appropriate to the situation that invoked the suspension or restriction and shall be immediately effective on that date unless stayed, modified, or vacated at a hearing before the commission or by the court. The emergency order shall remain in effect until a date specified in the order unless the order is revoked or the expiration date is modified due to a change in the situation giving rise to the order or a decision following appeal.

This rule is intended to implement Iowa Code sections 455B.271, 455B.272 and 17A.3.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.15(455B) Designated protected flows of streams.

50.15(1) Purpose. A protected flow is designed to protect and maintain adequate water supplies for: ordinary household, livestock, and domestic uses; fish and wildlife use; recreational use; in-stream wasteload assimilation and pollution control; beneficial water use needs in the watershed; preservation or enhancement of aesthetic values; and other uses of a public nature.

50.15(2) Protected flow basis. Protected flows are based in part on statistical information in “Low-Flow Characteristics of Iowa Streams” (INRC Bulletin No. 9 (1958)), “Low-Flow Characteristics of Iowa Streams through 1966” (INRC Bulletin No. 10 (1970)), “Annual and Seasonal Low-Flow Characteristics of Iowa Streams” (INRC Bulletin No. 13 (1976)), and “Statistical Summaries of Selected Iowa Streamflow Data Through September 1996, USGS Open-File Report 98-176 (1998).”

50.15(3) Protected flow levels.

a. At stream gaging stations. Protected flows, expressed in cubic feet per second (cfs) at points on a stream with an official USGS streamflow gage, are listed in the table below.

Protected Flow at USGS Stream Gaging Locations

River or Stream	Gage Location	USGS Gage Number	Protected Low Flow (CFS)
Beaver Creek	New Hartford	5463000	18
Big Creek	Mount Pleasant	5473450	2
Black Hawk Creek	Hudson	5463500	4.5
Boone River	Webster City	5481000	24
Boyer River	Logan	6609500	41
Cedar River	Conesville	5465000	1240
Cedar River	Cedar Rapids	5464500	937
Cedar River	Waterloo	5464000	710
Cedar River	Janesville	5458500	185

River or Stream	Gage Location	USGS Gage Number	Protected Low Flow (CFS)
Cedar River	Charles City	5457700	100
Chariton River	Rathbun	6903900	2.9
Des Moines River	Keosauqua	5490500	350
Des Moines River	Ottumwa	5489500	300
Des Moines River	Tracy	5488500	300
Des Moines River	Des Moines (14th St.)	5485500	300
Des Moines River	Saylorville	5481650	200
Des Moines River	Stratford	5481300	310
Des Moines River	Fort Dodge	5480500	220
East Fork Des Moines River	Dakota City	5479000	42
East Nishnabotna River	Red Oak	6809500	37
East Nishnabotna River	Atlantic	6809210	18
Floyd River	James	6600500	22
Iowa River	Wapello	5465500	1390
Iowa River	Lone Tree	5455700	150
Iowa River	Iowa City	5454500	150
Iowa River	Marengo	5453100	204
Iowa River	Marshalltown	5451500	104
Iowa River	Rowan	5449500	21
Little Cedar River	Ionia	5458000	28
Little Sioux River	Turin	6607500	200
Little Sioux River	Correctionville	6606600	106
Little Sioux River	Linn Grove	6605850	42
Maple River	Mapleton	6607200	50
Maquoketa River	Maquoketa	5418500	372
Middle Raccoon River	Panora	5483600	20
Middle River	Indianola	5486490	14.6
Monona-Harrison Ditch	Turin	6602400	27
Nishnabotna	Hamburg	6810000	128
Nodaway	Clarinda	6817000	15
North Raccoon River	Jefferson	5482500	82
North Raccoon River	Sac City	5482300	14
North River	Norwalk	5486000	5.6
North Skunk River	Sigourney	5472500	35
Raccoon River	Van Meter	5484500	190
Rock River	Rock Valley	6483500	26
Shell Rock River	Shell Rock	5462000	147
Skunk River	Augusta	5474000	287
Soldier River	Pisgah	6608500	20
South Raccoon River	Redfield	5484000	58
South River	Ackworth	5487470	4.1
South Skunk River	Oskaloosa	5471500	94
South Skunk River	Ames (below Squaw Creek)	5471000	23
South Skunk River	Ames	5470000	4.8
Thompson River	Davis City	6898000	13
Turkey River	Garber	5412500	210
Upper Iowa River	Decorah	5387500	80
Walnut Creek	Hartwick	5452200	2
Wapsipinicon River	DeWitt	5422000	150
Wapsipinicon River	Independence	5421000	17

River or Stream	Gage Location	USGS Gage Number	Protected Low Flow (CFS)
West Fork Cedar River	Finchford	5458900	66
West Fork Ditch	Hornick	6602020	12
West Nishnabotna River	Randolph	6808500	67
West Nishnabotna River	Hancock	6807410	49
White Breast Creek	Dallas	5487980	3.2
Winnebago River	Mason City	5459500	39

b. At stream locations other than gaging stations. The protected flow for points on a stream, other than at a USGS gaging station, shall be established, as the need arises, by comparison of available streamflow data and basin characteristics.

This rule is intended to implement Iowa Code sections 455B.261, 455B.262 and 455B.267.
[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.16(455B) Water conservation.

50.16(1) General. The purpose of these water conservation requirements is to preserve the availability of water that is withdrawn for use, as opposed to protected flow provisions that preserve in-stream flows.

a. Each water use permit, including any permit granted to a CWS, will include conditions requiring routine (day-to-day) conservation practices and emergency conservation practices after department notification. Existing permits may be modified to include conservation conditions pursuant to 50.14(3) if deemed necessary by the department.

b. Only general provisions for routine conservation will be included in a water use permit unless water is to be withdrawn from a protected water source designated in 567—Chapter 53 that has specific requirements for routine conservation. Such permit conditions are primarily intended to raise awareness of water usage, develop a preparedness for periods of water shortages, and minimize waste of water.

c. General conditions involving emergency conservation will be included in all water use permits. Specific emergency conservation conditions may be included in a permit pursuant to 50.16(2). If specific emergency conservation permit conditions are required, they will be based on a department-approved water conservation plan developed by the permittee or applicant in accordance with 50.16(3).

d. The purpose of emergency conservation is to minimize consumptive use of water from a source experiencing a temporary shortage. Emergency conservation restrictions will be imposed only when water shortages are imminent or actually exist, in accordance with rule 567—50.17(455B). Long-term water shortages are addressed in the protected source rules, 567—Chapter 53.

50.16(2) Applicability of emergency conservation. Specific emergency conservation requirements may be made a condition of a water use permit if the proposed or permitted withdrawal could result in a significant consumptive use of water from a source that is likely to experience a short-term shortage. Specific emergency conservation requirements will not normally be included in a water use permit under any of the following conditions:

a. The proposed or existing permitted water use involves a consumptive use of less than 25,000 gallons per day from any water source during periods of substantial water shortage.

b. The proposed or permitted use is subject to protected streamflow conditions pursuant to rule 567—50.15(455B).

c. The water source for the proposed or permitted use is a surface water impoundment or purchased storage owned by the applicant or permittee.

d. The proposed or permitted use is unable to conserve water without substantially disrupting or ceasing an essential activity that requires water.

e. The proposed or permitted withdrawal is from a source of water that is not likely to experience a substantial short-term water shortage, including but not limited to the Missouri and Mississippi Rivers and adjacent alluvial aquifers and the Iowa Great Lakes (West Okoboji, East Okoboji, Big Spirit, Little Spirit, Upper Gar, Lower Gar, and Lost Island lakes).

f. The source of water is or will be utilized by only the permitted or proposed water user and withdrawal from the source for the permitted or proposed use has no potential for affecting other water uses.

50.16(3) *Water conservation plans.* The department may require a water conservation plan to be submitted by any existing permittee after a minimum of 90 days' notice. If a water conservation plan is required with a renewal application, the department will notify the permittee at least 120 days prior to expiration of the water use permit. Water conservation plans shall describe the measures to be used to achieve water conservation and estimate the water savings from each measure.

a. General provisions. The following information shall be included in all water conservation plans:

(1) A description of each source of water withdrawal, including the location, well depth, pumping rate, and date of installation.

(2) A description of the wastewater discharge, including the location and discharge frequency.

(3) Monthly withdrawal amounts from each source for the past five years.

(4) Monthly total water withdrawal amount for the past five years.

(5) Monthly total wastewater discharge amount for the past five years.

(6) A quarterly breakdown, by the water use categories in 50.17(3), of total water use and estimated consumptive water use over the past five years.

(7) A description of any previous water shortage problems, including the cause, frequency, other affected parties, and how they were resolved.

(8) Identification of nearby water supplies that are potentially affected by or could potentially affect the proposed or permitted withdrawal.

(9) A means of identifying impending water shortage problems.

b. Routine conservation provisions. Consideration of routine conservation is encouraged in a water conservation plan. Documented water savings from routine conservation measures will be credited toward emergency conservation requirements. Suggested routine conservation measures include:

(1) Use of water-saving plumbing devices or required use of these devices in building codes.

(2) Scheduling irrigation to minimize peak water use.

(3) Use of efficient irrigation techniques.

(4) Implementing programs to minimize lost water, such as distribution system leaks.

(5) Use of metered water billing by public water supplies.

(6) Utilizing best commercially available technology to optimize efficiency of water use.

(7) Implementing recycling and reuse practices.

(8) Developing alternative water sources that are not susceptible or are less susceptible to shortages.

(9) Increasing rates charged for water or eliminating reduced rates for large users.

c. Emergency conservation provisions. Water conservation plans shall contain emergency conservation provisions in accordance with the following criteria.

(1) General.

1. The consumptive nature of a water use, as described in 50.16(2) and in accordance with this subrule, shall be reduced by at least 50 percent over similar periods of normal use. This criterion does not apply to irrigation use. If this requirement cannot be met, justification for nonattainment shall be provided. Justification shall include documentation that an activity involving water use is essential and that the best commercially available technology is being used. The department may then grant waivers on a case-by-case basis.

2. Measures that will be credited for emergency conservation include but are not limited to the following:

- Documented water savings resulting from routine water conservation measures;

- Shutdown, postponement, or curtailment of nonessential water use activities;

- Switching to nonaffected sources for water supply;

- Mitigation of consumptive uses by directly discharging stored water or water from a nonaffected source to the affected water source;

- Acquisition and retirement of existing consumptive uses from the affected water source (credit for retirement of existing consumptive uses will be given only for the amount authorized during periods when emergency conservation is required); and

- Imposing surcharges on water use during periods of shortage.

(2) Public water supplies (PWSs). At a minimum, emergency water conservation plans for PWSs must include provisions for restricting outside, consumptive water use.

(3) Irrigation water use.

1. Emergency water conservation plans for irrigation water uses shall limit irrigation water use to the equivalent of one inch per irrigated acre per week for general crops and specialty crops unless the plan contains other mitigating provisions, such as those listed above in 50.16(3)“c”(1).

2. Water conservation plans shall address irrigation scheduling. Irrigation scheduling should attempt to provide approximately equal water use on each day of an irrigation cycle. Scheduling may be done in cooperation with other nearby irrigators who utilize the same water source.

d. Resources for water conservation and water use reduction planning.

(1) The following resources are suggested by and available from the department as guidance for the development of water conservation plans and water use reduction plans:

1. “Water Wise—Efficiency Planning and Water Conservation Plan Workbook for Water and Wastewater Utilities,” Iowa Association of Municipal Utilities, 2013 (available online through the department’s website).

2. “Water Conservation Programs—A Planning Manual,” Manual of Water Supply Practices M52, American Water Works Association, 2006.

3. “Handbook of Water Use and Conservation,” Amy Vickers, Waterplow Press, Amherst, Massachusetts, 2001.

(2) Water conservation plans and water use reduction plans shall comply with the standards of the American Water Works Association or a reasonable equivalent as determined by the department.

This rule is intended to implement Iowa Code sections 455B.262 and 455B.265.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.17(455B) Priority allocation restrictions.

50.17(1) General. After any triggering event described in 50.17(2) occurs, the department will investigate and may restrict water use according to the priority allocation plan described in 50.17(3). Prior to imposing the priority allocation plan, the department will normally require emergency conservation measures to be taken by existing permittees. The department will not normally require emergency conservation until a shortage of water is imminent and will not normally impose the priority allocation plan until an actual impairment of water usage exists.

a. The department will notify existing permittees of any emergency restriction or suspension of water use by written order pursuant to 50.14(2). A permittee will be required to maintain daily water withdrawal and wastewater discharge records, if any, while the emergency order is in effect. These records shall be available for department inspection to verify compliance with the order.

b. Suspension or restriction of water usage applicable to otherwise nonregulated water users shall be by emergency order of the director that the department shall cause to be published in local newspapers of general circulation and broadcast by local media. The emergency order shall state an effective date of the suspension or restriction and shall be immediately effective on that date unless stayed, modified, or vacated at a hearing before the commission or by a court.

c. The department will lift the suspension or restriction of water usage, as deemed appropriate, when evidence of sustained, improved conditions is available.

d. The department will not impose a suspension of water or a further restriction, other than emergency conservation, on the uses of water provided in 50.17(3)“b”(6) through (8), or on uses of water pursuant to a contract with the state as provided in Iowa Code sections 455B.263(5) and 455B.263(6), unless the governor has issued a proclamation as described in 50.17(2)“b.” Notwithstanding such proclamation, in the case of water use under a contract with the state pursuant to Iowa Code sections 455B.263(5) and 455B.263(6) and in effect prior to March 5, 1985, restriction or suspension measures will be limited to emergency conservation.

50.17(2) Triggering events. The department may implement the priority allocation plan following the occurrence of any of the following:

a. Receipt of a petition by a governmental subdivision or 25 persons to implement the priority allocation plan due to a substantial local water shortage adversely affecting their water supply.

b. Issuance by the governor of a proclamation of a disaster emergency due to a drought or other event affecting water resources of the state.

c. Determination by the department in conjunction with the homeland security and emergency management division of the Iowa Department of Public Defense of a local crisis that affects availability of water.

d. Receipt of information from a state or federal natural resource, research, or climatological agency indicating that a drought of local or state magnitude is imminent. As a general guideline, emergency conservation or priority allocation restrictions will not be imposed on withdrawals from a surface stream or adjacent alluvial aquifer when streamflow is above the 7Q10 level.

50.17(3) *Priority allocation plan.* Notwithstanding a person's possession of a permit or a person's use of water being a nonregulated use, the department may suspend or restrict water use by use category on a local or statewide basis in the following order:

- a. Water conveyed across state boundaries.
- b. Water used for:
 - (1) Recreational or aesthetic purposes.
 - (2) Irrigation of general crops.
 - (3) Irrigation of specialty crops.
 - (4) Manufacturing or other industrial processes.
 - (5) Generation of electrical power.
 - (6) Livestock production.
 - (7) Human consumption and sanitation supplied by rural water districts, municipal water systems, or other public water supplies.
 - (8) Human consumption and sanitation supplied by a private water supply.

This rule is intended to implement Iowa Code section 455B.266.

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

567—50.18(455B) Well plugging. When a water use well is no longer used, or is in a state of disrepair or neglect, the permittee shall be responsible for plugging the well in accordance with Iowa Code section 455B.190, 567—Chapter 39, or by an alternate method approved by the department for prevention of groundwater pollution. The well plugging form must be completed and submitted as specified on the form. However, the department shall grant a waiver from the well plugging requirement if a permittee demonstrates an intent to maintain the well as a source of water for a nonregulated use or if the department determines that the well should be maintained as an observation well.

This rule is intended to implement Iowa Code sections 455B.262 through 455B.279(2).

[ARC 9199C, IAB 5/14/25, effective 6/18/25]

[Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]

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[Filed 11/1/85, Notice 7/31/85—published 11/20/85, effective 12/15/85]

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[Filed without Notice 4/23/93—published 5/12/93, effective 7/1/93]

[Filed 12/19/97, Notice 9/10/97—published 1/14/98, effective 2/18/98]¹

[Filed emergency 7/24/98—published 8/12/98, effective 7/24/98]

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[Filed ARC 7694B (Notice ARC 7307B, IAB 11/5/08), IAB 4/8/09, effective 5/13/09]

[Filed ARC 2053C (Notice ARC 1914C, IAB 3/18/15), IAB 7/8/15, effective 8/12/15]

[Filed ARC 4426C (Notice ARC 4277C, IAB 2/13/19), IAB 5/8/19, effective 6/12/19]

[Filed ARC 5052C (Notice ARC 4919C, IAB 2/12/20), IAB 6/17/20, effective 7/22/20]

[Filed ARC 5899C (Notice ARC 5677C, IAB 6/16/21), IAB 9/8/21, effective 10/13/21]

[Filed ARC 9199C (Notice ARC 8618C, IAB 1/8/25), IAB 5/14/25, effective 6/18/25]

- ¹ At its meeting held 2/9/98, the Administrative Rules Review Committee delayed 50.2, eight definitions, 50.3(1), 50.4, 50.6(4), 50.6(7), 50.7(2), 50.7(4) and 50.8(2) until adjournment of the 1998 Session of the General Assembly.

CHAPTER 51
WATER PERMIT OR REGISTRATION—WHEN REQUIRED

[Prior subject matter INRC rule 3.1]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded **ARC 9199C**, IAB 5/14/25, effective 6/18/25

CHAPTER 52
CRITERIA AND CONDITIONS FOR AUTHORIZING WITHDRAWAL,
DIVERSION AND STORAGE OF WATER

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded **ARC 9199C**, IAB 5/14/25, effective 6/18/25

CHAPTER 53
PROTECTED WATER SOURCES
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—53.1(455B) Designation of protected sources.

53.1(1) The department may designate a surface water or groundwater source within a defined geographical area as a protected source. Notwithstanding the requirements in this chapter, the department may impose permit conditions on a case-by-case basis to protect the water resources of the state.

53.1(2) The purpose of designating a water source as a protected source is to ensure long-term availability in terms of quantity and quality to preserve public health and welfare. Purposes include but are not limited to the following:

- a. To preserve the availability of the protected source for sustained beneficial use.
- b. To prevent or minimize the movement of groundwater contaminants.
- c. To maintain the surface water quality within a specific stream segment in order to meet state or federal standards, to preserve protected flows, or to maintain its availability for other beneficial use.
- d. To preserve the protected flows in a stream that is hydraulically connected to a protected groundwater source.

This rule is intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274 and 455B.278.

[ARC 9200C, IAB 5/14/25, effective 6/18/25]

567—53.2(455B) Designation procedure. The procedure for designation of a protected source shall be a rulemaking to amend the list of protected sources in rule 567—53.5(455B). In addition to the requirements of rule 561—5.1(17A), an interested person who petitions the department to designate a protected water source may also be required to provide supporting information, including but not limited to:

53.2(1) Facts and arguments demonstrating that existing rules and the opportunity for public participation in the application review and decision-making procedures of rule 567—50.7(17A,455B) and 567—subrule 50.8(3) are inadequate to ensure the long-term availability of the source and to preserve the public health and welfare.

53.2(2) Predictive geohydrological and chemical analyses of the groundwater source if the petition is to prevent or minimize the movement of known or suspected contaminants.

53.2(3) Facts and arguments demonstrating the effect that additional withdrawals from a stream or stream segment proposed for designation would have on downstream discharges, surrounding alluvial systems, and biological systems, and on potential changes in the frequency at which the protected stream discharge levels are reached.

This rule is intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274 and 455B.278.

[ARC 9200C, IAB 5/14/25, effective 6/18/25]

567—53.3(455B) Information requirements for applications to withdraw water from protected sources. An applicant proposing to withdraw water from a protected source, as listed in rule 567—53.5(455B), may be required to submit information necessary for the department to determine the effects resulting from such withdrawal.

53.3(1) *Withdrawals from protected groundwater sources.* Applicants for water use permits may be required to provide the information detailed in rule 567—50.7(17A,455B) and additional predictive geohydrological and chemical analyses of the groundwater source. Where there is potential for a known contaminant to migrate, predictive analyses may also be requested to show potential movement and effects of the withdrawal on the hydraulic head. Monitoring may be required in permits authorizing withdrawals from a protected groundwater source.

53.3(2) *Withdrawals from protected surface water sources.* Applicants for water use permits may be required to demonstrate the effect of proposed withdrawals on downstream discharges, surrounding alluvial

systems, and biological systems, and of potential changes in the frequency at which protected stream discharge levels are reached, for any stream or stream reaches listed in rule 567—53.5(455B).

This rule is intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274 and 455B.278.

[ARC 9200C, IAB 5/14/25, effective 6/18/25]

567—53.4(455B) Conditions in permits for withdrawals of water from a protected source. The designation of a protected water source in rule 567—53.5(455B) may include a list of special conditions for permits issued for withdrawals of water from the designated source. The designation may also include guidelines for the imposition of special limitations on withdrawals authorized by permits that were in force on the effective date of the protected source designation. However, such guidelines may be enforced only in accordance with the procedures in rule 567—50.14(455B) for modification, termination, and emergency suspension of permits, or after a permittee has had an opportunity to contest the imposition of proposed special limitations in permit renewal proceedings. When a group of permits is potentially affected by the guidelines in rule 567—53.5(455B), hearings under rule 567—50.14(455B) may be consolidated.

53.4(1) *Withdrawals from streams or associated alluvium that are protected sources.* The department may apply special conditions on all water use permits for withdrawals from streams and associated alluvial systems that are protected water sources listed in rule 567—53.5(455B). Such conditions may include a cessation of withdrawals at a stream discharge rate as determined by the department when withdrawals may be in excess of the level required by 567—subrule 50.15(3). These conditions may apply to both consumptive and nonconsumptive withdrawals.

53.4(2) *Withdrawals from groundwater sources that are protected sources.* The department may apply special conditions on all water use permits for withdrawals from groundwater systems that are protected water sources listed in rule 567—53.5(455B). Such conditions may include immediate cessation of withdrawals if declines in hydraulic head or movement of known contaminants in the source are detected. These conditions may apply to both consumptive and nonconsumptive withdrawals.

This rule is intended to implement Iowa Code chapter 455B.

[ARC 9200C, IAB 5/14/25, effective 6/18/25]

567—53.5(455B) List of protected water sources. The following list identifies water sources designated as protected sources under this chapter. Each listing includes the name of the designated surface water or groundwater source, the geographical areas affected, the specific purposes for designating the source, and special limitations imposed or recommended to achieve the purpose of the protected source designation. The listing may also include special monitoring requirements or specify a date by which the department must review a protected source designation.

53.5(1) *Ralston Site, Linn County.*

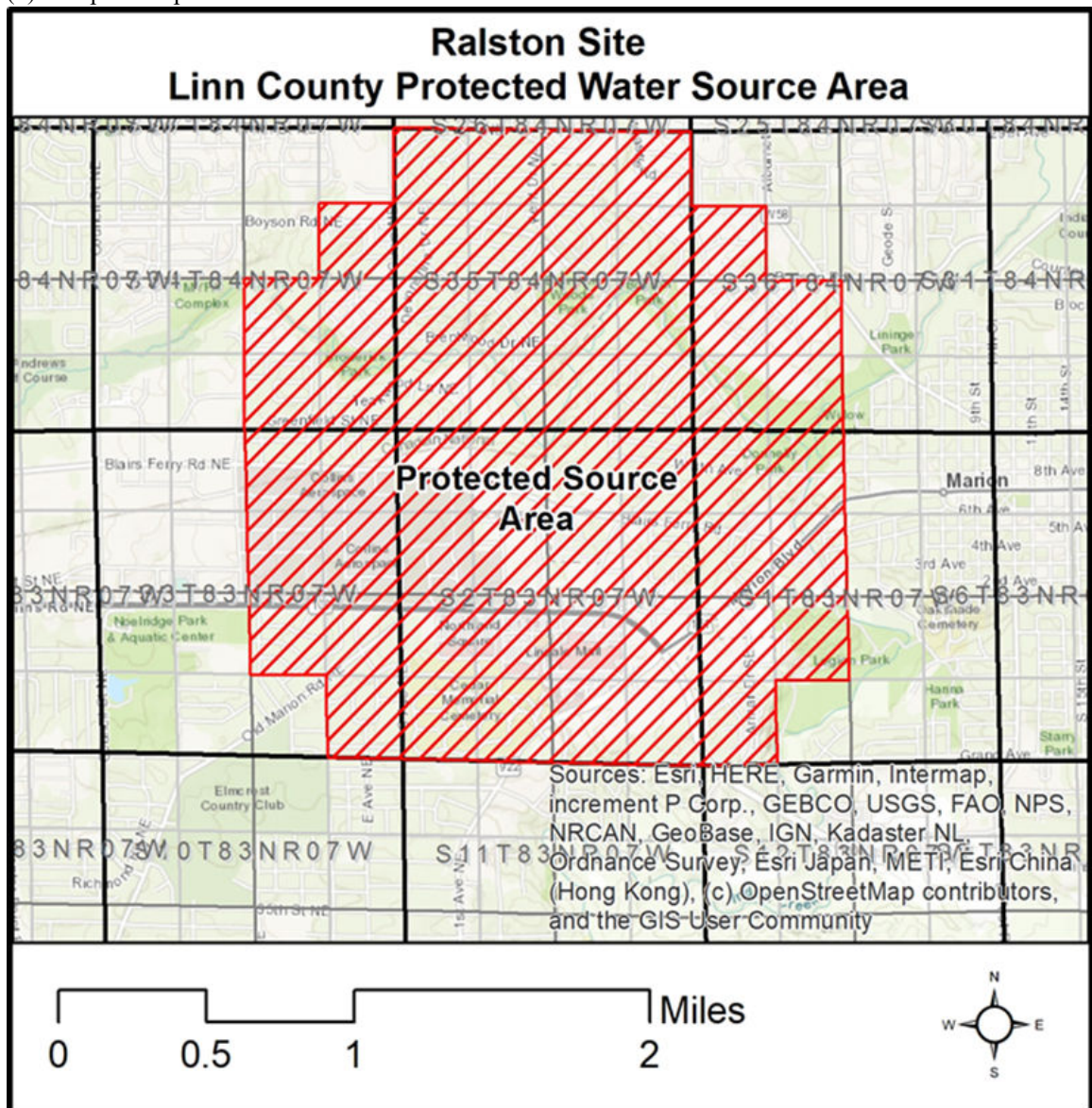
a. Geographic area. The protected water source area includes an area within the boundaries of the cities of Cedar Rapids and Marion in Linn County. The actual geographical boundaries of the area are defined in 53.5(1)“d.”

b. New or modified water use permits. Any new application for a permit to withdraw groundwater or to increase an existing permitted groundwater withdrawal from within the protected water source area will be restricted or denied, if necessary, to preserve public health and welfare or to minimize movement of groundwater contaminants from the Ralston Site. The Ralston Site is identified as an EPA Comprehensive Environmental Response, Compensation, and Liability Act site under identification number IAD 980632491.

c. Groundwater withdrawal. Groundwater withdrawal from within the protected water source area may also be restricted or denied from what would otherwise be nonregulated wells, if necessary, to preserve public health and welfare or to minimize the movement of groundwater contaminants from the Ralston Site. The Linn County health department will refer any application for a private well construction permit within the protected water source area to the department, which will determine whether to permit the proposed well.

d. Map of protected water source area. The department shall maintain a map of the protected water source area.

- (1) The entire following described area within Linn County is defined as a protected water source:
1. All areas of Section 35, Township 84 North, Range 7 West.
 2. All areas of the SW $\frac{1}{4}$ of Section 36, Township 84 North, Range 7 West.
 3. All areas of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 36, Township 84 North, Range 7 West.
 4. All areas of the SE $\frac{1}{4}$ of Section 34, Township 84 North, Range 7 West.
 5. All areas of the SE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 34, Township 84 North, Range 7 West.
 6. All areas of Section 2, Township 83 North, Range 7 West.
 7. All areas of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 1, Township 83 North, Range 7 West.
 8. All areas of the N $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Section 1, Township 83 North, Range 7 West.
 9. All areas of the SW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 1, Township 83 North, Range 7 West.
 10. All areas of the NE $\frac{1}{4}$ of Section 3, Township 83 North, Range 7 West.
 11. All areas of the N $\frac{1}{2}$ of the SE $\frac{1}{4}$ of Section 3, Township 83 North, Range 7 West.
 12. All areas of the SE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 3, Township 83 North, Range 7 West.
- (2) Map of the protected source area.



53.5(2) Cambrian-Ordovician (Jordan) aquifer in Johnson and Linn Counties.

a. Geographical area. The protected water source area includes portions of Johnson and Linn Counties. The actual geographical boundaries of the area are defined in 53.5(2)“d.”

b. New or modified water use permits. Any new application for a permit to withdraw groundwater or to increase an existing permitted groundwater withdrawal from the Cambrian-Ordovician (Jordan) aquifer within the protected water source area will be restricted or denied if necessary to preserve public health and welfare.

c. Groundwater withdrawal. Groundwater withdrawal from within the protected water source area may also be restricted or denied from water supply wells constructed in the Cambrian-Ordovician (Jordan) aquifer, public or private, and the construction of all new water supply wells in this aquifer shall be restricted or denied, if necessary, to preserve public health and welfare or to minimize adverse effects to the available head. The Johnson County and Linn County health departments are not authorized to issue a construction permit for a private well drilled into or through the Cambrian-Ordovician (Jordan) aquifer within the protected water source area without department approval. The department will determine whether the proposed well can be constructed and may require that the well meet public water well standards.

d. Map of protected water source area. The department shall maintain a map of the protected water source area.

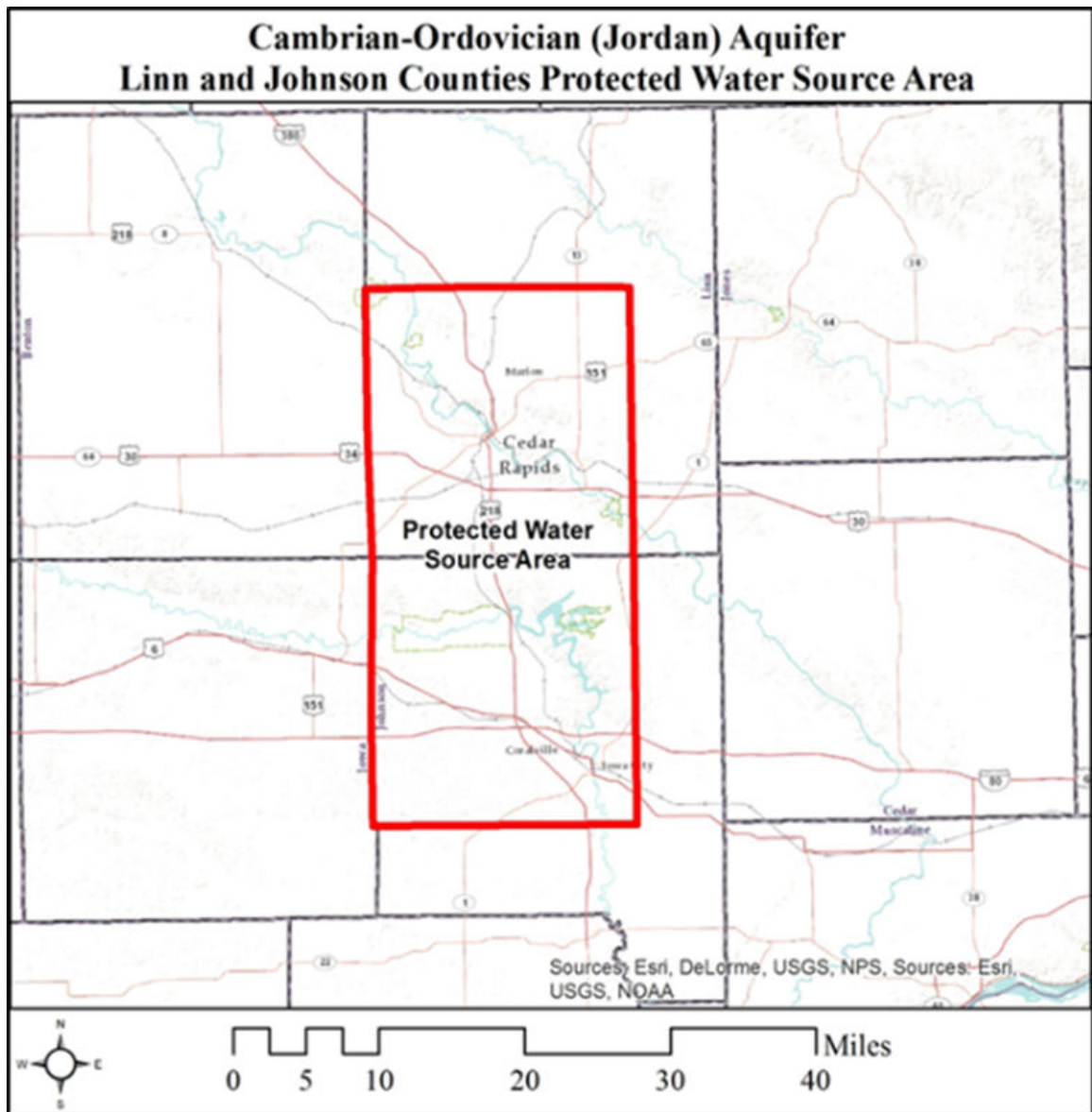
(1) The entire following described area within Johnson County and within Linn County is defined as a protected water source.

Johnson County

1. All areas of Township 79 North, Range 6 West.
2. All areas of Township 79 North, Range 7 West.
3. All areas of Township 79 North, Range 8 West.
4. All areas of Township 80 North, Range 6 West.
5. All areas of Township 80 North, Range 7 West.
6. All areas of Township 80 North, Range 8 West.
7. All areas of Township 81 North, Range 6 West.
8. All areas of Township 81 North, Range 7 West.
9. All areas of Township 81 North, Range 8 West.

Linn County

1. All areas of Township 82 North, Range 6 West.
 2. All areas of Township 82 North, Range 7 West.
 3. All areas of Township 82 North, Range 8 West.
 4. All areas of Township 83 North, Range 6 West.
 5. All areas of Township 83 North, Range 7 West.
 6. All areas of Township 83 North, Range 8 West.
 7. All areas of Township 84 North, Range 6 West.
 8. All areas of Township 84 North, Range 7 West.
 9. All areas of Township 84 North, Range 8 West.
- (2) Map of the described protected water source area in Linn and Johnson Counties.



53.5(3) *Cambrian-Ordovician (Jordan) aquifer in Webster County.*

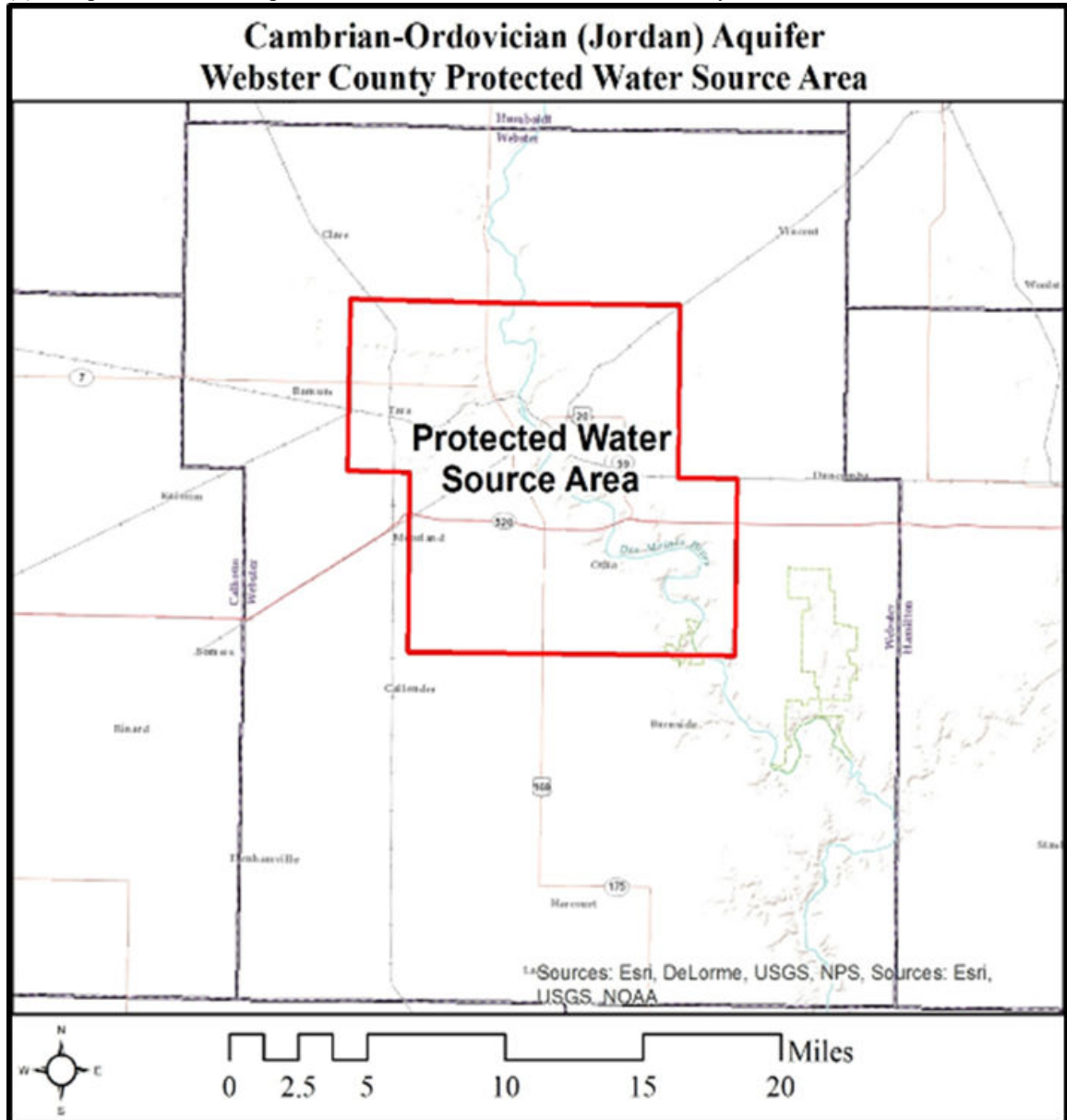
a. Geographical area. The protected water source area includes portions of Webster County. The actual geographical boundaries of the area are defined in 53.5(3)“d.”

b. New or modified water use permits. Any new application for a permit to withdraw groundwater or to increase an existing permitted groundwater withdrawal from the Cambrian-Ordovician (Jordan) aquifer within the protected water source area will be restricted or denied if necessary to preserve public health and welfare.

c. Groundwater withdrawal. Groundwater withdrawal from within the protected water source area may also be restricted or denied from water supply wells constructed in the Cambrian-Ordovician (Jordan) aquifer, public or private, and the construction of all new water supply wells in this aquifer shall be restricted or denied, if necessary, to preserve public health and welfare or to minimize adverse effects to the available head. The Webster County health department is not authorized to issue a construction permit for a private well drilled into or through the Cambrian-Ordovician (Jordan) aquifer within the protected water source area without department approval. The department will determine whether the proposed well can be constructed and may require that the well meet public water well standards.

d. *Map of protected water source.* The department shall maintain a map of the protected water source area.

- (1) The entire following described area within Webster County is defined as a protected water source.
 1. All areas of Township 88 North, Range 28 West.
 2. All areas of Township 88 North, Range 29 West.
 3. All areas of Township 89 North, Range 28 West.
 4. All areas of Township 89 North, Range 29 West.
- (2) Map of the described protected water source area in Webster County.



53.5(4) *Iowa Army Ammunition Plant (IAAAP) RDX Contaminant Site in Des Moines County and Lee County.* The IAAAP hexahydro-1,3,5-trinitro-1,3,5-triazine (CAS Registry Number 121-82-4, also known as RDX, or Royal demolition explosive) protected water source area is known as the IAAAP RDX protected water source area.

a. *Geographical area.* The IAAAP RDX protected water source area includes portions of Des Moines and Lee Counties. The geographical boundaries of the area are defined in 53.5(4) "e." The IAAAP

site is identified as an EPA Comprehensive Environmental Response, Compensation, and Liability Act site under identification number IA7213820445.

b. New or modified water use permits. Any new application for a permit to withdraw groundwater or to increase an existing permitted groundwater withdrawal from the IAAAP RDX protected water source area will be restricted or denied if necessary to preserve public health and welfare and to minimize the movement of groundwater contaminants from the IAAAP RDX site.

c. Groundwater withdrawal. Groundwater withdrawal from within the protected water source area may also be restricted or denied from regulated or nonregulated water supply wells, and the construction of all new water supply wells shall be restricted or denied, if necessary, to preserve public health and welfare and to minimize movement of groundwater contaminants.

(1) The department is the only authorized well permitting authority within the protected water source area. No well shall be constructed within the protected water source area unless a written permit is obtained from the department.

(2) All well construction permit applications for this protected water source area shall be submitted to the department. The Des Moines County and Lee County health departments or their designated permitting authorities shall refer all private well construction permit applications to the department when the proposed wells are located within the protected water source area.

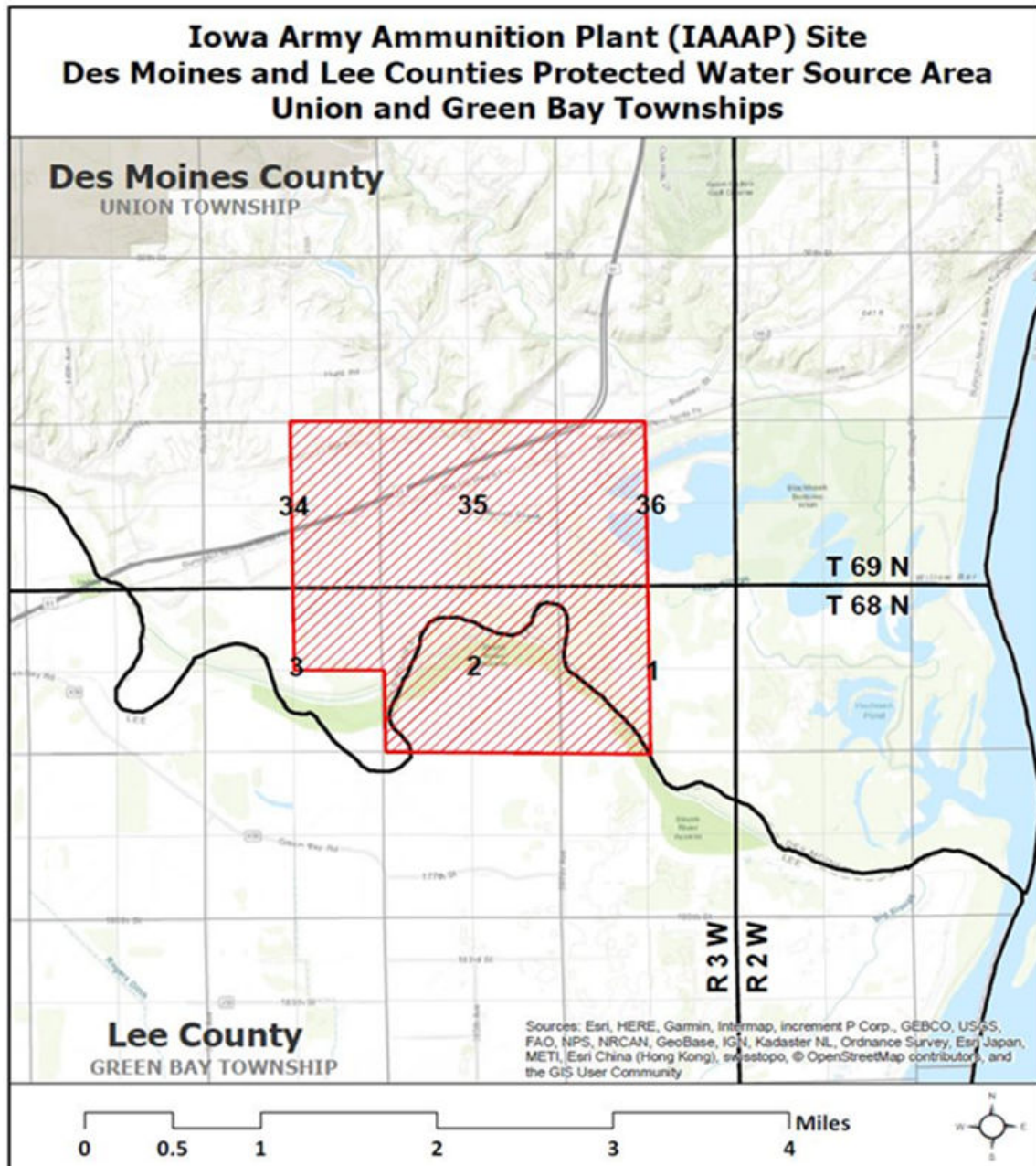
(3) The department will determine whether the proposed well can be installed and the well construction standards that are required for the well's installation. All approved well construction shall use department-approved well construction standards and operational standards to ensure the protection of public health and welfare and to minimize the potential movement of contaminants in the groundwater within the protected water source area.

d. Boundaries. When monitoring results, or an investigation conducted by the department, the IAAAP, or an agent designated by either party indicates that the monitored contaminant concentrations or the monitored contaminant boundaries have significantly changed, the department may increase or decrease the boundaries of the protected water source area to maintain the separation distance to the monitored contamination. The department will publish any changes in the contaminant boundaries and send a notice to the IAAAP, the Des Moines County and Lee County health departments, and the affected landowners.

e. Map of protected water source. The department shall maintain a map of the protected water source area.

(1) The following described area within Des Moines County and Lee County is defined as a protected water source.

1. Des Moines County, Union Township
 - East one-half of section 34 in Township 69 North, Range 3 West
 - All areas of section 35 in Township 69 North, Range 3 West
 - West one-half of section 36 in Township 69 North, Range 3 West
 2. Des Moines County, Green Bay Township
 - Northeast quarter section 3 in Township 68 North, Range 3 West
 - All areas of section 2 in Township 68 North, Range 3 West
 - West one-half of section 1, Township 68 North, Range 3 West
 3. Lee County, Green Bay Township
 - All areas of section 2 in Township 68 North, Range 3 West
 - All areas of section 1 in Township 68 North, Range 3 West
- (2) Map of the described protected water source area in Des Moines and Lee Counties.



[ARC 9200C, IAB 5/14/25, effective 6/18/25]

NOTE: When protected sources are designated, they will be listed as part of this rule.

This rule is intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274 and 455B.278.

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CHAPTER 54
WATER USE PERMIT RESTRICTIONS OR COMPENSATION BY PERMITTED USERS TO
NONREGULATED USERS DUE TO WELL INTERFERENCE

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—54.1(455B) Definitions. The following definitions apply to this chapter:

“Adequate groundwater supply” means an aquifer that is capable of providing enough water to satisfy the demands that have been placed on it.

“Apparent well interference” means well interference in a nonregulated well resulting from a permitted use is likely but has not been verified.

“Compensation” means payment to the owner of a nonregulated well for damages caused by a lowered water level in the well due to withdrawal of water for a permitted use.

“Complainant” means the owner of a nonregulated well who is suspected of being or has been shown to be adversely affected by well interference.

“Complaint” means the formal allegation against a permitted water user who is suspected of causing well interference.

“Informal negotiations” means discussion between a complainant and permittee or applicant regarding settlement of a well interference conflict.

“Informal settlement” means a resolution of a well interference conflict by informal negotiations between a complainant and permittee or applicant without formal action by the department.

“Suspect permittee” means a party possessing a water use permit when the permitted use is suspected of causing well interference in a nonregulated well.

“Technical Bulletin No. 23” means “Technical Bulletin No. 23, Guidelines for Well Interference Compensation,” Iowa Department of Natural Resources, April 1986, available on the department’s website at www.iowadnr.gov.

“Test pumping” means a controlled aquifer test for verification of well interference using the existing wells and pumping systems of the complainant and suspect permittee.

[ARC 9201C, IAB 5/14/25, effective 6/18/25]

567—54.2(455B) Requirements for informal negotiations.

54.2(1) The complainant and permittee or applicant must attempt to negotiate an informal settlement prior to the department becoming involved in the verification and settlement procedures described in rules 567—54.6(455B) and 567—54.7(455B). If informal negotiations fail, a letter stating the reasons for the failure to achieve a settlement, signed by all parties to the complaint or identifying those parties who refuse to sign, shall be sent to the department. Verbal notification will be accepted if followed by written confirmation.

54.2(2) Guidelines for informal negotiations are provided in Technical Bulletin No. 23. Settlements which result from informal negotiations may be registered with the department for consideration in subsequent conflicts.

[ARC 9201C, IAB 5/14/25, effective 6/18/25]

567—54.3(455B) Failure to cooperate. If any party refuses to cooperate, fails to provide the required information, or fails to meet the specified deadlines, the complaint may be dismissed, a permanent permit modification or termination may be issued pursuant to 567—subrule 50.14(1) or an application may be conditioned or denied.

[ARC 9201C, IAB 5/14/25, effective 6/18/25]

567—54.4(455B) Well interference by proposed withdrawals. If the department, using supporting data provided by the applicant pursuant to rule 567—50.5(455B), determines that a proposed withdrawal will cause verified well interference in a nonregulated well(s), the applicant will be given options for resolving the imminent conflict(s) in accordance with 567—subrule 50.7(1). If the applicant selects an option involving compensation to the nonregulated well owner(s), the applicant and nonregulated well owner(s)

must attempt to negotiate an informal settlement in accordance with rule 567—54.2(455B). If informal negotiations fail, the department shall pursue administrative resolution of the conflict, pursuant to rule 567—54.7(455B). The applicant will remain liable for future well interference that is proven to be greater than the amount resolved in the original settlement and for other well interference that was not previously verified.

[ARC 9201C, IAB 5/14/25, effective 6/18/25]

567—54.5(455B) Well interference by existing permitted uses. If a complaint is made to the department by the owner of a nonregulated well regarding suspected well interference, the following procedures will be followed.

54.5(1) *Initial notification of complaint.* The complainant shall provide the department with the following information:

- a. The complainant's name, address, email address, and telephone number;
- b. A description of the nonregulated well, including location, depth, construction data, and other pertinent information, as available;
- c. A description of the problem; and
- d. The suspected cause of well interference.

54.5(2) *Initial department response.* The department will provide the complainant with a description of procedures, guidelines for resolving well interference complaints, and information from department files on permitted uses in the area. The department will also notify any permitted user who is suspected of causing well interference of a possible well interference complaint.

54.5(3) *Well inspection.* It is the complainant's responsibility to have the affected well inspected by a certified well contractor, to have the contractor complete Appendix C (Well Inspection Form) from Technical Bulletin No. 23, and to submit the document to the department. Well inspection costs are eligible for compensation if well interference is subsequently verified.

54.5(4) *Corrective work prior to a settlement.*

a. The complainant may proceed with corrective measures prior to a settlement and remain eligible for compensation if well interference is subsequently verified. However, there will be no assurance of compensation. To be eligible for compensation, conditions prior to the corrective work must be documented using Appendix C (Well Inspection Form) from Technical Bulletin No. 23.

b. The department and suspect permittee(s) should be notified, given opportunity to inspect the nonregulated well, and consider alternative means for resolving the possible conflict prior to proceeding with any corrective work.

c. Determination of apparent well interference, verified well interference, and compensation, if any, will proceed in accordance with this chapter.

54.5(5) *Determination of apparent well interference.*

a. The department will determine that a complaint appears valid if all of the following criteria are met:

- (1) The well inspection found no mechanical or structural reason for well failure;
- (2) A permitted use can be identified as an apparent cause of well interference;
- (3) The nonregulated well was in use when the permitted use began or the suspect permitted use changed significantly while the nonregulated well was still active;
- (4) The suspect permittee and complainant withdraw water from the same aquifer or sources likely to be in close hydraulic connection;
- (5) The suspect permittee was withdrawing water during the period when well interference was claimed;
- (6) Well interference is reasonably possible with known conditions (i.e., pumping rates, separation distances, aquifer properties, and relative water levels in the wells); and
- (7) Other obvious causes of water level decline are not apparent.

b. The department may identify permitted uses, in addition to those identified by the complainant, as apparent causes of well interference and will so notify the complainant and each suspect permittee. The department or a suspect permittee may identify other nonregulated wells that may also be affected by well

interference caused by the suspected permittee(s), and the department will so notify the suspect permittee(s) and each potential complainant who has been identified.

c. If the department determines that apparent well interference exists, it will immediately notify the complainant and suspect permittee(s) of the situation, procedures, and required informal negotiations. If the department determines that apparent well interference does not exist, the complaint will be dismissed and the complainant and each suspect permittee will be so notified. A dismissal may be appealed by the complainant as provided in 54.9(2).

54.5(6) *Emergency withdrawal suspension or restrictions.* If the complainant's well is not able to deliver a sufficient water supply due to apparent well interference, the department may immediately suspend or restrict withdrawal by the suspect permittee(s) pursuant to 567—subrule 50.14(2). Restrictions may include but are not limited to scheduling withdrawals or reducing withdrawal rates. If approved by the department, the permittee(s) may elect to provide a temporary water supply to the complainant or take other appropriate measures as an alternative to withdrawal suspension or restrictions.

[ARC 9201C, IAB 5/14/25, effective 6/18/25]

567—54.6(455B) Verification of well interference.

54.6(1) *Test pumping.* Test pumping of the complainant's and permittee's wells may be required for verification of well interference. A permittee may perform test pumping to verify well interference even if it is not required by the department.

a. Test pumping shall be authorized by the department and supervised by a certified well contractor, registered professional engineer, or other department designee. The test pumping shall be performed within 30 days of department notification to the permittee and the complainant that test pumping is to be conducted. The permittee and complainant shall each be responsible for all costs associated with test pumping their own wells, although the complainant's costs may be eligible for compensation.

b. The complainant shall provide access to the nonregulated well for water level measurements during test pumping by the permittee. The permittee may be required to provide the complainant with a temporary water supply during test pumping. Test pumping shall be performed in accordance with Technical Bulletin No. 23.

54.6(2) *Determination of verified well interference.* The department will evaluate the occurrence of well interference based on data from the test pumping or other available hydrologic information and notify the affected parties of the results.

a. If test pumping was not performed under critical conditions (e.g., pumping rate less than maximum permitted rate, pumping duration less than critical duration, recharge more than minimum, etc.), the department will adjust the test pumping results accordingly and qualify estimations when reporting the results.

b. The evaluation results will be used by the department to determine if well interference is verified in accordance with Technical Bulletin No. 23. Generally, well interference will be verified if it causes the water in a nonregulated well to drop to a level below the pump suction, or it is shown to significantly diminish well performance.

c. If well interference is verified, the settlement procedures in 567—54.7(455B) will be followed. If well interference is not verified, the complaint will be dismissed and any emergency order will be removed. The department will notify the complainant and permittee of its decision regarding the complaint, and either party may appeal pursuant to 54.9(2).

[ARC 9201C, IAB 5/14/25, effective 6/18/25]

567—54.7(455B) Settlement procedures.

54.7(1) *Settlement options.*

a. At the same time as notification prescribed in 54.6(2) "c" or upon notice to the applicant of verified well interference according to 567—subrule 50.14(2), the department will also advise the permittee or applicant of available settlement options, including the following:

- (1) Permanent permit modifications (e.g., reduced pumping rate or scheduled pumping).
- (2) Compensation to the complainant (see 54.7(3) and Technical Bulletin No. 23).

b. In situations where verified well interference occurs due to an existing permitted use, the permittee shall notify the department of the selected option within 30 days of notification.

54.7(2) *Compensation offer requirements.* If the compensation option is selected, the applicant or permittee shall submit a notarized offer to the complainant and the department. This offer shall be submitted by a permittee within 30 days of the notification prescribed in 54.6(2) and 54.7(1). An offer must include the following:

a. Written comments by a certified well contractor or licensed professional engineer detailing well improvements needed in order to provide the complainant with a sufficient water supply;

b. Itemized costs of the improvements by a certified well contractor with a breakdown of costs eligible for compensation (see 54.7(3) and Technical Bulletin No. 23);

c. A water quality analysis of the existing well water, if a new well is proposed. The analysis shall include, at minimum, determination of levels of nitrate, bacteria, iron, and hardness; and

d. A statement of what is being offered to the complainant and terms of the offer (e.g., timing, who will perform the work, or a completed work settlement).

54.7(3) *General criteria for cost liability.* The nonregulated well owner's costs for well inspection and test pumping are eligible for compensation. All costs for remedial work necessary to resolve a verified well interference problem are eligible for compensation, except as noted below. Technical Bulletin No. 23 includes additional details on cost liability. The following costs are not eligible for compensation:

a. When the existing well does not comply with applicable well construction standards (567—Chapter 49), costs required to bring the well up to standards;

b. Costs for work requested by the nonregulated well owner that result in upgrading the nonregulated water supply;

c. Legal fees;

d. Operation and maintenance costs of the water supply system;

e. Well rejuvenation costs, unless the well still fails to provide a sufficient water supply after the well rejuvenation requested by the permittee is completed; and

f. Costs due to temporary loss of water for such things as hauling water or going to a laundromat, unless the permittee refuses to comply with an emergency order by the department.

54.7(4) *Complainant's response to the compensation offer.* The complainant shall respond in writing to the department within 15 days of an offer receipt and indicate acceptance or rejection of the offer. If the offer is rejected, the complainant shall submit a counteroffer with the response. The counteroffer shall contain supporting information including an itemized cost estimate of needed improvements by a certified well contractor or licensed professional engineer, if appropriate.

54.7(5) *Department review of compensation offer and counteroffer.* The department will review the offer and counteroffer and determine if the offer is reasonable in accordance with Technical Bulletin No. 23.

a. If the offer is determined to be reasonable but is rejected by the complainant, the complainant will be given 15 days to reconsider the offer, after which the complaint will be dismissed and any suspension or restrictions on withdrawals by the permittee will be removed or, in the case of an application, the permit process will be continued. The complainant may appeal a dismissal as provided in 54.9(2).

b. If the offer is not found to be reasonable, the permittee will be given one opportunity to revise the offer in accordance with department determinations. If a revised offer is not received within 15 days or the department determines the revised offer is not reasonable, the department will determine appropriate compensation or withdrawal restrictions to resolve the well interference. This determination will be enforced through either the imposition of permit conditions, permit termination, or permit denial. For an existing permit, the department will modify or terminate the permit as provided in 567—subrule 50.14(1). For a pending permit application, the department will either deny the application or approve it with appropriate conditions, pursuant to 567—50.8(455B).

[ARC 9201C, IAB 5/14/25, effective 6/18/25]

567—54.8(455B) Recurring complaints.

54.8(1) If a complainant accepts compensation from a permittee for settlement of a well interference conflict, any future complaint by the complainant against the same permittee will not be considered unless

either a significant change in the permitted withdrawal occurs; the permittee utilized simplified test pumping procedures or other less than optimal verification methods, as described in Technical Bulletin No. 23; or the permittee provided compensation to resolve less than the estimated worst-case well interference. A complainant who accepts compensation from an applicant is still eligible for compensation if subsequent well interference is proven to be greater than that resolved in the original settlement.

54.8(2) If a previous complaint was dismissed or settled without compensation, a new complaint must include justification for reconsideration. Justification may include a significant change in withdrawals by the suspect permittee or water level measurements from the complainant's well which indicate more well interference than found in the previous complaint. A physical change to withdrawal facilities may be considered a significant change to a permitted use (e.g., moving the withdrawal location, installing a new well, or installing a higher-capacity pump).

54.8(3) A complaint that was dismissed due to failure to cooperate, as provided in 567—54.3(455B), will be reconsidered when the required cooperation is demonstrated. However, it will be treated as a new complaint.

[ARC 9201C, IAB 5/14/25, effective 6/18/25]

567—54.9(455B) Waivers and appeals.

54.9(1) *Waiver procedures.* Waivers to these rules may be granted by the department provided just cause can be demonstrated. Waiver requests and supporting information shall be submitted in writing to the department.

54.9(2) *Appeal procedures.* Department determinations under 54.5(5), 54.6(2) and 54.7(4) may be appealed by following the procedure in 561—Chapter 7.

[ARC 9201C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.171 and 455B.281.

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CHAPTER 55 AQUIFER STORAGE AND RECOVERY

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—55.1(455B) Statutory authority and purpose.

55.1(1) The authority for the department of natural resources to permit persons to inject, store, and recover treated water for potable use is given by Iowa Code sections 455B.261, 455B.265 and 455B.269. This permit requirement applies to any aquifer storage and recovery (ASR) system. An entity seeking an ASR permit must review the permit criteria and contact the department if a permit is required.

55.1(2) The ASR rules are intended to describe aquifer storage and recovery, including defining the affected area within the aquifer, creating a permit program with technical criteria for evaluating ASR projects, incorporating the practice of treated water recovery, and defining legal rights and obligations affecting ASR permit holders.

[ARC 9202C, IAB 5/14/25, effective 6/18/25]

567—55.2(455B) Definitions. The following definitions apply to this chapter:

“Aquifer storage and recovery” or *“ASR”* means the injection and storage of treated water in an aquifer through a permitted well during times when treated water is available and withdrawal of the treated water from the same aquifer through the same well during times when treated water is needed.

“Contiguous” means directly adjacent along all or part of one side of a legally defined piece of property. Tracts of land involved in the same water supply and separated only by separators such as roads, railroads, or bike trails are deemed contiguous tracts.

“Displacement zone” means the three-dimensional area of dispersion into which treated water is injected for storage, subject to later recovery.

“Limited registration” means a two-year written authorization for a nonrecurring use of water for the purpose of forecasting and testing an ASR well system, including cyclic test pumping as necessary.

“Mechanical integrity” means any structural or material defect in an ASR well, well casing, or appurtenance that will prevent or materially impair the injection or pumping of water within an aquifer or contribute to aquifer contamination.

“Permit” means a written department authorization issued to a permittee for the storage of treated water in an existing aquifer or the subsequent withdrawal of treated water from an existing aquifer. A permit specifies the quantity, duration, location, and instantaneous rate of this storage or withdrawal.

“Permittee” means a water supply system that obtains a permit authorizing the injection of and possession by storage of treated water in an aquifer, the withdrawal of this water at a later date, and the actual beneficial use of the water.

“Receiving aquifer” means the aquifer into which treated water is injected under the terms of an ASR permit.

“Recovered water” means water that is recovered from storage within a displacement zone under the terms of an ASR permit.

“Stored water” means injected, treated potable water that is stored in a receiving aquifer within the displacement zone under the terms of an ASR permit.

“Treated water” means water that has been physically, chemically, or biologically treated to meet national drinking water standards and is fit for human consumption as defined in 567—Chapters 40 through 43.

“Zone of influence” means a circular area surrounding a pumping water well where the water table has been measurably lowered due to the action of the pump.

[ARC 9202C, IAB 5/14/25, effective 6/18/25]

567—55.3(455B) ASR project application processing.

55.3(1) Applications.

a. Initial application. An ASR permit shall be required for the storage of all treated water in an aquifer for later recovery for potable uses. An initial ASR permit application (a request for a new permit)

shall be made on a form obtained from the department. An application must be submitted by or on behalf of the water system owner, lessee, or option holder of the area where the water is to be stored and recovered.

(1) An application must be accompanied by a map portraying:

1. The points of injection and withdrawal;
2. The immediate vicinity of the receiving aquifer;
3. Any production, test, or other observation wells within the aquifer; and
4. The area of water storage.

(2) An application must include a description of the land where wells are located and water will be injected, withdrawn, and used, oriented as quarter-section, section, township, and range.

(3) One application will be adequate for all uses on contiguous tracts of land.

(4) A PWS construction permit issued pursuant to 567—Chapter 43 is also required for all injection/recovery wells.

b. Limited registration. In response to an initial application, the department will issue a limited registration to initiate an ASR pretesting program pursuant to 55.4(1) “a.” The department will only issue an ASR permit after approval and completion of an ASR pretesting program, with appropriate public notification pursuant to 55.3(3) and evaluation of the test results.

c. Modification or renewal. An ASR permit modification or renewal request shall be made in a manner similar to an initial application. A modification or renewal request does not need to reiterate map and location information unless the information has changed. The limited registration requirement for aquifer pretesting does not apply to modified or renewed ASR permit requests unless required by the department.

55.3(2) Application fee. A nonrefundable fee of \$700 in the form of a credit card, check, electronic payment, or money order made payable to “Iowa Department of Natural Resources” must accompany any ASR permit application, modification request, or renewal request.

55.3(3) Published notice—limited registration. Prior to receiving a limited registration, an applicant shall publish a notice of intent to test the injection and water pumpage/recovery equipment. Publication shall be in a manner acceptable to the department and in the newspaper of largest circulation in the county where the ASR project is located. Proof of publication shall be submitted to the department. After the publication, the department will issue a limited registration allowing the applicant to conduct test pumping pursuant to 55.4(1) “a,” and the applicant shall notify contiguous landowners by mail of receipt of the limited registration and the intent to test an ASR site.

55.3(4) Published notice—departmental notice of proposed decision. Before issuance of a final ASR permit, the department shall publish notice of proposed decision to issue an ASR permit or deny an ASR application. Publication shall be in the newspaper of largest circulation in the county where the ASR project is located.

a. A notice of proposed decision shall summarize the department’s findings on whether an application conforms to relevant criteria as outlined in 55.4(1). An engineering or hydrogeological summary report prepared by the department may be attached to the notice.

b. The notice of proposed decision shall be mailed to the applicant, any person who commented, and any other person who requests a copy of a proposed decision. The notice shall be accompanied by a certification of the mailing date.

c. A proposed decision becomes the final department decision unless a timely notice of appeal is filed in accordance with 55.3(6).

55.3(5) Department decision. The department’s decision on an application shall be an ASR permit or denial letter. Each ASR permit shall include appropriate standard and special conditions consistent with Iowa Code sections 455B.261 through 455B.274 and 455B.281 and 567—Chapters 50 through 55. The decision may incorporate the summary report described in 55.3(4). Each decision shall include the following:

a. Determinations as to whether the project satisfies all relevant criteria not addressed in an attached summary report;

b. An explanation of each special condition; and

c. An explanation of consideration given to all comments submitted pursuant to 55.3(3) and 55.3(4), unless comments are addressed in the attached summary report.

55.3(6) *Appeal of department decision.* Any person aggrieved by an initial ASR permit decision may appeal the action. An appeal request must be submitted in writing to the director within 30 days of the date of issuance of the final department decision. The director's decision on an appeal may be further appealed to the commission. The form of appeal and appeal procedures are governed by 567—Chapter 7. The department shall mail a copy of the notice of appeal to each person who commented on the application.

[ARC 9202C, IAB 5/14/25, effective 6/18/25]

567—55.4(455B) ASR technical evaluation criteria.

55.4(1) *Requirements.* Injections into aquifers for the purpose of treated water storage and subsequent withdrawals from the receiving aquifers intended for potable uses shall be subject to the following requirements:

a. *Aquifer pretesting.*

(1) A limited registration for aquifer pretesting as described in 55.3(1)“b” shall be for the period of two years and may be renewed for two additional one-year periods, for a total cumulative registration time not to exceed four years, should pretesting completion require more than one year.

(2) A limited registration shall allow aquifer pretesting for determining the feasibility of ASR, including placement of pumping and storage/extraction equipment. The pretesting program shall be designed to provide the information to evaluate the ultimate capacity anticipated for the ASR project and provide assurance that the ASR site shall not restrict other uses of the aquifer. The pretesting program shall include injection rates and schedules, water storage volumes, recovery rates and schedule, and a final testing report.

b. *Engineering report.* An engineering report evaluating the technical feasibility of the proposed water injection and the probable percentage of recovery of treated water when pumped for recovery shall be submitted to the department.

(1) The engineering report shall include preliminary information from conceptual evaluations and aquifer pretesting, such as:

1. Injection rates and schedules;
2. Water storage volumes;
3. The length of time the injected water will be stored;
4. The projected recovery rate;
5. Water quality data necessary to demonstrate that the water meets national drinking water standards;
6. Water level monitoring data, including the location of observation wells, if any;
7. A plan detailing what will be done with the recovered water if the intended use is not possible; and
8. A final testing protocol.

(2) If the report can demonstrate, by field test results or by conceptual or mathematical hydrogeologic modeling, that the injection, storage, and subsequent recovery will not adversely affect nearby users, an ASR project may be permitted after department review.

(3) A displacement zone containing the stored volume of water will not be allowed if it adversely affects another user's zone of influence. If the department finds, through hydrogeologic modeling or during pretesting, that the proposed displacement zone may impact the zone of influence of another user's existing well, additional testing will be required. The department may require the applicant to construct observation wells between the ASR site and nearby wells and may designate project-specific monitoring and reporting requirements at the observation wells.

(4) A hydrogeologic site investigation that evaluates potential quantitative and qualitative impacts to the aquifer, including changes to localized aquifer geochemistry, shall be part of the engineering report. Preliminary hydrogeologic information shall include:

1. The local geology;
2. A hydrogeologic flow model of the area flow patterns;
3. A description of the aquifer targeted for storage;
4. The estimated flow direction and rate of movement;

5. Locations of both permitted and private wells within the area affected by ASR wells, including best estimates of respective zones of influence;

6. A basis for estimating the displacement zone; and

7. Potable water quantity recovery estimates.

c. *Protection of nearby existing water uses.* An ASR permit applicant shall demonstrate that an ASR site will not restrict other uses of the aquifer by nearby water use permittees.

(1) An applicant shall conduct an inventory of nearby wells and submit it to the department with an ASR permit application. The department, after considering the rate and amount of the ASR injections and withdrawals and the aquifer characteristics, will determine the inventory's extent and the appropriate radius from the proposed ASR site.

(2) An applicant shall make a good-faith effort to obtain information from public records to identify nearby landowners and occupants and information from drilling contractors identified by a landowner or occupant who responds to the inventory.

(3) An applicant shall immediately notify the department of all objections raised by nearby landowners or other on-site problems.

(4) Well interference conflicts arising from the proposed ASR site or project shall be resolved as outlined in 567—Chapter 54 or as otherwise specified by the department.

[ARC 9202C, IAB 5/14/25, effective 6/18/25]

567—55.5(455B) ASR permits.

55.5(1) *Water use restriction.* Water recovery from an ASR site will not be permitted to any user other than the ASR permittee.

55.5(2) *MCL exceedance limitation.* Contaminant levels in water injected in accordance with an ASR permit shall not exceed the maximum contaminant levels (MCLs) established by the department in 567—Chapters 40 through 43. Chemicals associated with disinfection of the water may be injected into the aquifer up to the standards established under 567—Chapters 40 through 43 or as otherwise specified by the department.

55.5(3) *Reporting and recordkeeping.* Permittees shall maintain a monthly record of injection and recovery, including the total number of hours of injection and recovery and the total metered quantity injected and recovered. These records must be submitted to the department annually.

a. Applicants shall keep project records, including water quality monitoring records, for a period of five years. Water quality monitoring shall be performed at the frequency required by 567—Chapters 40 through 43 and as identified in the system's PWS operation permit.

b. Applicants shall keep records for a period of three years after ASR project termination and recovery well closure(s).

55.5(4) *Vacating a permit.*

a. The department may vacate an ASR permit if:

(1) An applicant fails to construct injection and water pumpage/recovery and ancillary equipment within three years of permit issuance, or the term of subsequent permit modifications or renewals.

(2) An applicant does not use the storage system within three years of permit acquisition.

b. If a permit is vacated, the permittee must submit a site abandonment plan that includes the physical removal of injection and water recovery equipment and the abandonment of all injection/recovery and observation wells, pursuant to 567—Chapter 39.

c. A permittee whose permit is vacated may request a formal review of the action. The permittee must submit a review request in writing to the director within 30 days of notification of the final department decision. The director's decision in a formal review case may be further appealed to the commission.

55.5(5) *Mechanical integrity conditions.* Other conditions necessary to ensure adequate protection of water supplies may be imposed in a permit for mechanical integrity checks of the injection and treated water recovery well.

55.5(6) *Permit modification or revocation.* The department may revoke or modify a permit to prevent or mitigate injury to other water users or otherwise protect aquifer water quality. The department may, based upon valid scientific data, further restrict certain chemicals in the injection source water if the

department finds the constituents will interfere with or pose a threat to the maintenance of Iowa's water resources for present or future beneficial uses.

55.5(7) *Permit duration and conditions, permittee property rights, and well restrictions.*

a. Term. ASR permits shall be issued for 20 years.

b. Permit conditions. ASR permits will specify the maximum allowable injection rate at each well, the maximum allowable annual quantitative storage volume, and the maximum allowable instantaneous water withdrawal rate at each well.

c. Permittee property.

(1) The department shall not authorize withdrawals of treated water from an ASR site by anyone other than the permittee while the permit or subsequent renewal permits are in effect.

(2) Stored water and recovered water are the property of the permittee.

(3) If a permit is revoked or otherwise surrendered, the ownership of the injected water within the aquifer (the water considered as "property") reverts to the State of Iowa.

d. Restrictions on wells within displacement zone.

(1) No new private water wells, injection/withdrawal wells, observation wells, or PWS wells shall be permitted by any governmental entity within the ASR displacement zone while an ASR permit is in effect. Existing wells within a permitted displacement zone shall be plugged pursuant to 567—Chapter 39.

(2) ASR permits shall be filed with the appropriate county recorders to provide notice to present and future landowners of all permit conditions or requirements, including the well prohibition condition.

[ARC 9202C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.261, 455B.265 and 455B.269.

[Filed 7/23/99, Notice 4/7/99—published 8/11/99, effective 9/15/99]

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CHAPTERS 56 to 59
Reserved

TITLE IV
WASTEWATER TREATMENT AND DISPOSAL

CHAPTER 60
SCOPE OF TITLE, DEFINITIONS, WASTEWATER CONSTRUCTION
PERMITS, AND OPERATION PERMITS

[Prior to 7/1/83, see DEQ Chs 15 and 24]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—60.1(455B) Scope of title and definitions.

60.1(1) *Scope of title.* The department has jurisdiction over the surface water and groundwater of the state to prevent, abate and control water pollution by establishing standards for water quality and for direct or indirect discharges of wastewater to waters of the state and by regulating potential sources of water pollution through a system of general rules or specific permits. The construction and operation of any wastewater disposal system (DS) and the discharge of any pollutant to a water of the state require a specific permit from the department unless exempted by the department. This chapter provides general definitions applicable in this title, including 567—Chapters 61 through 69.

60.1(2) *Definitions.* The following definitions apply to this title, unless otherwise specified in a chapter of this title:

“*7Q10*” or “*seven-day, ten-year low stream flow*” means the lowest average stream flow that would statistically occur for seven consecutive days once every ten years.

“*Acute toxicity*” means that level of pollutants that would rapidly induce a severe and unacceptable impact on organisms.

“*ADW flow*” or “*average dry weather flow*” means the daily average flow when the groundwater is at or near normal and runoff is not occurring.

“*Aquatic pesticide*” means any pesticide, as defined in Iowa Code section 206.2, that is labeled for application to surface water.

“*ASTM*” means the Annual Book of Standards, Section 11, Water and Environmental Technology, published by ASTM International, www.astm.org.

“*Average*” means the sum of the total daily discharges by weight, volume or concentration during the reporting period divided by the number of days during the reporting period when the measurements were made.

“*AWW flow*” or “*average wet weather flow*” means the daily average flow for the wettest 30 consecutive days for mechanical plants or for the wettest 180 consecutive days for controlled discharge lagoons.

“*BMP*” or “*best management practice*” means a practice or combination of practices that is determined, after problem assessment, examination of alternative practices, and appropriate public participation, to be the most effective, practicable (including technological, economic and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.

“*BOD₅*” or “*biochemical oxygen demand (five-day)*” means the amount of oxygen consumed in the biological processes that break down organic matter in water by aerobic biochemical action in five days at 20°C.

“*Bypass*” means the diversion of waste streams from any portion of a treatment facility or collection system. A bypass does not include internal operational waste stream diversions that are part of the design of the treatment facility, maintenance diversions where redundancy is provided, diversions of wastewater from one point in a collection system to another point in a collection system, or wastewater backups into buildings that are caused in the building lateral or private sewer line.

“*CBOD₅*” or “*carbonaceous biochemical oxygen demand (five-day)*” means the amount of oxygen consumed in the biological processes that break down carbonaceous organic matter in water by aerobic biochemical action in five days at 20°C.

“CFR” or “*Code of Federal Regulations*” means the federal administrative rules adopted by the United States in effect as of July 1, 2024. The amendment of the date contained in this definition shall constitute the amendment of all CFR references contained in 567—Chapters 61 through 69, Title IV, unless a date of adoption is set forth in a specific rule.

“*Chronic toxicity*” means that level of pollutants that would, over long durations or recurring exposure, cause a continuous, adverse or unacceptable response in organisms.

“*Compliance schedule*” means “schedule of compliance” as defined in Iowa Code section 455B.171.

“*Construction permit*” means a written approval from the director to construct a wastewater DS or part thereof in accordance with the plans and specifications approved by the department.

“*Crossover point*” means that location in a river or stream in which the flow shifts from being principally along one bank to the opposite bank. This crossover point usually occurs within two curves or an S-shaped curve of a water course.

“*Culture water*” means reconstituted water or other acceptable water used for culturing test organisms.

“CWA” or “*Clean Water Act*” means the federal Water Pollution Control Act effective July 1, 2024, 33 U.S.C. §1251 et seq.

“*Diluted effluent sample*” means a sample of effluent diluted with culture water at the same ratio as the dry weather design flow to the applicable receiving stream flow contained in the zone of initial dilution as allowed in 567—paragraphs 61.2(4) “b,” “c,” and “d.”

“*Dilution ratio*” means, for a specific wastewater discharger, the ratio of the seven-day, ten-year low stream flow to the effluent design flow (e.g., a dilution ratio of 2:1 has two parts stream flow to one part effluent flow).

“*Discharge of a pollutant*” means any addition of any pollutant or combination of pollutants to navigable waters or waters of the state from any point source. “Discharge of a pollutant” includes additions of pollutants into navigable waters or waters of the state from surface runoff that is collected or channeled by human activity; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person that do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. “Discharge of a pollutant” does not include an addition of pollutants by any indirect discharger.

“*Domestic sewage*” or “*domestic wastewater*” means the water-carried waste products from residences, public buildings, institutions, or other buildings, including bodily discharges from human beings together with groundwater infiltration and surface water as may be present.

“GP” or “*general permit*” means an NPDES permit issued to a class of facilities that could be conditioned and described by a single permit.

“*Human health (HH) criteria*” means that level of pollution that, in the case of noncarcinogens, prevents adverse health effects in humans and, in the case of carcinogens, represents a level of incremental cancer risk of 1 in 100,000. The numerical criteria are based on the human consumption of an average of 6.5 grams of fish and shellfish per day by a 70-kilogram individual for a life span of 70 years.

“*Individual nonstormwater permit*” means a site-specific NPDES or operation permit that is not an individual stormwater permit and that authorizes discharges of sewage, industrial waste, or other waste and allowable discharges of stormwater associated with industrial activity, as specifically noted in the permit.

“*Individual stormwater permit*” means an individual site-specific NPDES permit that authorizes discharges composed entirely of stormwater associated with industrial activity or construction activity and other allowable nonstormwater discharges as specifically noted in the permit.

“*Intermittent watercourses*” means watercourses that contain flow associated with rainfall/runoff events and that periodically go dry even in pooled areas.

“*Lake*” means a natural or man-made impoundment of water with more than one acre of water surface area at the high water level.

“*Local public works department*” means a city or county public works department, a board of trustees of a city utility organized pursuant to Iowa Code chapter 388, or a sanitary sewer district organized pursuant to Iowa Code chapter 358.

“Losing streams” means streams that lose 30 percent or more of their flow during the seven-day, ten-year low stream flow periods to cracks and crevices of rock formations, sand and gravel deposits, or sinkholes in the streambed.

“Low permeability” means a soil layer of well-sorted, fine grain-sized sediments or of rock that under normal hydrostatic pressures would not be significantly permeable. Low permeability soils may include homogeneous clays below the zone of weathering, mudstone, claystone, shale, and some glacial till.

“Major” for municipalities, means a facility having an average wet weather design flow of 1.0 million gallons per day (MGD) or greater. For industries, *“major”* means a facility that is designated by EPA as a major industry.

“Major permit amendment” means a permit amendment that is not a minor permit amendment as defined in this rule.

“mg/L” or *“milligrams per liter”* means milligrams of solute per liter of solution (equivalent to parts per million—assuming unit density). A microgram (μg) is 1/1,000 of a milligram.

“Minimum flow” means that established stream flow in lieu of the seven-day, ten-year low stream flow to which the provisions of 567—Chapter 61 apply.

“Minor” means all remaining facilities that have wastewater discharge flows and that are not designated as major facilities.

“Minor permit amendment” means a permit amendment made with the consent of a permittee that occurs as a result of any of the following:

1. Correction of a typographical error;
2. Modification of the monitoring and reporting requirements in the permit to include more frequent monitoring or reporting;
3. Revision of an interim date in a compliance schedule, provided that the new date is not more than 120 days after the date specified in the permit and does not interfere with the attainment of the final compliance date;
4. Revision of interim or final dates in a schedule to comply with the provisions of the Iowa nutrient reduction strategy;
5. Change in facility name or ownership;
6. Deletion of a point source outfall that does not result in the discharge of pollutants from other outfalls; or
7. Incorporation of an approved local pretreatment program.

“Mixing zone” means a delineated portion of a stream or river in which wastewater discharges will be allowed to combine and disperse into the water body. The chronic criteria of 567—subrule 61.3(3) will apply at the boundary of this zone.

“Mortality” means, for the purpose of a WET test, death, immobilization, or serious incapacitation of the test organisms.

“MWW flow” or *“maximum wet weather flow”* means the total maximum flow received during any 24-hour period when the groundwater is high and runoff is occurring.

“Nephelometric” means the nephelometric method of determining turbidity as stated in 40 CFR Part 136.

“Nonpoint source” means a source of pollutants that is not a point source.

“NPDES permit” means an operation permit issued under an EPA-approved National Pollutant Discharge Elimination System (NPDES) program.

“Operation permit” means a permit by the director authorizing the operation of a wastewater DS or part thereof or discharge source and, if applicable, the discharge of wastes from the DS or part thereof or discharge source to waters of the state. An NPDES permit will constitute the operation permit in cases where there is a discharge to a WOTUS and an NPDES permit is required by the CWA.

“Pass through” means a discharge that, alone or in conjunction with a discharge or discharges entering the treatment facility from other sources, exits a POTW or semipublic sewage DS in quantities or concentrations that cause a violation of any requirement of the treatment facility’s NPDES permit, including an increase in the magnitude or duration of a violation.

“Pathogen” means any microorganism or virus that can cause disease.

“PE” or “*population equivalent*” means the calculated number of people who would contribute an equivalent amount of biochemical oxygen demand (BOD) per day as the system in question, assuming that each person contributes 0.167 pounds of five-day, 20°C, BOD per day.

“*Permit rationale*” means a document that sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing a draft NPDES permit.

“pH” means the hydrogen ion activity of a solution expressed as the logarithm of the reciprocal of the hydrogen ion concentration in moles per liter at 25°C. pH is a measure of the relative acidity or alkalinity of the solution. The range extends from 0 to 14; 7 being neutral, 0 to 7 being acidic, and 7 to 14 being alkaline.

“*Pond*” means a natural or man-made impoundment of water with a water surface area of one acre or less at the high water level.

“POTW” or “*publicly owned treatment works*” means any device or system used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature that is owned by a municipality or other public body created by or under Iowa law and having jurisdiction over disposal of sewage, industrial wastes or other wastes. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW.

“*Primary contact*” means any recreational or other water use in which there is direct human contact with the water involving considerable risk of ingestion of water or contact with sensitive body organs, such as the eyes, ears and nose, in quantities sufficient to pose a significant health hazard.

“*Qualified volunteer*” means a person or group of people acting on their own behalf, and not for a government agency or under contract with the department, to produce water quality monitoring data in accordance with a department-approved volunteer monitoring plan. Qualified volunteers must have the training and experience to ensure quality assurance and quality control for the data being produced or be under the direct supervision of a person having such qualifications. A person or persons identified as participants in a department-approved volunteer monitoring plan will be considered qualified volunteers.

“*Operation records*” means department report forms or other report forms, letters, or documents that may be acceptable to the department that are designed to indicate specific physical, chemical, or biological values for wastewater during a stated period of time.

“*Secondary contact*” means any recreational or other water use in which contact with the water is either incidental or accidental and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, commercial and recreational boating and any limited contact incidental to shoreline activity. This would include users who do not swim or float in the water body while on a boating activity.

“*Sinkhole*” means any depression caused by the dissolution or collapse of subterranean materials in a carbonate formation or in gypsum or rock salt deposits through which water may be drained or lost to the local groundwater system. Such depressions may or may not be open to the surface at times. Intermittently, sinkholes may hold water forming a pond.

“*Temperature*” means a measure of the heat content of water.

“*Turbidity*” is a measure of the optical property of the particles of mud, clay, silt, finely divided organic matter, or microscopic organisms suspended in water that interfere with light transmission, causing the light to be scattered and absorbed rather than transmitted through the water in straight lines.

“*Water contact recreational canoeing*” means the type of activities associated with canoeing outings in which primary contact with the water does occur. This would include users who swim or float in the water body while on a canoeing outing.

“*WET test*” or “*whole effluent toxicity test*” means a test to determine the toxicity of a chemical or chemicals contained in a wastewater discharge on living organisms.

“WQS” or “*water quality standards*” means the water quality standards as enumerated in 567—Chapter 61.

“ZID” or “*zone of initial dilution*” means a delineated portion of a mixing zone in which wastewater discharges will be allowed to rapidly combine and begin dispersing into the water body. The acute criteria of 567—subrule 61.3(3) will apply at the boundary of this zone.

60.1(3) Definitions in Iowa Code and the Iowa Administrative Code (IAC). The following terms applicable to this title are defined in the referenced locations:

- a. Iowa Code section 455B.101: “department.”
- b. Iowa Code section 455B.171: “disposal system,” “effluent standard,” “industrial waste,” “other waste,” “point source,” “pollutant,” “schedule of compliance,” “semipublic sewage disposal system,” “septage,” “sewage,” “sewage sludge,” “treatment works,” and “water of the state.”
- c. Iowa Code section 455B.171 and rule 567—69.1(455B): “PSDS” or “private sewage disposal system.”
- d. Iowa Code section 455B.171(16) and in 40 CFR §403.3(m): “new source.”
- e. Iowa Code section 206.2: “pesticide.”
- f. Rule 567—40.2(455B): “deep well” and “shallow well.”

60.1(4) CFR definitions. The following terms applicable to this title are defined in the referenced locations:

- a. 40 CFR §121.1(j): “water quality requirements.”
- b. 40 CFR §122.2: “CSO” or “combined sewer overflow,” “CSS” or “combined sewer system,” “daily discharge,” “indirect discharger,” “maximum daily discharge limitation,” “new discharger,” “regional administrator,” “sewage from vessels,” and “waters of the U.S.” or “waters of the United States.”
- c. 40 CFR §122.26(b): “small MS4” or “small municipal separate storm sewer system,” “stormwater,” “stormwater discharge associated with industrial activity,” “stormwater discharge associated with small construction activity,” and “uncontrolled sanitary landfill.”
- d. 40 CFR §122.41(m): “severe property damage.”
- e. 40 CFR §133.101: “7-day average” and “30-day average.”
- f. 40 CFR §401.11(l): “navigable waters.”
- g. 40 CFR §403.3: “approved POTW pretreatment program,” “interference,” “non-significant categorical industrial user,” “pretreatment,” “pretreatment requirements,” “pretreatment standard” or “national pretreatment standard,” and “significant industrial user.”

60.1(5) Abbreviations. In addition to the abbreviations listed in the definitions in 60.1(2), the following abbreviations are applicable to this title.

<u>Abbreviation</u>	<u>Meaning</u>
°C	degrees Celsius
AASHTO	American Association of State Highway and Transportation Officials
AICP	alternatives implementation compliance plan
ANSI	American National Standards Institute
BLM	Biotic Ligand Model
CCC	Criterion Continuous Concentration
CEU	continuing education units
CMC	Criterion Maximum Concentration
Corps	United States Corps of Engineers
DC	disadvantaged community
DCA	disadvantaged community analysis
DCM	disadvantaged community matrix
DS	disposal system
DUC	disadvantaged unsewered community
DUCA	disadvantaged unsewered community analysis
DUCM	disadvantaged unsewered community matrix
<i>E. coli</i>	<i>Escherichia coli</i>
ELS	early life stage
EPA	U.S. Environmental Protection Agency
EPS	expanded polystyrene
F & W	fish and water
FCP	future compliance plan
FO	regional Field Office of the department (1, 2, 3, 4, 5, or 6)
ft	foot

<u>Abbreviation</u>	<u>Meaning</u>
ft ²	square feet
gal	gallon
gal/ft ²	gallons per square foot
gal/ft ² /day	gallons per square foot per day
gpd	gallons per day
hr	hour
I/I	infiltration and inflow
IAC	Iowa Administrative Code
IAPMO	International Association of Plumbing and Mechanical Officials
Iowa DOT	Iowa Department of Transportation
IWFDS	Iowa Wastewater Facilities Design Standards
kg	kilogram
MCL	maximum contaminant level
mg	milligram
µg/L	micrograms per liter
mgd	million gallons per day
mL	milliliter
MHI	median household income
mm	millimeter
MPN	most probable number
mt	metric tons
NH ₃ -N	ammonia nitrogen
NOAA	National Oceanic and Atmospheric Administration
NOD	notice of discontinuation
NOI	notice of intent
NSF	National Sanitation Foundation
NSCIU	non-significant categorical industrial user
O&M	operation and maintenance
OIW	outstanding Iowa waters
ONRW	outstanding national resource waters
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PFRP	processes to further reduce pathogens
PGP	pesticides general permit
PN	public notice
POA	plan of action
psi	pound per square inch
PSRP	processes to significantly reduce pathogens
SD	separation distance
SDMP	septage disposal management plan
SIU	significant industrial user
sp.	species
SS	suspended solids (the pollutant parameter total suspended solids)
SWESI	substantial and widespread economic and social impact
TA	treatment agreement
TAPC	total annual project costs
TKN	total kjeldahl nitrogen
Tm	terameter
TMDL	total maximum daily load
TOT	time of transfer
TRC	total residual chlorine
TRE	toxicity reduction evaluation
TSS	total suspended solids

<u>Abbreviation</u>	<u>Meaning</u>
U.S.	United States
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VAR	vector attraction reduction
WER	water-effect ratio
WLA	wasteload allocation
WLAP	Iowa Wasteload Allocation Procedure
WOTUS	waters of the U.S.
WQBEL	water quality-based effluent limit

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.2(455B) Construction permits.

60.2(1) Construction permit requirement.

a. No person shall construct, install or modify any wastewater DS or part thereof or extension or addition thereto without, or contrary to any condition of, a construction permit issued by the director or by a local public works department authorized to issue such permits under Iowa Code section 455B.183, nor shall any connection to a sewer extension in violation of any special limitation specified in a construction permit pursuant to 60.2(4) be allowed by any person subject to the conditions of the permit.

b. Exemptions to the requirement to obtain a construction permit are listed in the Iowa Wastewater Facilities Design Standards, effective June 18, 2025, located on the department's website; hereafter referred to as the IWFDS.

60.2(2) Construction sites.

a. The site for each new wastewater treatment plant, plant expansion, or upgrade of existing facilities must be inspected and approved by the department prior to submission of plans and specifications. Site survey applications must be submitted in accordance with this rule.

b. Site approval under this subrule shall be based on the criteria contained in:

(1) The IWFDS;

(2) The Recommended Standards for Wastewater Facilities, 2014 Edition, a report of the Great Lakes - Upper Mississippi Board of State and Provincial Public Health and Environmental Managers, available on their website at: www.health.state.mn.us/communities/environment/water/tenstates/standards.html; hereafter referred to as the Ten States Standards;

(3) Applicable federal guidelines and standards; and

(4) Other design documents, including standard textbooks, current technical literature and applicable safety standards.

c. The minimum separation distances for PSDS, onsite treatment systems, building sewer service lines and laterals, wastewater treatment works, sewage sludge, septage, and land application wetted disposal areas are as listed below in Table I. Additional separation distances for gravity sanitary sewers, sanitary sewer force mains, storm sewers, drains, and other conveyances are provided in Table A of 567—paragraph 43.3(7) “d” and for PSDS in 567—Chapter 69, and specific narrative separation distances for conveyances are provided in 567—subparagraphs 43.3(2) “a”(3) and (4). Sewage sludge, septage, and domestic or industrial wastewater shall be land applied in accordance with 567—Chapter 67, 567—Chapter 68, and the IWFDS, respectively.

Table I: Wastewater Separation Distances

Structure or Source of Contamination	Required Minimum Lateral Distance, as Measured Horizontally on the Ground Surface, in feet						
	PSDS and Onsite Treatment Systems ¹		Building Sewer Service Lines and Laterals ²	Wastewater Treatment Works ³		Land Application	
	Closed Portion	Open Portion		Lagoons ⁴	Mechanical ⁵	Sewage Sludge	Septage
							Domestic or Industrial Wastewater, Wetted Disposal Area ⁶

Required Minimum Lateral Distance, as Measured Horizontally on the Ground Surface, in feet								
WELLS:								
Public wells:								
Public water supply well - deep ⁷	100	200	25: Water main 75: Standard sanitary sewer	400	200	200	500	200
Public water supply well - shallow ⁷	200	400	25: Water main 75: Standard sanitary sewer	1000	400	200	500	400
Below-ground level finished water storage facility	50		25: Water main 75: Standard sanitary sewer	50	50	50	50	
New or existing private well - deep or shallow	50	100	10	400 ^{8,9}		200	500	
WASTEWATER DISPOSAL SYSTEMS:								
Other PSDSs and onsite treatment systems – open or closed portions ¹⁰	5 ¹⁰	10 ¹⁰						
WATERBODIES:								
Flowing streams or ponds	25					35 ¹¹	35 ¹¹	300
Lakes or reservoirs	50	100		400		35 ¹¹	35 ¹¹	300
Wetlands or drainage channels ¹²						35 ¹¹	35 ¹¹	300
MISCELLANEOUS:								
Inhabitable residences, other inhabitable structures, or commercial buildings	10 ¹³			1000 ^{14,15,16}	1000 ^{13,15}	200	750 ¹⁷	300
Public use areas (not including roads or highways)				Anaerobic lagoons only ¹⁶				300
GHEX loop boreholes ¹⁸	50	100						
Roadside ditches	10							
Road rights-of-way				25 ²⁰				
Property lines	10 ¹⁹			25 ²⁰				
Suction water lines	50	100						
Water lines continually under pressure, foundation drains, or subsurface tiles ²¹	10							

¹PSDS (private sewage disposal system) is defined in 567—subrule 69.1(2). For the purposes of this table, “onsite treatment system” includes any wastewater treatment system not included in the definition of a PSDS (i.e., provides treatment or disposal of domestic sewage from more than four dwelling units or 16 or more individuals on a continuing basis) that is utilizing wastewater treatment technologies described in 567—Chapter 69 to treat domestic waste. Closed portion refers to the part of a treatment system that is fully contained and does not allow effluent or pretreated effluent to enter soil or groundwater (e.g., septic tank or impervious vault toilet). Open portion refers to the part of a treatment system that allows effluent or pretreated effluent to discharge into soil or groundwater for treatment or disposal (e.g., soil absorption system or unlined ISSF system). These SDs also apply to onsite treatment systems that are not considered privately owned.

²The SDs for building sewer service lines and laterals shall be considered minimum distances when constructing sewer lines, and shall be increased where possible to provide better protection. “Water main” and “standard sanitary sewer” are the type of materials or pipe used to construct the specified type of sewer, in accordance with 567—subrule 43.3(2) and Section 2.4 of the IWFDs.

³For the purposes of this table, “wastewater treatment works” includes lagoons as specified in superscript 4 and mechanical treatment works as specified in superscript 5. When the SDs for wastewater treatment systems and structures other than wells cannot be maintained for the expansion, upgrading, or replacement of existing facilities, the SDs shall be maintained at no less than 90 percent of the existing distance on the site, providing no data is available indicating that a problem has existed or will be created. The wastewater treatment works SDs shall not apply to control buildings, including but not limited to laboratories, offices, and toilet or shower rooms.

⁴The term “lagoons” includes aerated lagoon systems, advanced aerated lagoon systems, and waste stabilization lagoons, as defined in 567—subrule 81.1(1), and holding ponds, equalization basins, and sludge digestion or holding tanks, as described in the IWFDs. The term does not include lagoons used to dispose of water treatment plant wastes and anaerobic lagoons used for animal wastes (as noted in superscript 8). The SD from lagoons shall be measured from the water surface.

⁵The term “mechanical” includes activated sludge systems and fixed film biological treatment systems, as defined in 567—subrule 81.1(1), and any other wastewater disposal system that is not a PSDS, an onsite treatment system, or a lagoon. The mechanical wastewater treatment plant SDs are recommended for pumping stations at sites remote from new or expanded wastewater treatment facilities. All pumping stations shall be off the traffic ways of streets and alleys.

⁶The wetted disposal area is the land and area that is normally wetted by wastewater application. The wetted disposal area shall be established at least 50 feet inside the property line on all sides of the land application site. Distances may be reduced depending upon the extent of pretreatment and operational techniques.

⁷Deep and shallow wells are defined in 567—subrule 40.2(1).

⁸The SD between a private well and an anaerobic lagoon, earthen manure slurry storage basin, earthen manure storage basin, or runoff control basin shall be 1,000 feet. If an applicant for a private well construction permit demonstrates through percolation testing that the seepage loss through the lagoon or basin does not exceed 1/16 inch/day (0.0625 inch/day), the SD shall be 400 feet. The percolation test shall meet the requirements of ASTM D1587/D1587M-15 and 567—subrule 65.15(11).

⁹The SD between an existing, nonpotable, deep or shallow private well and an industrial treatment works may be reduced from 400 feet to 200 feet to accommodate the expansion of an existing industrial treatment works, provided the well and the treatment works share the same ownership.

¹⁰Required distance between a new PSDS and an existing other type of PSDS.

¹¹If sewage sludge or septage is land applied within 200 feet upgradient of a stream, lake, sinkhole, or tile line surface intake, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application unless otherwise approved by the department.

¹²Includes drainage channels that may have a direct connection to the groundwater table or a surface water.

¹³If an onsite treatment system (as described in superscript 1) has a design AWW flow of greater than 1,500 gpd and less than or equal to 5,000 gpd, the SD between an inhabitable residence, other inhabitable structure, or commercial building and the onsite treatment system shall be 100 feet.

¹⁴The SDs between an inhabitable residence, other inhabitable structure, or commercial building and the types of lagoons specified in this superscript shall apply as indicated. If a flow equalization basin is covered and at a site that is remote from new or expanded wastewater treatment facilities, the SD may be reduced to 300 feet at the department’s discretion. If the top of a remote flow equalization basin is underneath the surface of the earth, the 1,000-foot SD is recommended but not required, and the minimum SD is 100 feet. If a wastewater treatment lagoon is used solely for the retention or storage of the industrial waste from a boiler or cooling tower blow down facility and its sole use is filed with the county recorder for abstract of title purposes, the 1,000-foot distance is recommended but not required, and the minimum SD is 100 feet.

¹⁵If the inhabitable structure or commercial building is the property of the owner of the proposed lagoon or mechanical treatment facility, or there is written agreement with the owner of the building, the 1,000-foot distance shall not apply. Any such written agreement shall be submitted to the department and filed with the county recorder for abstract of title purposes, and a copy submitted to the department.

¹⁶See 60.2(2) “d” for specific anaerobic lagoon SDs.

¹⁷Septage shall not be applied within 750 feet of an occupied residence, except for the residence of the owner of the septic tank that was pumped or the residence of the licensed commercial septic tank cleaner.

¹⁸GHEX loop boreholes are defined in 567—subrule 49.2(1).

¹⁹The 10-foot distance between a PSDS and property lines applies unless a mutual easement is signed and recorded by both parties.

²⁰An SD of at least 300 feet between a wastewater treatment works and property lines or rights-of-way is recommended where treatment works may be expanded in the future.

²¹“Foundation drain” is defined in 567—subrule 69.1(2).

d. For anaerobic lagoons used in connection with industrial wastewater treatment or pretreatment, the following SDs shall apply between the anaerobic lagoon and the nearest inhabitable residence, other inhabitable structure, or commercial building not owned by the owner of the lagoon, or from a public use area other than a public road. These SDs do not apply to controlled discharge or aerated facultative lagoon systems.

- (1) Where the average rated flow is 100,000 gpd or less, the SD shall be at least 1,250 feet.
- (2) Where the average rated flow is greater than 100,000 gpd, the SD shall be at least 1,875 feet.
- (3) A person may build or expand an anaerobic lagoon closer to an inhabitable residence, other inhabitable structure, or commercial building not owned by the owner of the anaerobic lagoon, or to a public use area other than a public road, if the affected landowners sign a written agreement with the anaerobic lagoon owner to waive the SDs under such terms the parties negotiate. Any such agreement shall be submitted to the department and filed with the county recorder for abstract of title purposes.

(4) When the SDs in this subparagraph cannot be maintained for the expansion, upgrade, or replacement of existing anaerobic lagoon facilities, the SD may be reduced to 1,000 feet provided all of the following criteria are met:

1. The anaerobic lagoon will be completely covered and provided with approved off gas treatment throughout its entire operation life;
2. An operation and maintenance manual shall be prepared and submitted to the department in accordance with the IWFDS; and
3. No data are available indicating that a problem has existed or will be created.

60.2(3) *Construction permit applications—general.*

a. General. All applications for a construction permit required under this rule shall be made in accordance with the requirements in the IWFDS and on forms provided by the department. The applicant will be promptly notified if the application is incomplete or improperly filled out, and an application will not be reviewed until it is complete. A construction permit will be denied when the application does not meet all requirements for permit issuance. For a system with permits conditioned by limitations on additional loads under 60.2(4), construction permit applications must be accompanied by an accounting of connections and additional loading since the time the initial conditioned permit was issued.

b. Submission date. Applications for a construction permit must be submitted to the director at least 120 days in advance of the construction start date.

c. Site surveys.

(1) For new or expanded wastewater treatment facilities, an application for a site survey must be submitted by the applicant's engineer in advance of a full application for construction permit. An applicant should allow 60 days from the submission date of the site survey application for preliminary approvals.

(2) A site survey application must include the following minimum information:

1. A preliminary engineering report or a cover letter that contains a brief description of the proposed treatment process and assurance that the project is in conformance with the long-range planning of the area.
2. The general information, treatment project site selection, and treatment project design data portions of the construction permit application forms, as provided by the department.

(3) If a site survey application is incomplete, it will be returned to the engineer for completion. When a site survey application is complete, it will be reviewed as follows:

1. If the data submitted indicates on its face that the site would be unsuitable for its intended purpose, a letter of rejection will be sent to the applicant and the engineer. Clarifications and additional data may be requested of the applicant and the engineer.

2. If the data submitted indicates on its face that the site may be suitable, a site survey will be conducted by department staff.

d. Fee. A single construction permit application fee of \$100 as specified in Iowa Code section 455B.197(2) is due at the time of construction permit application submission.

e. Director action. The director shall act upon the application within 60 days of receipt of a complete application by either issuing a construction permit or denying the construction permit in writing unless a longer review period is necessary and the applicant is so notified in writing.

f. Modification after construction permit issuance. Applicants seeking a modification to plans and specifications after having been issued a construction permit shall submit an addendum to plans and specifications, a change order, or revised plans and specifications, along with the reasons for the proposed changes, to the department. A supplemental written permit or approval will be issued when the changes submitted by the applicant meet department requirements. Construction shall not proceed until such changes have been approved.

60.2(4) *Sanitary sewer extension construction permit applications.* Applications for sanitary sewer extension construction permits shall conform to the IWFDS. If a sanitary sewer extension construction permit application does not provide sufficient information to grant or deny a sewer system construction permit, additional information may be requested and evaluated. Sanitary sewer extension approval shall be subject to the following:

a. A sanitary sewer extension construction permit may be denied if, at the time of application, the treatment facility treating wastewater from the proposed sewer is not in substantial compliance with its operating permit or if the treatment facility receives wastes in volumes or quantities that exceed its design capacity and interfere with its operation or performance. If the applicant is operating under a compliance schedule that is being adhered to and that will lead to resolution of the substantial compliance issues, or if the applicant can demonstrate that the problem has been identified, the planning completed, and corrective measures initiated, then the construction permit may be granted.

b. A sanitary sewer extension construction permit may be denied if bypassing has occurred at the treatment facility, except when any of the following conditions are being met:

(1) The bypassing is due to a combined sewer system, and the facility is in compliance with a department-approved long-term CSO control plan;

(2) The bypassing occurs as a result of a storm with an intensity or duration greater than that of a storm with a return period of five years, according to the NOAA Atlas 14 Point Precipitation Frequency Estimates; or

(3) The department determines that timely actions are being taken to eliminate the bypassing.

c. A sanitary sewer extension construction permit may be denied if an existing downstream sewer is or will be overloaded or surcharged, resulting in bypassing, flooded basements, or overflowing manholes, unless:

(1) The bypassing or flooding is the result of a precipitation event with an intensity or duration greater than that of a storm with a return period of two years, according to the NOAA Atlas 14 Point Precipitation Frequency Estimates; or

(2) The system is under full-scale facility planning and the applicant provides a schedule that is approved by the department for rehabilitating the system to the extent necessary to handle the additional loadings.

60.2(5) *Application review.*

a. Review of construction permit applications shall be based on the criteria listed in 60.2(2)“*b*” and on the Iowa Antidegradation Implementation Procedure, incorporated by reference in 60.7(2)“*d*”(4). In any conflict between the criteria, the IWFDS shall prevail.

b. *IWFDS waivers.* Requests for waivers from the IWFDS shall be submitted and reviewed in accordance with 561—Chapter 10.

60.2(6) *Commencing construction.* Notwithstanding the 120-day requirement in 60.2(3)“*b*,” construction of the approved system may commence immediately after the issuance of a construction permit.

60.2(7) *Expiration.* The construction permit shall expire if construction thereunder is not commenced within one year of the date of issuance thereof. The director may grant an extension of time to commence construction if it is necessary or justified, upon showing of such necessity or justification to the director.

60.2(8) *Modification or revocation.* The director may modify or revoke a construction permit for cause, including but not limited to the following:

a. Failure to construct said wastewater DS or part thereof in accordance with the approved plans and specifications;

b. Violation of any term or condition of the permit;

c. Obtaining a permit by misrepresentation of facts or failure to disclose fully all material facts; or

d. Any change during construction that requires material changes in the approved plans and specifications.

60.2(9) *Certification of completion.* Within 30 days after completion of construction, installation or modification of any wastewater DS or part thereof or extension or addition thereto, the construction permit

holder shall submit a certification by a registered professional engineer that the project was completed in accordance with the approved plans and specifications.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.3(455B) Operation permits.

60.3(1) *Operation permit requirement.* Except as otherwise provided in this subrule, in 567—Chapter 65, and in 567—Chapter 69, no person shall operate any wastewater DS or part thereof without, or contrary to any condition of, an operation permit issued by the director. An operation permit is not required for the following:

- a. A PSDS that does not discharge into, or have the potential to reach, a designated water of the state or subsurface drainage tile (Note: PSDSs under this exemption are regulated under 567—Chapter 69).
- b. A semipublic sewage DS, the construction of which has been approved by the department and that does not discharge into a water of the state.
- c. A pretreatment system, the effluent of which is to be discharged directly to another DS for final treatment and disposal.
- d. A discharge from a geothermal heat pump that does not reach a navigable water.
- e. Water well construction and well services related discharge that does not reach a WOTUS.
- f. Discharges from the application of biological pesticides and chemical pesticides where the discharge does not reach a WOTUS. Aquatic pesticides may be applied to any WOTUS in accordance with this chapter and NPDES General Permit No. 7, “Pesticide General Permit (PGP) for Point Source Discharges to Waters of the United States From the Application of Pesticides.”
- g. Agricultural stormwater discharges. This exclusion applies only to the operation permit requirement set forth in this rule and does not alter other requirements of law, including but not limited to any applicable requirements of Iowa Code chapters 459 and 459A.
- h. Dewatering discharge from the installation, repair, or maintenance of agricultural drainage systems that does not reach a water of the state. This activity is not considered operation of a wastewater DS.
- i. A wastewater discharge from a water treatment plant that does not reach a WOTUS.

60.3(2) *Applications.*

- a. *Individual permit applications.*
 - (1) Application Forms. Applications for operation permits required under this paragraph shall be made on forms provided by the department.
 - (2) Application due dates.
 1. Applications for an individual permit for a new discharge of stormwater associated with construction activity as defined in 40 CFR §122.26(b)(14) under “stormwater discharge associated with industrial activity” must be submitted at least 60 days before the date on which construction is to commence.
 2. The due date for an application for a new discharge of wastewater is 180 days prior to the date the operation is scheduled to begin unless a shorter period is approved by the director.
 3. The due date for a renewal application is 180 days prior to the expiration date of the current permit. For a POTW, permission to submit an application at a later date may be granted by the director.
 - (3) Application completeness.
 1. A permit application is complete and approvable when all necessary questions on the application have been completed and the application is signed pursuant to this subrule, and when all applicable portions of the application, including the application fee, treatment agreement forms, and required attachments, have been submitted. The director may require the submission of an antidegradation alternatives analysis or other additional information deemed necessary to evaluate the application.
 2. Incomplete applications may be returned to the applicant for completion. Authorization to discharge will be suspended if a complete application is not submitted to the department before the expiration date of the current permit. In the case of new applications, no discharge will be allowed until an operation permit is issued. In the case of existing discharges, if a permit application is incomplete or has not been submitted, the department shall notify the applicant of a violation of this rule.

3. If a permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, the permittee shall promptly submit such facts or information.

(4) Application receipt. Upon completion of a tentative determination with regard to a permit application as described in 60.5(1), the director shall issue an operation permit for applications filed pursuant to this subrule within 90 days of the receipt of a complete application unless the application is for an NPDES permit or unless a longer period of time is necessary and the applicant is notified.

b. *GP applications.* A Notice of Intent (NOI) for coverage under a GP shall be completed on forms provided by the department and in accordance with 60.6(1). An NOI must be submitted for any of the following:

- (1) Stormwater discharge associated with industrial activity;
- (2) Stormwater discharge associated with small construction activity;
- (3) PSDSs that discharge to a WOTUS;
- (4) Discharges, except a stormwater only discharge, from a mining or processing facility;
- (5) Discharges from hydrostatic testing, tank ballasting and water lines, if required to be submitted by GP No. 8; or
- (6) Discharges from dewatering or residential geothermal systems, if required to be submitted by GP No. 9.

c. *Application fees.* Required fees shall be submitted with all permit applications pursuant to Iowa Code section 455B.197(3).

d. *Signatories of permit applications.* Permit applications for operation and NPDES permits shall be signed in accordance with 40 CFR §122.22.

60.3(3) Indirect discharger requirements.

a. *Information requirement.* The director may require an indirect discharger to submit information similar to that required in an application for an operation permit, but no operation permit is required for such discharge. This subrule does not apply to indirect dischargers that discharge to POTWs with department-approved pretreatment programs.

b. *Treatment agreement (TA).* A POTW intending to accept waste from a SIU as defined in 40 CFR §403.3(v) must submit a TA that:

- (1) Is on the TA form provided by the department;
- (2) Identifies and limits the monthly average and daily maximum flows and identifies and limits all other pollutants or pollutant parameters necessary to ensure that the discharge will be in accordance with the applicable requirements in 567—Chapter 62; and
- (3) Is signed and dated by the SIU and the owner of the POTW accepting the wastewater.

c. *TA submittal timelines.* A POTW receiving waste from an existing or proposed SIU shall submit a complete TA form to the department in accordance with the following time lines:

(1) For an existing SIU with an existing TA, 60 days in advance of a proposed expansion, production increase or process modification that may result in discharges of sewage, industrial waste, or other waste in excess of the discharge stated in the existing TA.

(2) For an indirect discharger that would become a SIU as a result of a proposed expansion, production increase or process modification, 60 days in advance of the proposed expansion, production increase or process modification.

(3) For a new indirect discharger that will qualify as a SIU, 180 days in advance of a proposed discharge.

d. *Construction and operation permit applications—TA submittal.*

(1) A construction permit application for the construction or modification of a POTW must include current TA forms for each SIU discharging to the POTW. These TAs will be used in determining the design basis of the new or upgraded system.

(2) An operation permit application from a POTW must include information and current TA forms for each SIU discharging to the POTW, and information on any Non-Significant Categorical Industrial User discharging to the POTW.

60.3(4) *Effective period.* NPDES permits may be granted for any period of time not to exceed five years. All other operation permits may be granted for an appropriate period of time as determined by the director, based on the type of wastewater DS being permitted. GPs will be issued for a period not to exceed five years. Each permit to be renewed shall be subject to the provisions of all department rules in effect at the time of the renewal.

60.3(5) *Permit conditions.* Operation permits shall contain conditions deemed necessary by the director to ensure compliance with all applicable department rules, including monitoring and reporting conditions, to protect the public health and beneficial uses of waters of the state, and to prevent water pollution from waste storage or disposal operations.

60.3(6) *Modification or termination.* The director may amend, revoke and reissue, or terminate in whole or in part any permit for cause, either at the request of any interested person (including the permittee) or upon the director's initiative, according to the provisions of this subrule.

a. GP. The director may revoke and reissue or terminate in whole or in part any GP or coverage under a GP for cause. A waiver or amendment of the terms and conditions of a GP shall not be granted. If a waiver or amendment of a GP is desired, the permittee must apply for an individual permit following the procedures in 60.3(2) "a."

b. Individual permit. All requests to amend, revoke and reissue, or terminate an individual permit shall be in writing and contain information or reasons supporting the request.

(1) A permittee shall furnish to the director, within a reasonable time, any information that the director may request to determine whether cause exists for amending, revoking and reissuing, or terminating a permit, including a new permit application.

(2) Required amendment fees shall be submitted in accordance with 60.14(3).

(3) The filing of a request by an interested person for an amendment, revocation and reissuance, or termination does not stay any permit condition.

c. Cause. Cause under this subrule includes but is not limited to the following:

(1) Violation of any term or condition of the permit.

(2) Obtaining a permit by misrepresentation of fact or failure to disclose fully all material facts.

(3) A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

(4) Failure to submit records and information the director requires, both generally and as a condition of the permit, in order to ensure compliance with the discharge conditions specified in the permit.

(5) Failure or refusal of an NPDES permittee to carry out the requirements of 60.7(7) "f."

(6) Failure to provide all the required application materials or appropriate fees.

(7) Causes listed in 40 CFR §§122.62 and 122.64.

d. Individual permit compliance schedule amendments.

(1) A request to amend an interim date in a compliance schedule shall be made at least 30 days prior to the next scheduled date that the permittee contends it is unable to meet. The request shall include proposed changes to the existing compliance schedule and documentation supporting the need for an extension.

(2) A request to amend a final date in a compliance schedule shall be made at least 120 days prior to the final compliance date. An extension of the final date may be granted by the department for cause, including unusually adverse weather conditions, equipment shortages, labor strikes, federal grant regulation requirements, or any other extenuating circumstances beyond the control of the requesting party. Cause does not include economic hardship, profit reduction, or failure to proceed in a timely manner.

e. Reduction of individual permit minimum monitoring requirements. The minimum monitoring requirements in an existing or reissued individual permit as established in 567—Chapter 63 may be modified or reduced at the director's discretion or when requested by the permittee.

(1) A request to modify or reduce the minimum monitoring requirements in an existing individual permit is considered a waiver request. A request shall include a written description of the proposed modification or reduction, monitoring results that are frequent enough to reflect variations in wastewater characteristics over a period of time and are consistent in results from sample to sample, and a completed Petition for Waiver form, available on the department's website.

(2) Any request to modify or reduce minimum monitoring requirements must adequately justify that the modified or reduced monitoring will accurately reflect actual wastewater characteristics and will not adversely impact facility operations.

(3) The department will evaluate a request to modify or reduce the minimum monitoring requirements in an existing permit based upon whether or not less frequent sample results would accurately reflect actual wastewater characteristics and whether operational control could be maintained.

(4) All reductions or modifications of monitoring incorporated into an individual operation or NPDES permit by amendment or upon reissuance are only effective until the expiration date of that permit.

f. Requests to amend, revoke and reissue, or terminate.

(1) Individual permit requests.

1. If the director tentatively decides to amend or revoke and reissue an individual permit, a draft permit shall be prepared according to 60.5(1)“a.” When an individual permit is amended under this subrule, only those conditions to be amended shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the permit. If an amendment falls under the definition of “minor amendment,” the individual permit may be amended without a draft permit or PN.

2. If the director decides to terminate an individual permit, a termination decision shall be prepared and transmitted to the permittee. The permittee will have 60 days to appeal the termination.

(2) GP requests. If the director tentatively decides to revoke and reissue or terminate a GP, a draft reissuance or termination will proceed in accordance with Iowa Code sections 455B.103A and 455B.173.

(3) When an individual or general permit is revoked and reissued under this subrule, the entire permit is reopened just as if the permit had expired and was being reissued.

(4) During any amendment, revocation and reissuance, or termination proceeding, the permittee or permittees shall comply with all conditions of the existing permit until a new final permit is reissued or the existing permit is terminated.

(5) If the director decides the request is not justified, the director shall deny the request and send the requester a brief written response giving a reason for the decision. Denials of requests for permit amendment, revocation and reissuance, or termination are not subject to PN, comment, hearings, or appeals.

60.3(7) *Prohibitions on permit issuance.* 40 CFR §122.4 is adopted by reference.

60.3(8) *Public access to NPDES information.* Department records connected with NPDES permits are available for public inspection and copying to the extent provided in 567—Chapter 2.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.4(455B) Issuance of NPDES permits.

60.4(1) *Individual permit.* An individual NPDES permit is required when there is a discharge of a pollutant from any point source into navigable waters. An NPDES permit is not required for the discharges listed in 40 CFR §122.3.

60.4(2) *General permits (GPs).*

a. The director may issue GPs consistent with this chapter to regulate one or more categories or subcategories of discharges, if the sources within each category or subcategory meet the criteria in 40 CFR §122.28(a)(2).

b. Each GP issued by the department must be adopted as an administrative rule in accordance with Iowa Code chapter 17A. Each proposed permit will:

(1) Be accompanied by a rationale setting forth the principal facts and methodologies considered during permit development,

(2) Correspond to existing geographic or political boundaries, and

(3) Be identified in rule 567—60.13(455B).

c. If an NPDES permit is required for an activity covered by a GP, the applicant may seek either GP coverage or an individual permit as provided in this chapter.

60.4(3) *Effect of a permit.* 40 CFR §122.5 is adopted by reference. Compliance with a permit during its term constitutes compliance, for purposes of enforcement, with equivalent limitations and standards set out in 567—Chapters 61 and 62.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.5(455B) Notice and public participation in the individual permit process.

60.5(1) *Formulation of tentative determination.* The department shall make a tentative determination to issue or deny an operation or NPDES permit for the discharge described in a permit application in advance of the PN (described in 60.5(2)). If the tentative determination is to:

a. Issue an NPDES permit, the department shall prepare a permit rationale pursuant to 60.5(3) and a draft permit. The draft permit shall include:

(1) Effluent limitations identified pursuant to 60.7(2) and 60.7(3) for those pollutants proposed to be limited;

(2) If necessary, a proposed compliance schedule, pursuant to 60.7(4) and 60.7(5) that includes interim dates and requirements for meeting the effluent limitations and other permit conditions; and

(3) Any other special conditions (other than those required in 60.7(7)) that will have a significant impact upon the discharge described in the permit application.

b. Deny an NPDES permit, the department shall prepare a notice to deny the permit application and place it on PN as described in 60.5(2).

c. Issue an operation permit (non-NPDES permit), the department shall prepare a final permit and transmit it to the applicant. The applicant will have 60 days to appeal the final operation permit.

d. Deny an operation permit (non-NPDES permit), no PN is required. The department shall send written notice of the denial to the applicant. The applicant will have 60 days to appeal the denial.

60.5(2) *Public notice (PN) for individual NPDES permits.*

a. Prior to the issuance of an NPDES permit, a major NPDES permit amendment, or the denial of a permit application for an NPDES permit, a PN shall be circulated in a manner designed to inform interested and potentially interested persons of the proposed discharge and of the tentative determination to issue or deny an NPDES permit for the proposed discharge.

(1) The PN shall be transmitted by the department to the persons noted in 40 CFR §124.10(c)(1).

(2) The PN shall be transmitted by the department to any person upon request. Any person or group may request to receive copies of any PNs concerning the tentative determinations with respect to the permit applications within the state or within a certain geographical area.

(3) The department shall periodically notify the public of the opportunity to receive PNs. The director may update the PN distribution list from time to time by requesting written indication of continued interest from those listed. The director may delete from the list the name of any person or group who fails to respond to such a request.

b. The director may publish all notices of activities described in 60.5(2)“a” to the department’s website. If this option is selected for a draft permit, the director must post the draft permit and permit rationale on the website for the duration of the public comment period.

c. The department shall provide not less than 30 days following the PN date during which time interested persons may submit their written views on the tentative determinations with respect to the permit application and request a public hearing pursuant to 60.5(4). Written comments may be submitted by paper or electronic means. All pertinent comments submitted during the 30-day comment period shall be retained by the department and considered by the director in the formulation of the final determinations with respect to the permit application. The comment period may be extended at the department’s discretion. Pertinent and significant comments received during either the original comment period or an extended comment period shall be responded to in a responsiveness summary pursuant to 60.5(5).

d. A PN of a draft NPDES permit, a major permit amendment, or the denial of a permit application for an NPDES permit shall contain:

(1) The name, email address, and telephone number of the permit writer.

(2) The name and address of the applicant.

(3) A brief description of the applicants’ activities or operations that result in the discharge described in the permit application.

(4) The name of the waterway to which each discharge of the applicant is made.

(5) A statement of the department’s tentative determination to issue, amend, or deny an NPDES permit for the discharge or discharges described in the permit application.

(6) A brief description of the procedures for the formulation of final determinations, including the 30-day comment period required by 60.5(2)“c,” procedures for requesting a public hearing and any other means by which interested persons may influence or comment upon those determinations.

(7) The address, telephone number, email address, and website of places at which interested persons may obtain further information and request copies of, or inspect and copy the tentative determination, permit rationale, and any associated documents.

e. No PN is required for a minor permit amendment.

f. No PN is required when a request for a permit amendment or permit termination is denied. The department shall send written notice of the denial to the requester and the permittee only. No PN is required if an applicant withdraws a permit application.

60.5(3) *Permit rationales and notices of intent to issue or deny.*

a. When the department has made a determination to issue or deny an NPDES or operation permit as described in 60.5(1), it shall prepare and send the following information, specific to each determination.

(1) NPDES permit issuance. For a determination to issue an NPDES permit, the department shall prepare and, upon request, shall send to any person a permit rationale with respect to the application described in the PN. Permit rationales shall include at least the following information:

1. For each discharge described in the permit application, a detailed description of the discharge location and a quantitative description of the discharge.

2. A brief citation, including a brief identification of the uses for which the receiving waters have been classified, of the WQS applicable to the receiving waters, and of the effluent standards and limitations applicable to the proposed discharge.

3. An explanation of the principal facts and the significant factual, legal, methodological, and policy questions considered in the preparation of the draft permit.

4. Any calculations or other necessary explanation of the derivation of effluent limitations.

(2) NPDES permit application denial. For a determination to deny an application for an NPDES permit, the department shall prepare and, upon request, shall send a notice to deny with respect to the application described in the PN. A notice to deny shall include:

1. The location of the discharge; and

2. A description of the reasons supporting the tentative decision to deny the permit application.

(3) Operation permit issuance. For a determination to issue an operation permit, the department shall prepare and issue a permit. The reasons supporting the decision to issue an operation permit can be sent to the operation permit applicant upon request.

(4) Operation permit application denial. For a determination to deny an application for an operation permit, the department shall prepare and send written notice of the denial to the applicant only. The written denial shall include a description of the reasons supporting the decision to deny the permit application.

b. Upon request, the department shall add the name of any person or group to a distribution list to receive copies of permit rationales and notices to deny and shall make copies of all permit rationales and notices to deny available.

60.5(4) *Public hearings on proposed NPDES permits.* The applicant, any affected state, the regional administrator, or any interested agency, person, or group of persons may request a public hearing with respect to a tentative determination to issue or deny an NPDES permit.

a. Public hearing requests shall:

(1) Clearly state issues and topics to be addressed at the hearing;

(2) Be filed with the director within the 30-day period prescribed in 60.5(2)“c”; and

(3) Indicate the interest of the party filing the request and the reasons why a hearing is warranted.

b. The director shall hold an informal and noncontested case hearing if there is a significant public interest in holding a hearing. Frivolous or insubstantial requests for hearing may be denied by the director. Instances of doubt should be resolved in favor of holding a hearing.

c. Any hearing held pursuant to this subrule shall be held in the geographical area of the proposed discharge when possible or other appropriate area at the director’s discretion. Web-based hearings may also be held at the director’s discretion. In addition, any hearing held pursuant to this subrule may, as appropriate, consider related groups of permit applications.

d. PN of any hearing held pursuant to this subrule shall be circulated at least as widely as was the notice of the tentative determination with respect to the permit application. Notice pursuant to this paragraph shall be made at least 30 days in advance of the hearing. Notice shall be transmitted to:

(1) All persons and government agencies that received a copy of the notice for the permit application; and

(2) Any person or group upon request.

e. The contents of a PN of any hearing held pursuant to this subrule shall include at least the following:

(1) The name, email address, and telephone number of the permit writer;

(2) The name and address of each applicant whose application will be considered at the hearing;

(3) The name of the waterbody to which each discharge is made;

(4) A brief reference to the PN issued for each NPDES application, including the date of notice;

(5) Information regarding the time and location for the hearing;

(6) The purpose of the hearing;

(7) A concise statement of the issues raised by the person or persons requesting the hearing;

(8) The address, telephone number, email address, and website where interested persons may obtain further information and request copies of, or inspect and copy the draft NPDES permit, permit rationale, and any associated documents;

(9) A brief description of the nature of the hearing, including the rules and procedures to be followed; and

(10) The final date for submission of comments regarding the tentative determination.

60.5(5) *Response to comments.* At the time a final NPDES permit is issued, the director shall respond to significant and pertinent comments in the form of a responsiveness summary. A copy of the responsiveness summary shall be sent to the permit applicant and made available on the department's website. The responsiveness summary shall:

a. Specify which provisions, if any, of the draft permit have been changed in the final permit decision and the reasons for the changes; and

b. Briefly describe and respond to all significant and pertinent comments on the draft permit raised during the public comment period provided for in the PN or during any hearing. Comments on a draft permit may be submitted by paper or electronic means or orally at a public hearing.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.6(455B) Completing a Notice of Intent (NOI) for coverage under a GP.

60.6(1) *Contents of a complete NOI.* An applicant proposing to conduct activities covered by a GP shall file a complete NOI by submitting to the department materials required in this subrule, as applicable. An NOI is not required for discharges authorized under GPs No. 6 or No. 7, for certain discharges under GP No. 8, or for certain discharges under GP No. 9.

a. *NOI Form.* Electronic NOI forms provided by the department must be completed in full and may be obtained on the department's website. Paper NOI forms, when provided, must be completed in full.

b. *GP fee.* The applicable GP fees are listed in 60.14(2).

c. *Public notice (PN) for GPs No. 1, No. 2, and No. 3.* Applicants for GPs No. 1, No. 2 and No. 3 must publish a PN in accordance with Iowa Code section 455B.103A. The newspaper notice shall, at the minimum, contain the following information:

(1) A brief description of the applicants' activities or operations that result in the discharge described in the NOI;

(2) The name of the waterway to which each discharge of the applicant is made and a short description of the location of each discharge of the applicant on the waterway; and

(3) The address, telephone number, email address, and website of places at which interested persons may obtain further information or inspect and copy the NOI.

60.6(2) *Authorization to discharge under a GP.*

a. Upon the submittal of an NOI in accordance with 60.3(2)"b" and 60.6(1), an applicant is authorized to discharge after the department has determined that the contents of the NOI satisfy the requirements of this chapter and of a GP. The department will notify the applicant of coverage under a GP.

If any of the items required for filing an NOI specified in 60.6(1) are missing, the department will consider the NOI incomplete and will notify the applicant of the incomplete items.

b. If the discharge described in the NOI does not meet the requirements of a GP, an NOI may be denied. The department will notify applicants of denial within 30 days.

c. Authorization to discharge is automatic only for the GPs that do not require an NOI under 60.3(2) “b,” provided the discharge is a covered activity and the permittee complies with all applicable permit requirements.

60.6(3) *GP suspension or revocation.* In addition to the causes for suspension or revocation listed in 60.3(6), the director may suspend or revoke coverage under a GP and require the applicant to apply for an individual NPDES permit in accordance with 60.3(2) “a.” The department will notify the affected discharger and establish a deadline, not longer than one year, for submitting an individual permit application. Coverage may be suspended or revoked for the following reasons:

a. The discharge would not comply with Iowa’s WQS pursuant to 567—Chapter 61,

b. The department finds that the activities associated with an NOI do not meet the conditions of the applicable GP, or

c. The department finds that any discharge covered under a GP is not consistent with the conditions specified in the applicable GP.

60.6(4) *Eligibility for individual NPDES permit holders.* A person holding an individual NPDES permit for an activity covered by a GP may apply for coverage under a GP by filing an NOI according to the procedures described in 60.3(2) “b” and this rule. In addition to these requirements, the permittee must submit a written request, with the NOI, to either terminate the individual NPDES permit or to amend the individual NPDES permit to remove the GP-covered activity.

a. Upon receipt of a complete NOI and request for individual NPDES permit termination or amendment, the applicant shall be authorized to discharge under the GP in accordance with 60.6(2). The applicant will receive notification from the department of coverage under the GP and of the termination or amendment of the individual permit.

b. Authorization to discharge under a GP that does not require an NOI will be automatic in accordance with 60.6(2) and shall commence upon completion of individual NPDES permit termination or amendment.

c. Individual NPDES permit amendments under this subrule shall follow the applicable PN procedures in rule 567—60.5(455B).

60.6(5) *Filing a Notice of Discontinuation (NOD).* A notice to discontinue discharge associated with an activity covered by a GP shall be made electronically or in writing to the department in accordance with the conditions established in each GP.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.7(455B) Terms and conditions of NPDES permits.

60.7(1) *Prohibited discharges.* No NPDES permit may authorize any of the discharges prohibited by rule 567—62.1(455B).

60.7(2) *Application of effluent and pretreatment standards, WQS, and other requirements.* Each NPDES permit shall include any of the following that is applicable:

a. An effluent limitation guideline; a standard of performance for a new source; or an effluent standard, effluent prohibition, or pretreatment standard promulgated by the administrator under Sections 301, 304, 306, or 307 of the CWA and adopted by reference in 567—Chapter 62.

b. A water quality-based effluent limitation established by the administrator pursuant to Section 302 of the CWA.

c. Prior to promulgation of applicable effluent and pretreatment standards under Sections 301, 302, 306, and 307 of the CWA, such conditions as the director determines are necessary to carry out the provisions of the CWA.

d. Any other limitation, including those necessary to:

(1) Meet or implement any applicable WQS, treatment or pretreatment standards, or compliance schedules established pursuant to any Iowa law or regulation;

(2) Meet any other federal law or regulation;

(3) Implement total maximum daily loads established pursuant to Section 303(d) of the CWA; or
 (4) Comply with the antidegradation policy requirements of 567—subrule 61.2(2) implemented according to the “Iowa Antidegradation Implementation Procedure,” effective February 17, 2010, hereby incorporated by reference, and available on the department’s website.

e. Limitations pursuant to 40 CFR §122.44(d)(1)(i), (ii), and (iii).

60.7(3) *Effluent limitations in NPDES permits.*

a. In the application of effluent standards and limitations, WQS, and other legally applicable requirements, pursuant to 60.7(2), the director shall, unless impracticable, specify average and maximum daily quantitative limitations for the level of pollutants in the authorized discharge in terms of weight (except pH, temperature, radiation, and any other pollutants not appropriately expressed by weight). The director may, in addition to the specification of daily quantitative limitations by weight, specify other limitations for the level of pollutants authorized in the discharge.

b. The manner in which effluent limitations are expressed will depend upon the nature of the discharge.

(1) Continuous discharges shall be limited by daily loading figures and, where appropriate, may be limited as to concentration or discharge rate (e.g., for toxic or highly variable continuous discharges).

(2) Noncontinuous discharges should be more particularly described and limited in accordance with 40 CFR §122.45(e).

60.7(4) *Compliance schedules in NPDES permits.* An NPDES permit may specify a compliance schedule in accordance with 40 CFR §122.47. Compliance shall be achieved as soon as possible, consistent with the guidelines and requirements of the CWA and with the provisions of Iowa Code sections 455B.173(2) “b” and 455B.173(3) “b.” If a permittee fails or refuses to comply with an interim or final requirement in an NPDES permit, such noncompliance shall constitute a violation of the permit for which the director may, pursuant to this chapter and 567—Chapter 7, modify, suspend or terminate the permit or take direct enforcement action. Compliance schedules shall not relieve the permittee of the duty to obtain a construction permit pursuant to this chapter.

60.7(5) *Compliance schedules in NPDES permits for disadvantaged communities (DCs).* If compliance with applicable federal or state regulations or an order of the department will result in substantial and widespread economic and social impact (SWESI) to ratepayers and an affected community, the director may establish in an NPDES permit a compliance schedule that will result in an improvement of water quality and reasonable progress toward complying with the applicable requirements but does not result in SWESI.

a. DC status. The director shall find that a regulated entity and the affected community are a DC according to Iowa Code section 455B.199B(2).

b. DC analysis (DCA). A regulated entity or affected community must submit a DCA to the director to be considered for disadvantaged status.

(1) When new requirements in a proposed or reissued NPDES permit may result in SWESI, a DCA may be submitted by:

1. A POTW or semipublic facility;
2. A wastewater DS for the treatment or disposal of domestic sewage that is not a semipublic DS or a PSDS and that is not owned by a city or sanitary sewer district; or
3. Any other owner of a wastewater DS that is not a PSDS and does not discharge industrial wastes.

(2) A DCA may be submitted prior to the issuance of an initial NPDES permit if the facility does not discharge industrial wastes and is not a new source or new discharger.

c. DCA contents.

(1) A DCA must contain all of the following:

1. Proposed TAPC as defined in 60.7(5) “d.”
2. The number of households or ratepayers in the affected community.
3. A description of the bond rating of the affected community over the last year, if available.
4. The user rates, as follows:

- For a municipality or other community, the current sewer rate ordinances, including the sewer rates of any industrial users;

- For a water treatment facility, the water rate schedules or tables; or
 - For any other entity, the monthly ratepayer charge for wastewater treatment.
5. An explanation of why the regulated entity or affected community believes that compliance with the proposed requirements will result in SWESI.
- (2) If a DCA is submitted by or for an entity other than a municipality, community, or water treatment facility, the DCA must also contain either:
1. For entities with more than ten households or ratepayers, the MHI or ratepayer income, as determined by an income survey conducted by the regulated entity; or
 2. For entities with ten or fewer households or ratepayers, an estimate of MHI or ratepayer income.
- d. *Definition of total annual project costs (TAPC).* “Total annual project costs” means the current costs of wastewater treatment in the community (if any) plus the future costs of proposed wastewater system improvements that will meet or exceed all applicable federal or state regulations or requirements of an order of the department. The TAPC shall include any current and proposed facility O&M costs and any existing and proposed system debt, as expressed in current and proposed sewer rates. The costs shall be amortized for a 30-year loan period at an interest rate equal to the current state revolving fund interest rate. Awarded grant funding must be subtracted from the TAPC.
- The TAPC formula is: $TAPC = [(Estimated\ costs\ to\ design\ and\ build\ proposed\ project - Awarded\ grant\ funding)\ amortized\ over\ 30\ years] + Current\ annual\ system\ budget,\ including\ O\&M\ and\ existing\ debt\ service + Future\ annual\ O\&M\ costs.$
- e. *DC matrix (DCM).* Upon receipt of a complete DCA, the director shall use the DCM to evaluate the disadvantaged status of an entity or community. A regulated entity or affected community shall be considered a DC if the point total derived in the DCM is equal to or greater than 12. The following data sources shall be used to derive the point total in the DCM:
- (1) The TAPC, the number of households or ratepayers in a community, and the bond rating of the community, as stated in the DCA;
 - (2) The MHI of either:
 1. The community, as found in the most recent American Community Survey or United States Census or as stated in an income survey conducted by the regulated entity or community; or
 2. The ratepayer group, as stated in an income survey conducted by the regulated entity; and
 - (3) The unemployment rate of the local county and of the state as found in the most recent Iowa Workforce Information Network unemployment data.
- f. *Ratio and determination.* The ratio of the TAPC per household or per ratepayer to MHI shall be calculated in the DCM as follows: the TAPC shall be divided by the number of households or ratepayers to obtain the costs per household or ratepayer, and the costs per household or ratepayer shall be divided by the MHI to obtain the ratio. If the ratio of compliance costs to MHI is:
- (1) Less than 1 percent, the entity or community is not considered disadvantaged.
 - (2) Greater than or equal to 2 percent, the entity or community is considered a DC.
 - (3) Greater than or equal to 1 percent and less than 2 percent, the director shall use the point total in the DCM to determine if the entity or community is disadvantaged.
- g. *DC compliance schedule—first part.* A compliance schedule established in an NPDES permit for a DC as a result of SWESI may contain one or two parts. The first part of a DC compliance schedule shall encompass one five-year NPDES permit cycle and require the permittee to submit an alternatives report, an alternatives implementation compliance plan (AICP), and annual progress reports.
- (1) Alternatives report. An alternatives report shall be submitted no later than two years after permit issuance and shall:
 1. Detail the alternative pollution control measures that will be investigated and contain an examination of all other appropriate measures that may achieve compliance with applicable federal or state regulations or an order of the department without creating SWESI;
 2. Describe which measures will be evaluated for feasibility and affordability during the next portion of the compliance schedule; and
 3. Include a plan for pursuing funding options, including grants and low-interest loans.

(2) Alternatives implementation compliance plan (AICP). An AICP shall be submitted no later than 4½ years after permit issuance and shall include:

1. The results of the investigation detailed in the alternatives report;
2. A description of any feasible and affordable alternative(s) that will be implemented;
3. A schedule of the time necessary to implement the alternative(s); and
4. An updated DCA.

h. DC compliance schedule—second part. If the entity or community continues to qualify as disadvantaged according to the DCM evaluation of the DCA submitted with the AICP, the entity or community may receive a second compliance schedule as specified in this subrule.

(1) AICP schedule. If the AICP proposes an implementation schedule, the proposed schedule shall be included in the community's NPDES permit.

(2) Future compliance plan (FCP). The submittal of an FCP will be necessary only if the AICP concludes that the DC cannot feasibly implement any alternatives and if the community is still disadvantaged according to the DCM evaluation of the DCA submitted with the AICP. An FCP shall be submitted no later than three years after permit issuance. A compliance schedule requiring an FCP shall also require annual progress reports, including an updated DCA. If a DCM evaluation determines that an entity or community is no longer disadvantaged based on the most recent DCA, the NPDES permit may be amended to change the compliance schedule. An FCP shall:

1. Detail how the DC will meet the applicable federal or state regulations or an order of the department and the period necessary to do so, and
2. Review the types of technology capable of treating the pollutant of concern and the costs of installing and operating each technology. All technically feasible alternatives shall be explored.

(3) Schedule extension. The second part of a DC compliance schedule may be extended at the director's discretion.

- i.* Compliance schedules issued in accordance with this subrule shall comply with 60.7(4).

60.7(6) Disadvantaged unsewered communities (DUCs). If compliance with applicable federal or state regulations or an order of the department will result in SWESI to the ratepayers of an unsewered community, the director may negotiate a compliance agreement that will result in an improvement of water quality and reasonable progress toward complying with the applicable regulations but does not result in SWESI.

a. DUC status. The director shall find that an unsewered community is a DUC according to Iowa Code section 455B.199B(3).

b. DUC analysis (DUCA).

(1) An unsewered community must submit a DUCA to the director to be considered for DUC status. Only unsewered communities may submit a DUCA under this subrule. For the purposes of this subrule, an unsewered community is defined as a grouping of ten or more residential houses with a density of one house or more per acre and with either no wastewater treatment or inadequate wastewater treatment. An entity defined in 60.1(2) as a PSDS may not submit a DUCA or qualify for a DUC compliance agreement under this subrule.

(2) An unsewered community may submit a DUCA to the director prior to the issuance of or amendment to an administrative order with requirements that could result in SWESI and that are based on applicable federal or state regulations or an order of the department.

c. DUCA contents. A DUCA must contain all of the following:

- (1) Proposed TAPC as defined in 60.7(6)“d”;
- (2) The number of households in the unsewered community and source of household information;
- (3) Total amount of any awarded grant funding;
- (4) MHI or ratepayer income information. If no MHI information is available for the unsewered community, the community should conduct a rate survey to determine the MHI; and
- (5) An explanation of why the unsewered community believes that compliance with the proposed requirements will result in SWESI.

d. Definition of total annual project costs (TAPC). “Total annual project costs” means the future costs of proposed wastewater system installation or improvements that will meet or exceed all applicable federal

or state regulations or requirements of an order of the department. The TAPC shall include the proposed facility O&M costs and the proposed debt of the system as expressed in the proposed sewer rates. The costs shall be amortized over a 30-year loan period at an interest rate equal to the current state revolving fund interest rate. Awarded grant funding must be subtracted from the TAPC.

The TAPC formula for an unsewered community is: $TAPC = [(Estimated\ costs\ to\ design\ and\ build\ proposed\ project - Awarded\ grant\ funding)\ amortized\ over\ 30\ years] + Future\ annual\ O\&M\ costs.$

e. DUC matrix (DUCM). Upon receipt of a complete DUCA, the director shall use the DUCM to evaluate the disadvantaged status of an unsewered community. An unsewered community shall be considered a DUC if the point total derived from the DUCM is equal to or greater than 10. The following data sources shall be used to derive the point total in the DUCM:

- (1) The TAPC and number of households in the unsewered community, as stated in the DUCA;
- (2) The MHI of the unsewered community as found in the most recent American Community Survey or United States Census or as stated in an income survey conducted by the unsewered community; and
- (3) The unemployment rate of the local county and of the state as found in the most recent Iowa Workforce Information Network unemployment data.

f. Ratio and determination. The director shall not require installation of a wastewater DS by an unsewered community if the director determines that such installation would create SWESI, in accordance with Iowa Code section 455B.199B.

(1) The ratio of TAPC per household to MHI shall be calculated in the DUCM as follows: the TAPC shall be divided by the number of households to obtain the costs per household, and the costs per household shall be divided by the MHI to obtain the ratio.

- (2) If the ratio of compliance costs to MHI is:
 1. Less than 1 percent, the unsewered community is not considered disadvantaged.
 2. Greater than or equal to 2 percent, the unsewered community is considered a DUC.
 3. Greater than or equal to 1 percent and less than 2 percent, the director shall use the point total in the DUCM to determine if the unsewered community is disadvantaged.

g. DUC compliance agreement. A compliance agreement negotiated with a DUC as a result of SWESI shall require the unsewered community to submit an alternatives report and an AICP.

(1) Alternatives report. An alternatives report shall be submitted no later than two years after a DUC determination and shall:

1. Detail the alternative pollution control measures that will be investigated and contain an examination of all other appropriate measures that may achieve compliance with the WQS without creating SWESI;
2. Describe which measures will be evaluated for feasibility and affordability after the report submittal; and
3. Include a plan for pursuing funding options, including grants and low-interest loans.

(2) Alternatives implementation compliance plan (AICP). An AICP shall be submitted no later than 4½ years after a DUC determination. An AICP shall include:

1. The results of the investigation detailed in the alternatives report,
2. A description of any feasible and affordable alternative(s) that will be implemented,
3. A schedule of the time necessary to implement the alternative(s), and
4. An updated DUCA.

(3) AICP schedule. If the AICP proposes an implementation schedule of one or more feasible alternatives, the proposed schedule shall be included in an administrative order between the department and the unsewered community. If the feasible alternative that will be implemented requires a construction, operation, or NPDES permit, the unsewered community shall comply with the rules regarding those permits in this chapter.

(4) Future compliance plan (FCP). The submittal of an FCP will be necessary only if the AICP concludes that the unsewered community cannot feasibly implement any alternatives and if the community is still disadvantaged according to the DUCM evaluation of the DUCA submitted with the AICP. An FCP shall be submitted no later than seven years after a DUC determination. An administrative order requiring an FCP shall also require the submittal of biennial progress reports containing an updated DUCA. If the

DUCM evaluation determines that an unsewered community is no longer disadvantaged based on the most recent DUCA, the order may be amended at the director's discretion. An FCP shall:

1. Detail how the unsewered community will meet the WQS and the period necessary to do so; and
2. Review the types of technology capable of treating the pollutant of concern and the costs of installing and operating each type of technology. All technically feasible alternatives shall be explored.

60.7(7) *Other terms and conditions of NPDES permits.* Each NPDES permit shall provide for and ensure all of the following:

a. That all discharges authorized by the NPDES permit shall be consistent with the terms and conditions of the permit.

b. That facility expansions, production increases, or process modifications that result in new or increased pollutant discharges will be reported by submission of a new permit application or, if such discharge does not violate effluent limitations specified in the NPDES permit, by submission to the director of notice of such new or increased discharges of pollutants.

c. That the discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by the permit shall constitute a violation of the terms and conditions of the permit.

d. That if the terms and conditions of a GP are no longer applicable to a discharge, the applicant shall apply for an individual NPDES permit.

e. That the permit may be amended, revoked and reissued, or terminated in whole or in part for the causes provided in 60.3(6) "c."

f. That the permittee allows for facility inspection and entry pursuant to 40 CFR §122.41(i), which is adopted by reference.

g. That, if the permit is for a discharge from a POTW, the permittee shall provide notice to the director:

(1) 180 days in advance of any new introduction of pollutants into the POTW from a new source if such source was discharging pollutants;

(2) 60 days in advance of any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of permit issuance; and

(3) Pursuant to 60.3(3) "c."

Such notice shall include information on the quality and quantity of effluent to be introduced into the POTW and any anticipated impact of such change on the quantity or quality of effluent to be discharged from the POTW.

h. That, if the permit is for a discharge from a POTW, the permittee shall require any industrial user to comply with the requirements of Sections 204(b), 307, and 308 of the CWA.

i. That the facility is properly operated and maintained pursuant to 40 CFR §122.41(e), which is adopted by reference.

j. That the permit will be modified upon the establishment of a toxic effluent standard or prohibition pursuant to 40 CFR §122.44(b)(1), which is adopted by reference.

k. That the permittee shall take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment.

l. That the need to halt or reduce the permitted activity is not a defense in an enforcement action pursuant to 40 CFR §122.41(c), which is adopted by reference.

60.7(8) *POTW compliance—plan of action (POA).* The owner of a POTW must prepare and implement a POA to achieve and maintain compliance with final effluent limitations in its NPDES permit as specified below:

a. The director shall notify a POTW owner of the POA requirement and of an opportunity to meet with department staff to discuss the plan requirements. The POTW owner shall submit the POA to the appropriate regional department field office within six months of such notice unless a longer time is needed and is authorized in writing by the director.

b. A POA must identify the deficiencies and needs of the system, describe the causes of such deficiencies or needs, propose specific measures and a schedule to correct the deficiencies or meet the needs, and discuss the method of financing the proposed improvements. A POA may include the submittal

of a DCA in accordance with 60.7(5) or may provide for a phased construction approach to meet interim and final limitations.

This rule is intended to implement Iowa Code chapter 455B, subchapter III, part 1 (Iowa Code sections 455B.171 through 455B.187 and 455B.199B).

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.8(455B) Reissuance of operation and NPDES permits.

60.8(1) *Individual operation and NPDES permit reissuance.* Any operation or NPDES permittee who wishes to continue to discharge after the expiration date of the permit shall file an application for reissuance pursuant to 60.3(2) “a.”

60.8(2) *Renewal of coverage under a GP.* A permittee authorized to discharge under a GP is subject to the permit terms until coverage is obtained under an individual permit or the permitted discharge has ceased and, if required, an NOD is submitted in accordance with the GP.

a. If a permittee continues the activity beyond the expiration date of a GP and the permit will be reissued, the conditions of the expired GP will remain in effect until the effective date of the reissued GP.

b. If a permittee continues the activity beyond the expiration date of a GP and the permit will not be reissued or renewed, the discharge must be permitted with an individual NPDES permit in accordance with 60.3(2).

60.8(3) *Continuation of expiring operation and NPDES permits.*

a. The conditions of an expired operation or NPDES permit will continue in force until the effective date of a new permit if:

(1) The permittee has submitted a timely and complete application under 60.3(2); and

(2) The department does not issue a new permit with an effective date on or before the expiration date of the previous permit.

b. Operation and NPDES permits continued under this subrule remain fully effective and enforceable.

c. If a permittee is not in compliance with the conditions of the expiring or continued permit, the department may choose to do any of the following:

(1) Initiate enforcement action on a permit that has been continued or reissued;

(2) Issue a notice of intent to deny a permit under 60.5(3);

(3) Reissue a permit with appropriate conditions in accordance with this subrule; or

(4) Take other actions authorized by this chapter.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.9(455B) Monitoring, recordkeeping and reporting by operation permit holders. Operation permit holders are subject to the applicable requirements and provisions specified in 567—Chapter 63 and those specified in the operation permit issued by the department.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.10(455B) Silvicultural activities. The following is adopted by reference: 40 CFR §122.27.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.11(455B) Stormwater discharges.

60.11(1) The following are adopted by reference: 40 CFR §§122.26, 122.32, 122.33, 122.34, and 122.35.

60.11(2) Small municipal separate storm sewer systems (MS4s).

a. The following municipal MS4s that are not qualified as medium or large MS4s, in accordance with 40 CFR §122.26, are considered regulated small MS4s:

(1) All MS4s located in urban areas with a population of at least 50,000 people as defined by the latest decennial census, and

(2) All MS4s located outside urbanized areas that serve 10,000 people or more where the average population density is 1,000 people/square mile or more.

b. *NPDES permit applications for small MS4s.* An NPDES permit application shall be submitted for any discharge from a regulated small MS4 designated under this subrule. The first permit application

submitted by a small MS4 shall demonstrate how the applicant will develop, implement, and enforce a stormwater management program designed to reduce the discharge of pollutants from the small MS4 to the maximum extent practicable, in order to protect water quality and to comply with the CWA. Renewal applications shall demonstrate how the existing stormwater management program is being implemented and enforced. An application shall:

- (1) Discuss the manner in which the permittee will or has addressed:
 1. Public education and outreach on stormwater impacts;
 2. Public involvement and participation;
 3. Illicit discharge detection and elimination;
 4. Construction site stormwater runoff control;
 5. Post construction stormwater management in new development and redevelopment; and
 6. Pollution prevention for municipal operations.
- (2) Include measurable goals that the applicant intends to meet and dates by which the goals will be accomplished.

c. Permit coverage waivers for small MS4s.

(1) Permit coverage for small MS4s located in urbanized areas that serve 1,000 people or more and fewer than 10,000 people may be waived if the following requirements are met:

1. Where the small MS4 discharges any pollutants of concern that have been identified as a cause of an impairment of any waterbody to which the MS4 discharges, the department has determined that stormwater controls are not needed based on a wasteload allocation that is part of an EPA-approved TMDL that addresses the pollutants of concern.

2. Where the small MS4 discharges any pollutants of concern to an unimpaired waterbody or to a waterbody for which a TMDL has not been approved, the department has determined that stormwater controls are not needed based on an analysis equivalent to a TMDL that determines sources and allocations for the pollutants of concern. The pollutants of concern are BOD, sediment or a parameter that addresses sediment, pathogens, or oil and grease.

3. The department has determined that future discharges from the small MS4 do not have the potential to result in exceedances of WQS, including impairments or other significant water quality impacts.

(2) Permit coverage for small MS4s located in urbanized areas that serve fewer than 1,000 people may be waived if the following requirements are met:

1. Where the small MS4 discharges any pollutants of concern that have been identified as a cause of an impairment of any waterbody to which the MS4 discharges, the department has determined that stormwater controls are not needed based on a wasteload allocation that is a part of an EPA-approved TMDL that addresses the pollutants of concern.

2. The system is not contributing substantially to the pollutant loadings of a physically interconnected MS4 that is regulated under this rule.

(3) Permit coverage for small MS4s located outside of urbanized areas that serve 10,000 people or more where the average population density is 1,000 people/square mile or more may be waived if the MS4 is not discharging pollutants that are the cause of an impairment of any waterbody to which the MS4 discharges.

(4) Should conditions under which a waiver was granted change, the waiver may be rescinded by the department and permit coverage may be required.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.12(455B) Transfer of title and owner or operator address change.

60.12(1) *Transfer.* If title to any DS or part thereof for which a permit has been issued under this chapter is transferred, the new owner or owners shall be subject to all terms and conditions of the permit. Whenever title to a DS or part thereof is changed, the department shall be notified in writing of such change within 30 days of the occurrence. No transfer of the authorization to discharge from the facility represented by the permit shall take place prior to notification of the department of the transfer of title.

60.12(2) *Address change.* Whenever the address of the owner is changed, the department shall be notified in writing within 30 days of the address change.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

Rules 567—60.3(455B) through 567—60.12(455B) are intended to implement Iowa Code section 455B.173.

567—60.13(455B) General permits (GPs) issued by the department. The following is a list of GPs adopted by the department through the Administrative Procedure Act, Iowa Code chapter 17A, and the term of each permit.

60.13(1) “Storm Water Discharge Associated with Industrial Activity,” NPDES General Permit No. 1, effective March 1, 2023, to February 29, 2028.

60.13(2) “Storm Water Discharge Associated with Industrial Activity for Construction Activities,” NPDES General Permit No. 2, effective March 1, 2023, to February 29, 2028.

60.13(3) “Storm Water Discharge Associated with Industrial Activity from Asphalt Plants, Concrete Batch Plants, Rock Crushing Plants, and Construction Sand and Gravel Facilities,” NPDES General Permit No. 3, effective March 1, 2023, to February 29, 2028.

60.13(4) “Discharge from Private Sewage Disposal Systems,” NPDES General Permit No. 4, effective March 1, 2023, to February 29, 2028.

60.13(5) “Discharge from Mining and Processing Facilities,” NPDES General Permit No. 5, effective July 1, 2023, to June 30, 2028.

60.13(6) “Discharge Associated with Well Construction Activities,” NPDES General Permit No. 6, effective July 1, 2023, to June 30, 2028.

60.13(7) “Pesticide General Permit (PGP) for Point Source Discharges to Waters of the United States from the Application of Pesticides,” NPDES General Permit No. 7, effective July 1, 2023, to June 30, 2028.

60.13(8) “Discharge from Hydrostatic Testing, Tank Ballasting and Water Lines,” NPDES General Permit No. 8, effective July 1, 2023, to June 30, 2028.

60.13(9) “Discharge from Dewatering and Residential Geothermal Systems,” NPDES General Permit No. 9, effective July 1, 2023, to June 30, 2028.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.14(455B) Fees.

60.14(1) *Fee types.*

a. Application and NOI fees.

(1) For individual nonstormwater NPDES and operation permits, an application fee must be submitted with the application as specified in this rule.

(2) For authorization under GPs Nos. 1, 2, 3 and 5, an applicant has the option of paying an annual permit fee or a multiyear permit fee when the NOI is submitted as specified in this rule.

(3) For MS4 permits and individual stormwater permits, a one-time, multiyear permit fee must be submitted at the time of application as specified in this rule.

(4) If a facility needs coverage under more than one NPDES or operation permit, fees for each permit must be submitted appropriately.

b. Annual fees. Certain individual nonstormwater facilities covered by NPDES and operation permits must submit annual fees on a yearly basis as specified in this rule.

c. Fees are nontransferable. Failure to submit the appropriate fee at the time of application renders the application incomplete, and the department shall suspend application processing until the fee is received. Failure to submit the appropriate annual fee may result in permit revocation or suspension as noted in 60.3(6).

60.14(2) *Fee payment.* Fees shall be paid by check, credit card, electronic payment, or money order made payable to the “Iowa Department of Natural Resources.” For facilities needing coverage under more than one permit (e.g., general, individual stormwater, individual nonstormwater), separate payments shall be made according to the fee schedule in this rule.

60.14(3) *Fee schedule.* The following fees have been adopted:

a. *GP fees.* No fees shall be assessed for coverage under GPs not listed in this paragraph. The following fees are applicable to the described GPs:

(1) Storm Water Discharges Associated with Industrial Activity, NPDES General Permit No. 1; Storm Water Discharge Associated with Industrial Activity for Construction Activities, NPDES General Permit No. 2; and Storm Water Discharge Associated with Industrial Activity from Asphalt Plants, Concrete Batch Plants, Rock Crushing Plants, and Construction Sand and Gravel Facilities, NPDES General Permit No. 3.

Annual permit fee	\$175 (per year)
or	
Five-year permit fee	\$700
Four-year permit fee	\$525
Three-year permit fee	\$350

All fees are to be submitted with the NOI.

(2) Discharge from Mining and Processing Facilities, NPDES General Permit No. 5.

Annual permit fee	\$125 (per year)
or	
Five-year permit fee	\$500
Four-year permit fee	\$400
Three-year permit fee	\$300

New facilities seeking GP No. 5 coverage shall submit fees with the NOI. Maximum coverage is for five years. Coverage may also be obtained for four years, three years, or one year as shown in the fee schedule above. Existing facilities shall submit annual fees by August 30 of every year unless a multiyear fee payment was received in an earlier year. In the event a facility is no longer eligible to be covered under GP No. 5, the remainder of the fees previously paid by the facility shall be applied toward its individual permit fees.

b. Individual NPDES and operation permit fees. The following fees are applicable for the described individual permits:

(1) For individual stormwater permits, the following fees are due at the time of application, in accordance with whether or not the discharge will reach an OIW identified in the “Iowa Antidegradation Implementation Procedure” (incorporated by reference in 60.7(2)“d”(4)), as follows:

1. Where the discharge will not reach an OIW: a five-year permit fee of \$1,250.
2. Where the discharge will reach an OIW: a two-year permit fee of \$500.

(2) For permits that authorize the discharge of only stormwater from MS4s and any allowable nonstormwater, a five-year permit fee of \$1,250 must accompany the application.

(3) For individual nonstormwater NPDES and operation permits, a single application fee of \$85 as established in Iowa Code section 455B.197 is due at the time of a new application, renewal application, or amendment application.

1. The \$1,250 fee in 60.14(3)“b”(1) and (2) is not required for individual nonstormwater permits that authorize stormwater discharges along with other wastewater discharges.

2. Before an approved amendment request submitted by a facility holding a nonstormwater NPDES or operation permit can be processed by the department, the \$85 fee must be submitted, except when an amendment is initiated by the director, when the requested amendment will correct an error in the permit, when the amendment is for a DC compliance schedule or the Iowa nutrient reduction strategy, or when there is a transfer of title or change in the address of the owner as noted in rule 567—60.12(455B).

(4) For individual nonstormwater NPDES and operation permits, the following annual fees as established in Iowa Code section 455B.197(3) are due by August 30 of each year:

1. Major municipal facility: \$1,275.
2. Minor municipal facility: \$210. For a city with a population of 250 or less, the maximum fee shall be \$210 regardless of how many individual nonstormwater NPDES permits the city holds.
3. Semipublic facility: \$340.
4. Major industrial facility: \$3,400.
5. Minor industrial facility: \$300.

- 6. Facilities that hold an operation permit: \$170.
- 7. Animal feeding operations covered by a nonstormwater NPDES permit: \$340.
- (5) For a municipal water treatment facility with an individual nonstormwater NPDES permit, no fees shall be assessed.

(6) For a new facility covered by an individual nonstormwater NPDES or operating permit, a prorated annual fee, calculated by taking the annual fee amount multiplied by the number of months remaining before the next annual fee due date divided by 12, is due 30 days after the new permit is issued.

60.14(4) Fee refunds.

a. Individual and general permit application, permit, and annual fees may be refunded, completely or in part, at the director's discretion. Permittees who wish to receive fee refunds should notify the department electronically or in writing. Fees may be refunded under various circumstances, including but not limited to:

- (1) Submission of a duplicate fee;
- (2) Overpayment of a fee;
- (3) A fee was submitted but is not required; or
- (4) The department returns an application to the applicant without decision.

b. Fees shall not be refunded under any of the following conditions:

- (1) If a permit or permit coverage is suspended, revoked, or modified, or if an activity is discontinued or ceased;
- (2) If a permit is amended; or
- (3) If a permit application is withdrawn by the applicant or denied by the department pursuant to 60.5(1).

This rule is intended to implement Iowa Code section 455B.197.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.15(455B) Nutrient reduction exchange. The department shall maintain a registry of nonpoint source nutrient reduction practices installed by permittees. Practices listed in the registry may be eligible for future regulatory incentives.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

567—60.16(455B) Validity of rules and applicability.

60.16(1) Validity. If any section, paragraph, sentence, clause, phrase or word of these rules, or any part thereof, be declared unconstitutional or invalid for any reason, the remainder of said rules shall not be affected thereby and shall remain in full force and effect.

60.16(2) Applicability. This chapter shall apply to all waste DSs treating or intending to treat sewage, industrial waste, or other waste except waste resulting from livestock or poultry operations. All livestock and poultry operations constituting animal feeding operations as defined in 567—Chapter 65 shall be governed by the requirements in 567—Chapter 65. However, the provisions of this chapter concerning NPDES permits that relate to notice and public participation, permit terms and conditions, permit reissuance, and monitoring, reporting and recordkeeping activities shall apply to animal feeding operations that are required to apply for and obtain an NPDES permit to the extent that such requirements are not inconsistent with 567—Chapter 65.

[ARC 9203C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 1.

[Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]

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¹ April 15, 2009, effective date of Item 2 of ARC 7625B delayed 70 days by the Administrative Rules Review Committee at its meeting held April 8, 2009; at its meeting held April 28, 2009, the Committee voted to lift the delay, effective April 29, 2009.

CHAPTER 61 WATER QUALITY STANDARDS

[Prior to 7/1/83, DEQ Ch 16]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter exempt from chapter rescission pursuant to Iowa Code section 17A.7

WATER QUALITY STANDARDS

567—61.1 Rescinded, effective August 31, 1977.

567—61.2(455B) General considerations.

61.2(1) Policy statement. It shall be the policy of the commission to protect and enhance the quality of all the waters of the state. In the furtherance of this policy it will attempt to prevent and abate the pollution of all waters to the fullest extent possible consistent with statutory and technological limitations. This policy shall apply to all point and nonpoint sources of pollution.

These water quality standards establish selected criteria for certain present and future designated uses of the surface waters of the state. The standards establish the areas where these uses are to be protected and provide minimum criteria for waterways having nondesignated uses as well. Many surface waters are designated for more than one use. In these cases the more stringent criteria shall govern for each parameter.

Certain of the criteria are in narrative form without numeric limitations. In applying such narrative standards, decisions will be based on the U.S. Environmental Protection Agency's methodology described in "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses," (1985) and on the rationale contained in "Quality Criteria for Water," published by the U.S. Environmental Protection Agency (1977), as updated by supplemental Section 304 (of the Act) Ambient Water Quality Criteria documents. To provide human health criteria for parameters not having numerical values listed in 61.3(3) Table 1, the required criteria will be based on the rationale contained in these EPA criteria documents. The human health criterion considered will be the value associated with the consumption of fish flesh and a risk factor of 10^{-5} for carcinogenic parameters. For noncarcinogenic parameters, the recommended EPA criterion will be selected. For Class C water, the EPA criteria for fish and water consumption will be selected using the same considerations for carcinogenic and noncarcinogenic parameters as noted above.

All methods of sample collection, preservation, and analysis used in applying any of the rules in these standards shall be in accord with those prescribed in 567—Chapter 63.

61.2(2) Antidegradation policy. It is the policy of the state of Iowa that:

a. Tier 1 protection. Existing surface water uses and the level of water quality necessary to protect the existing uses will be maintained and protected.

b. Tier 2 protection. Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the department finds, after full satisfaction of the intergovernmental coordination and public participation provisions, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the department shall ensure water quality adequate to protect existing uses fully. Further, the department shall ensure the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control before allowing any lowering of water quality.

c. Tier 2½ protection—outstanding Iowa waters. Where high quality waters constitute an outstanding state resource, such as waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

d. Tier 3 protection—outstanding national resource waters. Where high quality waters constitute an outstanding national resource, such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Any proposed activity that would result in a permanent new or expanded source of pollutants in an outstanding national resource water is prohibited.

e. Rescinded IAB 8/31/16, effective 8/12/16.

f. All unapproved facility plans for new or expanded construction permits, except for construction permits issued for nondischarging facilities, shall undergo an antidegradation review if degradation is likely in the receiving water or downstream waters following February 17, 2010.

g. This policy shall be applied in conjunction with water quality certification review pursuant to Section 401 of the Act. In the event that activities are specifically exempted from flood plain development permits or any other permits issued by this department in 567—Chapters 70, 71, and 72, the activity will be considered consistent with this policy. Other activities not otherwise exempted will be subject to 567—Chapters 70, 71, and 72 and this policy.

61.2(3) *Minimum treatment required.* All wastes discharged to the waters of the state must be of such quality that the discharge will not cause the narrative or numeric criteria limitations to be exceeded. Where the receiving waters provide sufficient assimilative capacity that the water quality standards are not the limiting factor, all point source wastes shall receive treatment in compliance with minimum effluent standards as adopted in rules by the department.

There are numerous parameters of water quality associated with nonpoint source runoff which are of significance to the designated water uses specified in the general and specific designations in 567—61.3(455B), but which are not delineated. It shall be the intent of these standards that the limits on such nonpoint source related parameters when adopted shall be those that can be achieved by best management practices as defined in the course of the continuing planning process from time to time. Existing water quality and nonpoint source runoff control technology will be evaluated in the course of the Iowa continuing planning process, and best management practices and limitations on specific water quality parameters will be reviewed and revised from time to time to ensure that the designated water uses and water quality enhancement goals are met.

61.2(4) *Regulatory mixing zones.* Mixing zones are recognized as being necessary for the initial assimilation of point source discharges which have received the required degree of treatment or control. Mixing zones shall not be used for, or considered as, a substitute for minimum treatment technology required by subrule 61.2(3). The objective of establishing mixing zones is to provide a means of control over the placement and emission of point source discharges so as to minimize environmental impacts. Waters within a mixing zone shall meet the general water quality criteria of subrule 61.3(2). Waters at and beyond mixing zone boundaries shall meet all applicable standards and the chronic and human health criteria of subrule 61.3(3), Tables 1 and 3, for that particular water body or segment. A zone of initial dilution may be established within the mixing zone beyond which the applicable standards and the acute criteria of subrule 61.3(3) will be met. For waters designated under subrule 61.3(5), any parameter not included in Tables 1, 2 and 3 of subrule 61.3(3), the chronic and human health criteria, and the acute criterion calculated following subrule 61.2(1), will be met at the mixing zone and zone of initial dilution boundaries, respectively.

a. Due to extreme variations in wastewater and receiving water characteristics, spatial dimensions of mixing zones shall be defined on a site-specific basis. These rules are not intended to define each individual mixing zone, but will set maximum limits which will satisfy most biological, chemical, physical and radiological considerations in defining a particular mixing zone. Additional details are noted in the “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020, for considering unusual site-specific features such as side channels and sand bars which may influence a mixing zone. Applications for operation permits under 567—subrule 64.3(1) may be required to provide specific information related to the mixing zone characteristics below their outfall so that mixing zone boundaries can be determined.

b. For parameters included in Table 1 only (which does not include ammonia nitrogen), the dimensions of the mixing zone and the zone of initial dilution will be calculated using a mathematical model presented in the “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020, or from instream studies of the mixing characteristics during low flow. In addition, the most restrictive of the following factors will be met:

(1) The stream flow in the mixing zone may not exceed the most restrictive of the following:

1. Twenty-five percent of the design low stream flows noted in subrule 61.2(5) for interior streams and rivers, and the Big Sioux and Des Moines Rivers.

2. Ten percent of the design low stream flows noted in subrule 61.2(5) for the Mississippi and Missouri Rivers.

3. The stream flow contained in the mixing zone at the most restrictive of the applicable mixing zone length criteria, noted below.

- (2) The length of the mixing zone below the point of discharge shall be set by the most restrictive of the following:

1. The distance to the juncture of two perennial streams.

2. The distance to a public water supply intake.

3. The distance to the upstream limits of an established recreational area, such as public beaches, and state, county and local parks.

4. The distance to the middle of a crossover point in a stream where the main current flows from one bank across to the opposite bank.

5. The distance to another mixing zone.

6. Not to exceed a distance of 2000 feet.

7. The location where the mixing zone contained the percentages of stream flow noted in 61.2(4)“b”(1).

- (3) The width of the mixing zone is calculated as the portion of the stream containing the allowed mixing zone stream flow. The mixing zone width will be measured perpendicular to the basic direction of stream flow at the downstream boundary of the mixing zone. This measurement will only consider the distance of continuous water surface.

- (4) The width and length of the zone of initial dilution may not exceed 10 percent of the width and length of the mixing zone.

- c. The stream flow used in determining wasteload allocations to ensure compliance with the maximum contaminant level (MCL), chronic and human health criteria of Table 1 will be that value contained at the boundary of the allowed mixing zone. This stream flow may not exceed the following percentages of the design low stream flow as measured at the point of discharge:

- (1) Twenty-five percent for interior streams and rivers, and the Big Sioux and Des Moines Rivers.

- (2) Ten percent for the Mississippi and Missouri Rivers.

- The stream flow in the zone of initial dilution used in determining effluent limits to ensure compliance with the acute criteria of Table 1 may not exceed 10 percent of the calculated flow associated with the mixing zone.

- d. For toxic parameters noted in Table 1, the following exceptions apply to the mixing zone requirements:

- (1) No mixing zone or zone of initial dilution will be allowed for waters designated as lakes or wetlands.

- (2) No zone of initial dilution will be allowed in waters designated as cold water.

- (3) The use of a diffuser device to promote rapid mixing of an effluent in a receiving stream will be considered on a case-by-case basis with its usage as a means for dischargers to comply with an acute numerical criterion.

- (4) A discharger to interior streams and rivers, the Big Sioux and Des Moines Rivers, and the Mississippi or Missouri Rivers may provide to the department, for consideration, instream data which technically supports the allowance of an increased percentage of the stream flow contained in the mixing zone due to rapid and complete mixing. Any allowed increase in mixing zone flow would still be governed by the mixing zone length restrictions. The submission of data should follow the guidance provided in the “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020.

- e. For ammonia criteria noted in Table 3, the dimensions of the mixing zone and the zone of initial dilution will be calculated using a mathematical model presented in the “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020, or from instream studies of the mixing characteristics during low flow. In addition, the most restrictive of the following factors will be met:

- (1) The stream flow in the mixing zone may not exceed the most restrictive of the following:

1. One hundred percent of the design low stream flows noted in subrule 61.2(5) for locations where the dilution ratio is less than or equal to 2:1.

2. Fifty percent of the design low stream flows noted in subrule 61.2(5) for locations where the dilution ratio is greater than 2:1, but less than or equal to 5:1.

3. Twenty-five percent of the design low stream flows noted in subrule 61.2(5) for locations where the dilution ratio is greater than 5:1.

4. The stream flow contained in the mixing zone at the most restrictive of the applicable mixing zone length criteria, noted below.

- (2) The length of the mixing zone below the point of discharge shall be set by the most restrictive of the following:

1. The distance to the juncture of two perennial streams.

2. The distance to a public water supply intake.

3. The distance to the upstream limits of an established recreational area, such as public beaches, and state, county, and local parks.

4. The distance to the middle of a crossover point in a stream where the main current flows from one bank across to the opposite bank.

5. The distance to another mixing zone.

6. Not to exceed a distance of 2000 feet.

7. The location where the mixing zone contained the percentages of stream flow noted in 61.2(4)“e”(1).

- (3) The width of the mixing zone is calculated as the portion of the stream containing the allowed mixing zone stream flow. The mixing zone width will be measured perpendicular to the basic direction of stream flow at the downstream boundary of the mixing zone. This measurement will only consider the distance of continuous water surface.

- (4) The width and length of the zone of initial dilution may not exceed 10 percent of the width and length of the mixing zone.

- f. For ammonia criteria noted in Table 3, the stream flow used in determining wasteload allocations to ensure compliance with the chronic criteria of Table 3 will be that value contained at the boundary of the allowed mixing zone. This stream flow may not exceed the percentages of the design low stream flow noted in 61.2(4)“e”(1) as measured at the point of discharge.

The pH and temperature values at the boundary of the mixing zone used to select the chronic ammonia criteria of Table 3 will be from one of the following sources. The source of the pH and temperature data will follow the sequence listed below, if applicable data exists from the source.

- (1) Specific pH and temperature data provided by the applicant gathered at their mixing zone boundary. Procedures for obtaining this data are noted in the “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020.

- (2) Regional background pH and temperature data provided by the applicant gathered along the receiving stream and representative of the background conditions at the outfall. Procedures for obtaining this data are noted in the “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020.

- (3) The statewide median background values as determined by the department.

The stream flow in the zone of initial dilution used in determining effluent limits to ensure compliance with the acute criteria of Table 3 may not exceed 5 percent of the calculated flow associated with the mixing zone for facilities with a dilution ratio of less than or equal to 2:1, and not exceed 10 percent of the calculated flow associated with the mixing zone for facilities with a dilution ratio of greater than 2:1. The pH and temperature values at the boundary of the zone of initial dilution used to select the acute ammonia criteria of Table 3 will be from one of the following sources and follow the sequence listed below, if applicable data exists from the source.

1. Specific effluent pH and temperature data if the dilution ratio is less than or equal to 2:1.

2. If the dilution ratio is greater than 2:1, the logarithmic average pH of the effluent and the regional or statewide pH provided in 61.2(4)“f” will be used. In addition, the flow proportioned average temperature of the effluent and the regional or statewide temperature provided in 61.2(4)“f” will be used.

The procedures for calculating these data are noted in the “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020.

g. For ammonia criteria noted in Table 3, the following exceptions apply to the mixing zone requirements.

(1) No mixing zone or zone of initial dilution will be allowed for waters designated as lakes or wetlands.

(2) No zone of initial dilution will be allowed in waters designated as cold water.

(3) The use of a diffuser device to promote rapid mixing of an effluent in a receiving stream will be considered on a case-by-case basis with its usage as a means for dischargers to comply with an acute numerical criterion.

(4) A discharger to interior streams and rivers, the Big Sioux and Des Moines Rivers, and the Mississippi and Missouri Rivers may provide to the department, for consideration, instream data which technically supports the allowance of an increased percentage of the stream flow contained in the mixing zone due to rapid and complete mixing. Any allowed increase in mixing zone flow would still be governed by the mixing zone length restrictions. The submission of data should follow the guidance provided in the “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020.

h. Temperature changes within mixing zones established for heat dissipation will not exceed the temperature criteria in 61.3(3) “b”(5).

i. The appropriateness of establishing a mixing zone where a substance discharged is bioaccumulative, persistent, carcinogenic, mutagenic, or teratogenic will be carefully evaluated. In such cases, effects such as potential groundwater contamination, sediment deposition, fish attraction, bioaccumulation in aquatic life, bioconcentration in the food chain, and known or predicted safe exposure levels shall be considered.

61.2(5) Implementation strategy. Numerical criteria specified in these water quality standards shall be met when the flow of the receiving stream equals or exceeds the design low flows noted below.

Type of Numerical Criteria	Design Low Flow Regime
Aquatic Life Protection (TOXICS)	
Acute	1Q ₁₀
Chronic	7Q ₁₀
Aquatic Life Protection (AMMONIA - N)	
Acute	1Q ₁₀
Chronic	30Q ₁₀
Human Health Protection & MCL	
Noncarcinogenic	30Q ₅
Carcinogenic	Harmonic mean

a. The allowable 3°C temperature increase criterion for warm water interior streams, 61.3(3) “b”(5) “1,” is based in part on the need to protect fish from cold shock due to rapid cessation of heat source and resultant return of the receiving stream temperature to natural background temperature. On low flow streams, in winter, during certain conditions of relatively cold background stream temperature and relatively warm ambient air and groundwater temperature, certain wastewater treatment plants with relatively constant flow and constant temperature discharges will cause temperature increases in the receiving stream greater than allowed in 61.3(3) “b”(5) “1.”

b. During the period November 1 to March 31, for the purpose of applying the 3°C temperature increase criterion, the minimum protected receiving stream flow rate below such discharges may be increased to not more than three times the rate of flow of the discharge, where there is reasonable assurance that the discharge is of such constant temperature and flow rate and continuous duration as to not constitute a threat of heat cessation and not cause the receiving stream temperature to vary more than 3°C per day.

c. Site-specific water quality criteria may be allowed in lieu of the specific numerical criteria listed in Tables 1 and 3 of this chapter if adequate documentation is provided to show that the proposed criteria will protect all existing or potential uses of the surface water. Site-specific water quality criteria may be appropriate where:

- (1) The types of organisms differ significantly from those used in setting the statewide criteria; or
- (2) The chemical characteristics of the surface water such as pH, temperature, and hardness differ significantly from the characteristics used in setting the statewide criteria.

Development of site-specific criteria shall include an evaluation of the chemical and biological characteristics of the water resource and an evaluation of the impact of the discharge. All evaluations for site-specific criteria modification must be coordinated through the department, and be conducted using scientifically accepted procedures approved by the department. Any site-specific criterion developed under the provisions of this subrule is subject to the review and approval of the U.S. Environmental Protection Agency. All criteria approved under the provisions of this subrule will be published periodically by the department. Guidelines for establishing site-specific water quality criteria can be found in "Water Quality Standards Handbook," published by the U.S. Environmental Protection Agency, December 1983.

d. A wastewater treatment facility may submit to the department technically valid instream data which provides additional information to be used in the calculations of their wasteload allocations and effluent limitations. This information would be in association with the low flow characteristics, width, length and time of travel associated with the mixing zone or decay rates of various effluent parameters. The wasteload allocation will be calculated considering the applicable data and consistent with the provisions and restrictions in the rules.

e. The department may perform use assessment and related use attainability analyses on water bodies where uses may not be known or adequately documented. The preparation of use attainability analysis documents will consider available U.S. Environmental Protection Agency guidance or other applicable guidance. Credible data and documentation will be used to assist in the preparation of use assessments and use attainability analysis reports.

61.2(6) *State water quality certification.* This subrule describes the procedures the department will follow when processing certification requests for state water quality certification (certification) of federally issued licenses and permits pursuant to Section 401 of the Act, including but not limited to permits issued by the United States Corps of Engineers (Corps) pursuant to Section 404 of the Act.

a. General. The department shall receive, consider, and process certification requests in accordance with Section 401 of the Act.

b. Certification requests. Certification requests shall be made on the department's Section 401 Water Quality Certification Request form. This form is available on the department's website. Individual permits or licenses issued by federal agencies require submission of a prefilng meeting request and certification request to obtain certification. The prefilng meeting request must be submitted to the department at least 30 days prior to submitting the certification request.

c. Public notice. The department shall issue a public notice of a certification request. The public notice may be a joint public notice issued by a federal agency on behalf of the department. When there is no joint public notice issued by the federal agency, a public notice issued by the department will be provided on its website. The public notice shall solicit comments from the public regarding whether the proposed project complies with state water quality requirements in accordance with Section 401 of the Act. The public notice shall specify the procedure and time frame for submitting comments on the proposed project.

d. Public notice for new or renewed nationwide or regional permits. The department shall provide additional notice to the public of certification of new or renewed nationwide or regional permits issued by the Corps pursuant to Section 404 of the Act. The department shall provide such notice on its website. The public notice shall solicit comments from the public regarding whether the proposed permit complies with state water quality requirements in accordance with Section 401 of the Act. The public notice shall specify the procedure and time frame for submitting comments on the proposed certification.

e. Department action on certification request. After the close of the public comment period and consideration of comments received, the department may issue a certification letter which may include conditions necessary to ensure compliance with state water quality requirements, waive issuance of the certification, or deny certification in accordance with Section 401 of the Act.

f. Certification of federal permits or licenses may require conditions, which may include one or more of the following, to ensure water quality requirements are met:

(1) During construction and upon completion of the project, actions must be taken to prevent pollution affecting public health, fish, shellfish, wildlife, and recreation due to turbidity, pH, nutrients, suspended solids, floating debris, visible oil and grease, or other pollutants entering waters of the state;

(2) Equipment used in waters of the state shall be cleaned of all hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, or other construction-related, potentially hazardous substances before arriving on site. Wash water shall not be discharged into a water of the state;

(3) All cleared vegetative material shall be properly managed in such a manner that it cannot enter a water of the state and cause a violation of water quality requirements;

(4) All construction debris shall be properly managed in such a manner that it cannot enter a water of the state;

(5) Erosion shall be managed so that sediment is not discharged to a water of the state in a manner that causes a violation of water quality requirements;

(6) Riprap, treated lumber products, and temporary structures shall consist of clean material free of coatings of potentially hazardous substances. No asphalt or petroleum-based material shall be used as or included in material placed in any water of the state or within the high-water table;

(7) Stockpiled dredged materials on the shore shall be managed so that sediment is not discharged in a manner that causes a violation of water quality requirements;

(8) Water quality monitoring will be required for Federal Energy Regulatory Commission hydropower projects at the baseline, construction and operational phases of the project;

(9) Hydraulically dredged material shall be managed to ensure the return water meets water quality requirements.

g. Duration of certification. The department's certification shall remain in effect until the expiration date of the applicable permit or license.

[ARC 8214B, IAB 10/7/09, effective 11/11/09; ARC 8466B, IAB 1/13/10, effective 2/17/10; ARC 9330B, IAB 1/12/11, effective 2/16/11 (See Delay note at the end of chapter); ARC 0121C, IAB 5/16/12, effective 6/20/12; ARC 1495C, IAB 6/11/14, effective 7/16/14; ARC 2695C, IAB 8/31/16, effective 8/12/16; ARC 3583C, IAB 1/17/18, effective 2/21/18; ARC 5226C, IAB 10/7/20, effective 11/11/20; ARC 5679C, IAB 6/16/21, effective 7/21/21]

567—61.3(455B) Surface water quality criteria.

61.3(1) *Surface water classification.* All waters of the state are classified for protection of beneficial uses. These classified waters include general use segments and designated use segments.

a. *General use segments.* These are intermittent watercourses and those watercourses which typically flow only for short periods of time following precipitation and whose channels are normally above the water table. These waters do not support a viable aquatic community during low flow and do not maintain pooled conditions during periods of no flow.

The general use segments are to be protected for livestock and wildlife watering, aquatic life, noncontact recreation, crop irrigation, and industrial, agricultural, domestic and other incidental water withdrawal uses.

b. *Designated use segments.* These are water bodies which maintain flow throughout the year or contain sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community.

All perennial rivers and streams as identified by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) or intermittent streams with perennial pools in Iowa not specifically listed in the surface water classification of 61.3(5) are designated as Class B(WW-1) waters.

All perennial rivers and streams as identified by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) or intermittent streams with perennial pools in Iowa are designated as Class A1 waters.

Designated uses of segments may change based on a use attainability analysis consistent with 61.2(5)“e.” Designated use changes will be specifically listed in the surface water classification of 61.3(5).

Designated use waters are to be protected for all uses of general use segments in addition to the specific uses assigned. Designated use segments include:

(1) Primary contact recreational use (Class “A1”). Waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in

quantities sufficient to pose a health hazard. Such activities would include, but not be limited to, swimming, diving, water skiing, and water contact recreational canoeing.

(2) Secondary contact recreational use (Class “A2”). Waters in which recreational or other uses may result in contact with the water that is either incidental or accidental. During the recreational use, the probability of ingesting appreciable quantities of water is minimal. Class A2 uses include fishing, commercial and recreational boating, any limited contact incidental to shoreline activities and activities in which users do not swim or float in the water body while on a boating activity.

(3) Children’s recreational use (Class “A3”). Waters in which recreational uses by children are common. Class A3 waters are water bodies having definite banks and bed with visible evidence of the flow or occurrence of water. This type of use would primarily occur in urban or residential areas.

(4) Cold water aquatic life—Type 1 (Class “B(CW1)”). Waters in which the temperature and flow are suitable for the maintenance of a variety of cold water species, including reproducing and nonreproducing populations of trout (*Salmonidae* family) and associated aquatic communities.

(5) Cold water aquatic life—Type 2 (Class “B(CW2)”). Waters that include small, channeled streams, headwaters, and spring runs that possess natural cold water attributes of temperature and flow. These waters usually do not support consistent populations of trout (*Salmonidae* family), but may support associated vertebrate and invertebrate organisms.

(6) Warm water—Type 1 (Class “B(WW-1)”). Waters in which temperature, flow and other habitat characteristics are suitable to maintain warm water game fish populations along with a resident aquatic community that includes a variety of native nongame fish and invertebrate species. These waters generally include border rivers, large interior rivers, and the lower segments of medium-size tributary streams.

(7) Warm water—Type 2 (Class “B(WW-2)”). Waters in which flow or other physical characteristics are capable of supporting a resident aquatic community that includes a variety of native nongame fish and invertebrate species. The flow and other physical characteristics limit the maintenance of warm water game fish populations. These waters generally consist of small perennially flowing streams.

(8) Warm water—Type 3 (Class “B(WW-3)”). Waters in which flow persists during periods when antecedent soil moisture and groundwater discharge levels are adequate; however, aquatic habitat typically consists of nonflowing pools during dry periods of the year. These waters generally include small streams of marginally perennial aquatic habitat status. Such waters support a limited variety of native fish and invertebrate species that are adapted to survive in relatively harsh aquatic conditions.

(9) Lakes and wetlands (Class “B(LW)”). These are artificial and natural impoundments with hydraulic retention times and other physical and chemical characteristics suitable to maintain a balanced community normally associated with lake-like conditions.

(10) Human health (Class “HH”). Waters in which fish are routinely harvested for human consumption or waters both designated as a drinking water supply and in which fish are routinely harvested for human consumption.

(11) Drinking water supply (Class “C”). Waters which are used as a raw water source of potable water supply.

61.3(2) General water quality criteria. The following criteria are applicable to all surface waters including general use and designated use waters, at all places and at all times for the uses described in 61.3(1) “a.”

a. Such waters shall be free from substances attributable to point source wastewater discharges that will settle to form sludge deposits.

b. Such waters shall be free from floating debris, oil, grease, scum and other floating materials attributable to wastewater discharges or agricultural practices in amounts sufficient to create a nuisance.

c. Such waters shall be free from materials attributable to wastewater discharges or agricultural practices producing objectionable color, odor or other aesthetically objectionable conditions.

d. Such waters shall be free from substances attributable to wastewater discharges or agricultural practices in concentrations or combinations which are acutely toxic to human, animal, or plant life.

e. Such waters shall be free from substances, attributable to wastewater discharges or agricultural practices, in quantities which would produce undesirable or nuisance aquatic life.

f. The turbidity of the receiving water shall not be increased by more than 25 Nephelometric turbidity units by any point source discharge.

g. Cations and anions guideline values to protect livestock watering may be found in the “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020.

h. The *Escherichia coli* (*E. coli*) content of water which enters a sinkhole or losing stream segment, regardless of the water body’s designated use, shall not exceed a Geometric Mean value of 126 organisms/100 ml or a sample maximum value of 235 organisms/100 ml. No new wastewater discharges will be allowed on watercourses which directly or indirectly enter sinkholes or losing stream segments.

61.3(3) Specific water quality criteria.

a. *Class “A” waters.* Waters which are designated as Class “A1,” “A2,” or “A3” in subrule 61.3(5) are to be protected for primary contact, secondary contact, and children’s recreational uses. The general criteria of subrule 61.3(2) and the following specific criteria apply to all Class “A” waters.

(1) The *Escherichia coli* (*E. coli*) content shall not exceed the levels noted in the Bacteria Criteria Table when the Class “A1,” “A2,” or “A3” uses can reasonably be expected to occur.

Bacteria Criteria Table (organisms/100 ml of water)

Use or Category	Geometric Mean	Sample Maximum
Class A1		
3/15 – 11/15	126	235
11/16 – 3/14	Does not apply	Does not apply
Class A2 (Only)		
3/15 – 11/15	630	2880
11/16 – 3/14	Does not apply	Does not apply
[Class A2 and B(CW)] or OIW or ONRW		
Year-Round	630	2880
Class A3		
3/15 – 11/15	126	235
11/16 – 3/14	Does not apply	Does not apply
Class A1 - Primary Contact Recreational Use Class A2 - Secondary Contact Recreational Use Class A3 - Children’s Recreational Use		

When a water body is designated for more than one of the recreational uses, the most stringent criteria for the appropriate season shall apply.

(2) The pH shall not be less than 6.5 nor greater than 9.0. The maximum change permitted as a result of a waste discharge shall not exceed 0.5 pH units.

b. *Class “B” waters.* All waters which are designated as Class B(CW1), B(CW2), B(WW-1), B(WW-2), B(WW-3) or B(LW) are to be protected for wildlife, fish, aquatic, and semiaquatic life. The following criteria shall apply to all Class “B” waters designated in subrule 61.3(5).

(1) Dissolved oxygen. Dissolved oxygen shall not be less than the values shown in Table 2 of this subrule.

(2) pH. The pH shall not be less than 6.5 nor greater than 9.0. The maximum change permitted as a result of a waste discharge shall not exceed 0.5 pH units.

(3) General chemical constituents. The specific numerical criteria shown in Tables 1, 2, and 3 of this subrule apply to all waters designated in subrule 61.3(5). The sole determinant of compliance with these criteria will be established by the department on a case-by-case basis. Effluent monitoring or instream monitoring, or both, will be the required approach to determine compliance.

1. The acute criteria represent the level of protection necessary to prevent acute toxicity to aquatic life. Instream concentrations above the acute criteria will be allowed only within the boundaries of the zone of initial dilution.

2. The chronic criteria represent the level of protection necessary to prevent chronic toxicity to aquatic life. Excursions above the chronic criteria will be allowed only inside of mixing zones or only for

short-term periods outside of mixing zones; however, these excursions cannot exceed the acute criteria shown in Tables 1 and 3. The chronic criteria will be met as short-term average conditions at all times the flow equals or exceeds either the design flows noted in subrule 61.2(5) or any site-specific low flow established under the provisions of subrule 61.2(5).

3. Rescinded IAB 2/15/06, effective 3/22/06.

(4) Rescinded IAB 2/15/06, effective 3/22/06.

(5) Temperature.

1. No heat shall be added to interior streams or the Big Sioux River that would cause an increase of more than 3°C. The rate of temperature change shall not exceed 1°C per hour. In no case shall heat be added in excess of that amount that would raise the stream temperature above 32°C.

2. No heat shall be added to streams designated as cold water fisheries that would cause an increase of more than 2°C. The rate of temperature change shall not exceed 1°C per hour. In no case shall heat be added in excess of that amount that would raise the stream temperature above 20°C.

3. No heat shall be added to lakes and reservoirs that would cause an increase of more than 2°C. The rate of temperature change shall not exceed 1°C per hour. In no case shall heat be added in excess of that amount that would raise the temperature of the lake or reservoirs above 32°C.

4. No heat shall be added to the Missouri River that would cause an increase of more than 3°C. The rate of temperature change shall not exceed 1°C per hour. In no case shall heat be added that would raise the stream temperature above 32°C.

5. No heat shall be added to the Mississippi River that would cause an increase of more than 3°C. The rate of temperature change shall not exceed 1°C per hour. In addition, the water temperature at representative locations in the Mississippi River shall not exceed the maximum limits in the table below during more than 1 percent of the hours in the 12-month period ending with any month. Moreover, at no time shall the water temperature at such locations exceed the maximum limits in the table below by more than 2°C.

Zone II—Iowa-Minnesota state line to the northern Illinois border (Mile Point 1534.6).

Zone III—Northern Illinois border (Mile Point 1534.6) to Iowa-Missouri state line.

Month	Zone II	Zone III
January	4°C	7°C
February	4°C	7°C
March	12°C	14°C
April	18°C	20°C
May	24°C	26°C
June	29°C	29°C
July	29°C	30°C
August	29°C	30°C
September	28°C	29°C
October	23°C	24°C
November	14°C	18°C
December	9°C	11°C

(6) Early life stage for each use designation. The following seasons will be used in applying the early life stage present chronic criteria noted in Table 3b, “Chronic Criterion for Ammonia in Iowa Streams - Early Life Stages Present.”

1. For all Class B(CW1) waters, the early life stage will be year-round.

2. For all Class B(CW2) waters, the early life stage will begin on April 1 and last through September 30.

3. For all Class B(WW-1) waters, the early life stage will begin in March and last through September, except as follows:

- For the following, the early life stage will begin in February and last through September:

- The entire length of the Mississippi and Missouri Rivers,

- The lower reach of the Des Moines River south of the Ottumwa dam, and

- The lower reach of the Iowa River below the Cedar River.

- For the following, the early life stage will begin in April and last through September:
 - All Class B(WW-1) waters in the Southern Iowa River Basin,
 - All of the Class B(WW-1) reach of the Skunk River, the North Skunk River and the South Skunk River south of Indian Creek (Jasper County), and the Class B(WW-1) tributaries to these reaches, and the entire Class B(WW-1) reach of the English River.
- 4. For all Class B(WW-2) and Class B(WW-3) waters, the early life stage will begin in April and last through September.
- 5. For all Class B(LW) lake and wetland waters, the early life stage will begin in March and last through September except for the Class B(LW) waters in the southern two tiers of Iowa counties which will have the early life stage of April through September.
- c. *Class “C” waters.* Waters which are designated as Class “C” are to be protected as a raw water source of potable water supply. The following criteria shall apply to all Class “C” waters designated in subrule 61.3(5).
 - (1) Radioactive substances.
 1. The combined radium-226 and radium-228 shall not exceed 5 picocuries per liter at the point of withdrawal.
 2. Gross alpha particle activity (including radium-226 but excluding radon and uranium) shall not exceed 15 picocuries per liter at the point of withdrawal.
 3. The average annual concentration at the point of withdrawal of beta particle and photon radioactivity from man-made radionuclides other than tritium and strontium-90 shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.
 4. The average annual concentration of tritium shall not exceed 20,000 picocuries per liter at the point of withdrawal; the average annual concentration of strontium-90 shall not exceed 8 picocuries per liter at the point of withdrawal.
 - (2) All substances toxic or detrimental to humans or detrimental to treatment process shall be limited to nontoxic or nondetrimental concentrations in the surface water.
 - (3) The pH shall not be less than 6.5 nor greater than 9.0.
- d. *Class “HH” waters.* Waters which are designated as Class HH shall contain no substances in concentrations which will make fish or shellfish inedible due to undesirable tastes or cause a hazard to humans after consumption.
 - (1) The human health criteria represent the level of protection necessary, in the case of noncarcinogens, to prevent adverse health effects in humans and, in the case of carcinogens, to prevent a level of incremental cancer risk not exceeding 1 in 100,000. Instream concentrations in excess of the human health criteria will be allowed only within the boundaries of the mixing zone.
 - (2) Reserved.

TABLE 1. Criteria for Chemical Constituents

(all values as micrograms per liter as total recoverable unless noted otherwise)

Human health criteria for carcinogenic parameters noted below were based on the prevention of an incremental cancer risk of 1 in 100,000. For parameters not having a noted human health criterion, the U.S. Environmental Protection Agency has not developed final national human health guideline values. For noncarcinogenic parameters, the recommended EPA criterion was selected. For Class C waters, the EPA criteria for fish and water consumption were selected using the same considerations for carcinogenic and noncarcinogenic parameters as noted above. For Class C waters for which no EPA human health criteria were available, the EPA MCL value was selected.

Parameter		Use Designations							C	HH
		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)			
Alachlor	MCL	—	—	—	—	—	—		2	—
Aldrin	Acute	—	—	3	3	3	—	—	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.00050 ^(e)	
	Human Health + — F & W	—	—	—	—	—	—	—	.00049 ^(f)	

[illegible]

[illegible]

[illegible]

[illegible]

Parameter		Use Designations						C	HH
		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)		
Selenium	Human Health — F & W	—	—	—	—	—	—	—	.038 ^(f)
	Chronic	10	—	5	5	5	70	—	—
	Acute	15	—	19.3	19.3	19.3	100	—	—
	Human Health + — F & W	—	—	—	—	—	—	—	170 ^(f)
	Human Health + — Fish	—	—	—	—	—	—	—	4200 ^(e)
Silver	Chronic ^(p)	N/A	—	N/A	N/A	N/A	N/A	—	—
	Acute ^(p)	11	—	11	11	11	11	—	—
	MCL	—	—	—	—	—	—	50	—
2,4,5-TP (Silvex)	MCL	—	—	—	—	—	—	10	—
Simazine	MCL	—	—	—	—	—	—	4	—
Styrene	MCL	—	—	—	—	—	—	100	—
Tetrachlorethylene	Human Health — F & W	—	—	—	—	—	—	—	6.9 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	33 ^(e)
Thallium	Human Health + — F & W	—	—	—	—	—	—	—	.24 ^(f)
	Human Health + — Fish	—	—	—	—	—	—	—	.47 ^(e)
Toluene	Chronic	50	—	50	150	150	50	—	—
	Acute	2500	—	2500	7500	7500	2500	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	15* ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	1300 ^(f)
Total Residual Chlorine (TRC)	Chronic	10	—	11	11	11	10	—	—
	Acute	35	—	19	19	19	20	—	—
Toxaphene	Chronic	.037	—	.002	.002	.002	.037	—	—
	Acute	.73	—	.73	.73	.73	.73	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.0028 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	.0028 ^(f)
1,2,4-Trichlorobenzene	MCL	—	—	—	—	—	—	70	—
1,1,1-Trichlorethane	MCL	—	—	—	—	—	—	200	—
	Human Health + — Fish	—	—	—	—	—	—	—	173* ^(e)
1,1,2-Trichloroethane	Human Health — F & W	—	—	—	—	—	—	—	6 ^(f)
Trichloroethylene (TCE)	Chronic	80	—	80	80	80	80	—	—
	Acute	4000	—	4000	4000	4000	4000	—	—
	Human Health — Fish	—	—	—	—	—	—	—	300 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	25 ^(f)
Trihalomethanes (total) ^(c)	MCL	—	—	—	—	—	—	80	—
Vinyl Chloride	Human Health — F & W	—	—	—	—	—	—	—	.25 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	24 ^(e)
Xylenes (Total)	MCL	—	—	—	—	—	—	10*	—

Parameter		Use Designations						
		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	C HH
Zinc	Chronic ^(p)	210 ^(l)	—	210 ^(l)	210 ^(l)	210 ^(l)	210 ^(l)	—
	Acute ^(p)	210 ^(l)	—	210 ^(l)	210 ^(l)	210 ^(l)	210 ^(l)	—
	Human Health + — Fish	—	—	—	—	—	—	26 ^{*(e)}
	Human Health + — F & W	—	—	—	—	—	—	7.4 ^{*(f)}

* units expressed as milligrams/liter

** to include the sum of known and suspected carcinogenic PAHs (includes benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene)

† expressed as nanograms/liter

+ represents the noncarcinogenic human health parameters

++ The concentrations of 4,4-DDT or its metabolites; 4,4-DDE and 4,4-DDD, individually shall not exceed the human health criteria.

(a) units expressed as million fibers/liter (longer than 10 micrometers)

(b) includes alpha-endosulfan, beta-endosulfan, and endosulfan sulfate in combination or as individually measured

(c) The sum of the four trihalomethanes (bromoform [tribromomethane], chlorodibromomethane, chloroform [trichloromethane], and dichlorobromomethane) may not exceed the MCL.

(d) Class B numerical criteria for pentachlorophenol are a function of pH using the equation: Criterion ($\mu\text{g/l}$) = $e^{[1.005(\text{pH}) - x]}$, where $e = 2.71828$ and x varies according to the following table:

	B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)
Acute	3.869	—	4.869	4.869	4.869	4.869
Chronic	4.134	—	5.134	5.134	5.134	5.134

(e) This Class HH criterion would be applicable to any Class B(LW), B(CW1), B(WW-1), B(WW-2), or B(WW-3) water body that is also designated Class HH.

(f) This Class HH criterion would be applicable to any Class C water body that is also designated Class HH.

(g) inorganic form only

(h) The acute and chronic criteria listed in main table are based on a hardness of 200 mg/l (as CaCO_3 (mg/l)).

Numerical criteria ($\mu\text{g/l}$) for cadmium are a function of hardness (as CaCO_3 (mg/l)) using the following equations:

	B(CW1)	B(WW-1)&B(LW)	B(WW-2)&B(WW-3)
Acute	$(1.136672 - [(\ln \text{hardness}) \times (0.041838)])^*$ $e^{(0.9789 \times \ln(\text{hardness}) - 3.866)}$	$(1.136672 - [(\ln \text{hardness}) \times (0.041838)])^*$ $e^{(0.9789 \times \ln(\text{hardness}) - 3.4210)}$	$(1.136672 - [(\ln \text{hardness}) \times (0.041838)])^*$ $e^{(0.9789 \times \ln(\text{hardness}) - 2.5750)}$
Chronic	$(1.101672 - [(\ln \text{hardness}) \times (0.041838)])^*$ $e^{0.7977 \times \ln(\text{hardness}) - 3.909}$	$(1.101672 - [(\ln \text{hardness}) \times (0.041838)])^*$ $e^{0.7977 \times \ln(\text{hardness}) - 3.909}$	$(1.101672 - [(\ln \text{hardness}) \times (0.041838)])^*$ $e^{0.7977 \times \ln(\text{hardness}) - 3.909}$

(i) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of 200 mg/l (as CaCO_3 (mg/l)). Numerical criteria ($\mu\text{g/l}$) for copper are a function of hardness (CaCO_3 (mg/l)) using the equation for each use according to the following table:

	B(WW-1)	B(WW-2)	B(WW-3)
Acute	$e^{[0.9422\text{Ln}(\text{Hardness}) - 1.700]}$	$e^{[0.9422\text{Ln}(\text{Hardness}) - 1.700]}$	$e^{[0.9422\text{Ln}(\text{Hardness}) - 1.700]}$
Chronic	$e^{[0.8545\text{Ln}(\text{Hardness}) - 1.702]}$	$e^{[0.8545\text{Ln}(\text{Hardness}) - 1.702]}$	$e^{[0.8545\text{Ln}(\text{Hardness}) - 1.702]}$

(j) The acute and chronic criteria listed in main table are based on a hardness of 200 mg/l (as CaCO_3 (mg/l)).

Numerical criteria ($\mu\text{g/l}$) for lead are a function of hardness (CaCO_3 (mg/l)) using the following equations:

Acute	$(1.46203 - [(\ln \text{hardness})(0.145712)]) \times$ $e^{[1.2731\text{Ln}(\text{Hardness}) - 1.46]}$
Chronic	$(1.46203 - [(\ln \text{hardness})(0.145712)]) \times$ $e^{[1.2731\text{Ln}(\text{Hardness}) - 4.705]}$

(k) The acute and chronic criteria listed in main table are based on a hardness of 200 mg/l (as CaCO_3 (mg/l)).

Numerical criteria ($\mu\text{g/l}$) for nickel are a function of hardness (CaCO_3 (mg/l)) using the following equations:

Acute	$0.998 \times e^{[0.846\text{Ln}(\text{Hardness}) + 2.255]}$
Chronic	$0.997 \times e^{[0.846\text{Ln}(\text{Hardness}) + 0.0584]}$

- (l) The acute and chronic criteria listed in main table are based on a hardness of 200 mg/l (as CaCO₃ (mg/l)). Numerical criteria (µg/l) for zinc are a function of hardness (CaCO₃ (mg/l)) using the following equations:

$$\text{Acute} \quad 0.978 \times e^{[0.8473 \ln(\text{Hardness}) + 0.884]}$$

$$\text{Chronic} \quad 0.986 \times e^{[0.8473 \ln(\text{Hardness}) + 0.884]}$$

- (m) Acute and chronic criteria listed in main table are based on a hardness of 200 mg/l (as CaCO₃ (mg/l)) and a sulfate concentration of 63 mg/l. Numerical criteria (µg/l) for chloride are a function of hardness (CaCO₃ (mg/l)) and sulfate (mg/l) using the equation for each use according to the following table:

	B(CW1), B(CW2), B(WW-1), B(WW-2), B(WW-3), B(LW)
Acute	$287.8(\text{Hardness})^{0.205797}(\text{Sulfate})^{-0.07452}$
Chronic	$177.87(\text{Hardness})^{0.205797}(\text{Sulfate})^{-0.07452}$

- (n) The copper criteria in Table 1 can be adjusted by a Water-Effect Ratio (WER). The WER factor is equal to 1.0 unless an approved WER study has been conducted by a permittee for a specific point source. The WER study shall be conducted in accordance with the "Interim Guidance on Determination and Use of Water-Effect Ratios for Metals (EPA-823-B-94-001), February 22, 1994," or upon approval by the department, the "Streamlined Water-Effect Ratio Procedure for Discharges of Copper (EPA-822-R-01-005), March 2001," which are hereby adopted by reference.

The copper Biotic Ligand Model (BLM) may be used as an alternative to the copper criteria in Table 1. The copper BLM is found in the document "Aquatic Life Ambient Freshwater Quality Criteria - Copper 2007 Revision (EPA-822-R-07-001), February 2007," which is hereby adopted by reference.

- (o) The acute and chronic criteria listed in Table 1 are calculated using Aluminum Criteria Calculator V2.0 (Excel) as described in "Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (EPA-822-R-18-001), December 2018." The criteria were calculated using the lowest tenth percentile of individual model outputs using spatially and temporally representative model inputs from across the state. Site-specific criteria shall also be developed using this approach and the most recent version of the calculator.

- (p) The criteria are expressed as dissolved concentration.

- (q) The silver criteria listed in Table 1 are based on a hardness of 200 mg/l (as CaCO₃ (mg/l)). Numerical criteria (µg/l) for silver are a function of hardness (CaCO₃ (mg/l)) using the following equation:

$$\text{Acute } 0.85 \times e^{[1.72 \ln(\text{Hardness}) - 6.59]}$$

- (r) The criteria are expressed as the bioavailable portion of aluminum.

TABLE 2. Criteria for Dissolved Oxygen

(all values expressed in milligrams per liter)

	B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)
Minimum value for at least 16 hours of every 24-hour period	7.0	7.0	5.0	5.0	5.0	5.0*
Minimum value at any time during every 24-hour period	5.0	5.0	5.0	4.0	4.0	5.0*

**applies only to the upper layer of stratification in lakes*

TABLE 3a. Acute Criterion for Ammonia in Iowa Streams

Acute Criterion, mg/l as N (or Criterion Maximum Concentration, CMC)		
pH	Class B(WW-1), B(WW-2), B(WW-3) & B(LW)	Class B(CW1) & B(CW2)
6.5	48.8	32.6
6.6	46.8	31.3
6.7	44.6	29.8
6.8	42.0	28.0
6.9	39.1	26.1
7.0	36.1	24.1
7.1	32.8	21.9

Acute Criterion, mg/l as N (or Criterion Maximum Concentration, CMC)		
pH	Class B(WW-1), B(WW-2), B(WW-3) & B(LW)	Class B(CW1) & B(CW2)
7.2	29.5	19.7
7.3	26.2	17.5
7.4	23.0	15.3
7.5	19.9	13.3
7.6	17.0	11.4
7.7	14.4	9.64
7.8	12.1	8.11
7.9	10.1	6.77
8.0	8.40	5.62
8.1	6.95	4.64
8.2	5.72	3.83
8.3	4.71	3.15
8.4	3.88	2.59
8.5	3.20	2.14
8.6	2.65	1.77
8.7	2.20	1.47
8.8	1.84	1.23
8.9	1.56	1.04
9.0	1.32	0.885

TABLE 3b. Chronic Criterion for Ammonia in Iowa Streams - Early Life Stages Present

Chronic Criterion - Early Life Stages Present, mg/l as N (or Criterion Continuous Concentration, CCC)										
pH	Temperature, °C									
	0	14	16	18	20	22	24	26	28	30
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.8	2.8	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287

Chronic Criterion - Early Life Stages Present, mg/l as N (or Criterion Continuous Concentration, CCC)										
pH	Temperature, °C									
	0	14	16	18	20	22	24	26	28	30
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

TABLE 3c. Chronic Criterion for Ammonia in Iowa Streams - Early Life Stages Absent

Chronic Criterion - Early Life Stages Absent, mg/l as N (or Criterion Continuous Concentration, CCC)										
pH	Temperature, °C									
	0-7	8	9	10	11	12	13	14	15*	16*
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.99
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.9	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

*At 15°C and above, the criterion for fish early life stage (ELS) absent is the same as the criterion for fish ELS present.

TABLE 4. Aquatic Life Criteria for Sulfate for Class B Waters

(all values expressed in milligrams per liter)

Hardness mg/l as CaCO ₃	Chloride		
	Cl ⁻ < 5 mg/l	5 ≤ Cl ⁻ < 25	25 ≤ Cl ⁻ ≤ 500
H < 100 mg/l	500	500	500
100 ≤ H ≤ 500	500	$[-57.478 + 5.79(\text{hardness}) + 54.163(\text{chloride})] \times 0.65$	$[1276.7 + 5.508(\text{hardness}) - 1.457(\text{chloride})] \times 0.65$
H > 500	500	2,000	2,000

61.3(4) Class "C" waters. Rescinded IAB 4/18/90, effective 5/23/90.

61.3(5) *Surface water classification.* The department hereby incorporates by reference “Surface Water Classification,” effective July 24, 2019. This document may be obtained on the department’s website at www.iowadnr.gov.

61.3(6) *Cold water use designation assessment protocol.* The department hereby incorporates by reference “Cold Water Use Designation Assessment Protocol,” effective December 15, 2004. This document may be obtained on the department’s website at www.iowadnr.gov.

61.3(7) *Warm water stream use assessment and attainability analysis protocol.* The department hereby incorporates by reference “Warm Water Stream Use Assessment and Attainability Analysis Protocol,” effective March 22, 2006. This document may be obtained on the department’s website at www.iowadnr.gov.

61.3(8) *Recreational use assessment and attainability analysis protocol.* The department hereby incorporates by reference “Recreational Use Assessment and Attainability Analysis Protocol,” effective March 19, 2008. This document may be obtained on the department’s website.

61.3(9) *Iowa wasteload allocation (WLA) procedure.* The department hereby incorporates by reference “Iowa Wasteload Allocation (WLA) Procedure,” as revised on November 11, 2020. This document may be obtained on the department’s website at www.iowadnr.gov.

61.3(10) *Implementation procedure for biotic ligand model-based copper criteria.* The department hereby incorporates by reference “Implementation Procedure for Biotic Ligand Model-Based Copper Criteria,” February 22, 2017. This document may be obtained on the department’s website.

This rule is intended to implement Iowa Code chapter 455B, division I, and division III, part 1.

[**ARC 8039B**, IAB 8/12/09, effective 9/16/09; **ARC 8214B**, IAB 10/7/09, effective 11/11/09; **ARC 8226B**, IAB 10/7/09, effective 11/11/09; **ARC 8466B**, IAB 1/13/10, effective 2/17/10; **ARC 9223B**, IAB 11/17/10, effective 12/22/10; **ARC 1988C**, IAB 5/13/15, effective 6/17/15; **ARC 2911C**, IAB 1/18/17, effective 2/22/17; **ARC 3583C**, IAB 1/17/18, effective 2/21/18; **ARC 4514C**, IAB 6/19/19, effective 7/24/19; **ARC 5226C**, IAB 10/7/20, effective 11/11/20; **ARC 6191C**, IAB 2/9/22, effective 3/16/22]

567—61.4 to 61.9 Reserved.

VOLUNTEER MONITORING DATA REQUIREMENTS

567—61.10(455B) Purpose. The department uses water quality monitoring data for a number of purposes, including determining compliance with effluent limits for operation permits issued under 567—Chapter 64. The department also uses water quality monitoring data to determine the relative health of a water body by comparing monitoring data to the appropriate water quality standards established in 567—Chapter 61, a process known as water body assessments. Water body assessments are performed to prepare the biennial water quality report required under Section 305(b) of the Act and the list of impaired waters under Section 303(d) of the Act.

Iowa Code sections 455B.193 to 455B.195 require that credible data, as defined in Iowa Code section 455B.171, be used for the purpose of preparing Section 303(d) lists and other water quality program functions. Data provided by a volunteer are not considered credible data unless provided by a qualified volunteer. The purpose of this chapter is to establish minimum requirements for data produced by volunteers to meet the credible data and qualified volunteer requirements.

567—61.11(455B) Monitoring plan required. Volunteer water quality monitoring data submitted to the department must have been produced in accordance with a department-approved volunteer water quality monitoring plan before the data may be used for any of the purposes listed in Iowa Code section 455B.194. Approval of a plan will establish qualified volunteer status for the personnel identified in the plan for those monitoring activities covered under the plan.

61.11(1) Submittal of the plan. Prior to initiation of volunteer water quality monitoring activities intended to produce credible data, a water quality monitoring plan must be submitted to the department for review and approval. The plan must be submitted to the Volunteer Monitoring Coordinator, Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319, a minimum of 90 days before planned initiation of volunteer monitoring activities. A letter transmitting the plan must specifically request formal review and approval of the plan and identify a contact person. Volunteer monitors are encouraged to

communicate with the department and to attend volunteer monitoring training sessions prior to formal submittal of a plan.

61.11(2) *Content of the plan.* A volunteer monitoring plan must contain, at a minimum, the following to be considered an acceptable volunteer monitoring plan:

- a. A statement of the intent of the monitoring effort.
- b. The name(s) of the person or persons that will be involved in data collection or analysis, the specific responsibilities of each person or group of people, and the general qualifications of the volunteers to carry out those responsibilities. For groups, such as educational institutions, it will be acceptable to identify the persons involved by general description (e.g., tenth grade biology class) with the exception of persons in responsible charge.
- c. The name(s) of the person or persons that will oversee the monitoring plan, ensure that quality assurance and control objectives are being met, and certify the data. The person or persons in responsible charge must have training commensurate with the level of expertise to ensure that credible data is being generated.
- d. The duration of the volunteer monitoring effort. In general, the department will not approve plans of greater than three years' duration unless a longer duration is justified.
- e. Location and frequency of sample collection.
- f. Methods of data collection and analysis.
- g. Record keeping and data reporting procedures.

61.11(3) *Department review of the plan.* The department will review monitoring plans and normally approve or disapprove the plan within 90 days of receipt. The department will work with the contact person identified in the plan to make any necessary changes prior to taking formal action. The department will use guidelines contained in the publications EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5, 2001) and Volunteer Monitor's Guide to Quality Assurance Project Plans (1966, EPA 841-B-96-003) or equivalent updates to determine if the plans provide adequate quality assurance and quality control measures. Approval or disapproval of the plan will be in the form of a letter and approval may include conditions or limitations.

61.11(4) *Changes in monitoring plans.* The department must approve any changes to an approved monitoring plan. Data collected under a modified plan will not be considered credible data until such time as the department has approved the modifications. Modifications to an approved plan should be submitted at the earliest possible time to avoid interruptions in data collection and to ensure continuity of data.

61.11(5) *Appeal of disapproval.* If a monitoring plan submitted for approval is disapproved, the decision may be appealed by filing an appeal with the director within 30 days of disapproval. The form of the notice of appeal and appeal procedures are governed by 567—Chapter 7.

567—61.12(455B) Use of volunteer monitoring data. Data produced under an approved water quality monitoring plan will be considered credible data for the purposes listed in Iowa Code section 455B.194 if the following conditions are met.

61.12(1) *Data submittal.* A qualified volunteer monitor or qualified volunteer monitoring group must specifically request that data produced under an approved volunteer monitoring plan be considered credible data. A letter identifying the specific data must be submitted along with a certification from the volunteer or the person in responsible charge for volunteer groups that the data, to the best of the volunteer's or responsible person's knowledge, was produced in accordance with the approved volunteer monitoring plan. The department shall provide a standard format on the IOWATER website for submittal of qualified volunteer data and related information. The department encourages volunteers to enter monitoring data on the IOWATER volunteer monitoring database maintained by the department, but doing so does not constitute submittal to or acceptance of the data by the department for uses requiring credible data. Volunteer data shall be labeled as such in any departmental reports, websites, or databases.

61.12(2) *Department review of submitted data.* The department must review and approve the submitted data. The person submitting the data will be informed of the department's decision either to accept or reject the data. The department will attempt to resolve any apparent inconsistencies or questionable values in the submitted data prior to making a final decision.

567—61.13(455B) Department audits of volunteer monitoring activities. The department shall conduct field audits of a statistically valid and representative sample of volunteer data collection and analysis procedures to ensure compliance with an approved plan and may conduct confirmatory monitoring tests. Volunteers shall be informed of any audit results and be provided with an opportunity to address any concerns to the extent possible. The department reserves the right to rescind approval of an approved plan if it finds substantial problems that cannot be addressed in a timely manner to ensure the quality of the data being produced.

These rules are intended to implement Iowa Code chapter 455B, division III, part 1.

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¹ February 16, 2011, effective date of 61.2(2)“g”(8) delayed 70 days by the Administrative Rules Review Committee at its meeting held February 11, 2011.

CHAPTER 62
EFFLUENT AND PRETREATMENT STANDARDS:
OTHER EFFLUENT LIMITATIONS OR PROHIBITIONS

[Prior to 7/1/83, DEQ Ch 17]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—62.1(455B) Prohibited discharges.

62.1(1) The discharge of any pollutant from a point source into a navigable water is prohibited unless authorized by an NPDES permit or by a permit issued pursuant to Section 404 of the CWA and certified pursuant to 567—subrule 61.2(6).

62.1(2) The prohibitions in 40 CFR §122.4 are adopted by reference.

62.1(3) The following discharges are prohibited:

a. The discharge of wastewater into a POTW or a semipublic sewage disposal system (DS) in volumes or quantities in excess of those to which a significant industrial user is committed in either a treatment agreement described in 567—subrule 60.3(3) or a local control mechanism (in the case of a POTW with an approved pretreatment program); and

b. Discharge of the pollutants listed in 40 CFR §403.5(b) to a POTW, a semipublic sewage DS, or a PSDS.

62.1(4) Waste in such volumes or quantities as to exceed the design capacity of the treatment works, cause interference or pass through, or reduce the effluent quality below that specified in the operation permit of the treatment works is considered to be a waste that interferes with the operation or performance of a POTW or a semipublic sewage DS and are prohibited.

[ARC 9204C, IAB 5/14/25, effective 6/18/25]

567—62.2(455B) Secondary treatment information: effluent standards for POTWs and semipublic sewage DSs.

62.2(1) *General.* This subrule describes the minimum level of effluent quality attainable by secondary treatment in terms of CBOD₅; suspended solids (SS), the pollutant parameter total suspended solids; and pH. The pollutant measurement CBOD₅ is used in lieu of the pollutant measurement BOD₅, as noted in 40 CFR §133.102(a)(4). All requirements for each pollutant measurement shall be achieved by POTWs and semipublic sewage DSs except as provided for in 62.2(2) and 62.2(3).

a. CBOD₅, as noted in 40 CFR §133.102(a)(4). The 30-day average percent removal shall not be less than 85 percent, and the percent removal shall be calculated by adding five units to the effluent CBOD₅ monitoring data and comparing that value to the influent BOD₅ monitoring data. Site-specific information on the relationship between BOD₅ and CBOD₅ shall be used in lieu of the five-unit relationship if such information is available.

b. SS, as noted in 40 CFR §133.102(b).

c. pH, as noted in 40 CFR §133.102(c).

62.2(2) *Special considerations.*

a. *Combined sewers and percent removal.* 40 CFR §133.103(a) is adopted by reference.

b. *Industrial wastes and POTWs; standard secondary adjustment.* 40 CFR §133.103(b) is adopted by reference.

c. *Waste stabilization lagoons.* Secondary treatment standards for waste stabilization lagoons are the same as those found in 62.2(1) concerning secondary treatment with the exception of the SS standards, which are as follows:

(1) The 30-day average shall not exceed 80 mg/l.

(2) The 7-day average shall not exceed 120 mg/l.

d. *Less concentrated influent wastewater for separate and combined sewers; lower percent removal or mass loading limit.* 40 CFR §133.103(d) and (e) are adopted by reference.

e. *Upgraded facilities designed to operate in a split flow mode.*

(1) The department may substitute either a lower percent removal requirement or a mass loading limit for the percent removal requirements in 62.2(1), provided that the treatment works is designed to split part of the primary treated wastewater flow around the secondary treatment unit(s). The design to accommodate split flow must be approved by the department and consistent with applicable design standards for wastewater treatment facilities. Paragraph 62.2(2) “d” applies to facilities considered under this subrule. This subrule shall not be considered for facilities eligible for treatment equivalent to secondary treatment under 62.2(3).

(2) Any applicant requesting a permit limit adjustment pursuant to this subrule must include as part of the request an analysis of the infiltration and inflow (I/I) sources in the system and a plan for the elimination of all inflow sources such as roof drains, manholes, and storm sewer interconnections. Infiltration sources that can be economically eliminated or minimized shall be corrected.

f. *Dilution.* Nothing in this subrule or any other department rule shall be construed to encourage dilution of sewage as a means of complying with secondary treatment effluent standards. Reasonable efforts to prevent and abate infiltration of groundwater into sewers, and prevention or removal of any significant source of inflow, are required of all persons responsible for facilities subject to these standards.

62.2(3) *Treatment equivalent to secondary treatment.* 40 CFR §133.105 is adopted by reference. Treatment works shall be eligible for consideration of effluent limitations described for treatment equivalent to secondary treatment in accordance with 40 CFR §133.101(g). The pollutant measurement CBOD₅ will be used in lieu of the pollutant measurement BOD₅, as noted in 40 CFR §133.105(e).

[ARC 9204C, IAB 5/14/25, effective 6/18/25]

567—62.3(455B) Federal standards and effluent limitations.

62.3(1) *Federal effluent and pretreatment standards.* The following are adopted by reference: 40 CFR Part 125, Subparts H, I, and J, and 40 CFR Parts 401 through 471.

62.3(2) *Federal toxic pollutant effluent standards.* 40 CFR Part 129 is adopted by reference.

62.3(3) *Effluent limitations and pretreatment requirements for sources for which there are no federal effluent or pretreatment standards.* For discharges of pollutants from sources that are not subject to the federal effluent standards adopted by reference in 62.3(1), the department shall establish effluent limitations, pretreatment requirements, or both, that represent the best professional judgment for pollutant reduction, consistent with the CWA and Iowa Code chapter 455B.

62.3(4) *Effluent limitations less stringent than the effluent limitation guidelines.* 40 CFR Part 125 Subpart D is adopted by reference.

[ARC 9204C, IAB 5/14/25, effective 6/18/25]

567—62.4(455B) Effluent limitations or pretreatment requirements more stringent than the effluent or pretreatment standards.

62.4(1) *Effluent limitations necessary to meet water quality standards (WQSs).* No effluent, alone or in combination with the effluent of other sources, shall cause a violation of any applicable WQS. When it is found that a discharge that would comply with applicable effluent standards or effluent limitations in this chapter would cause a violation of WQSs, the discharge will be required to meet the water quality-based effluent limits (WQBELs) necessary to achieve the applicable WQSs as established in 567—Chapter 61. WQBELs shall be derived from a wasteload allocation (WLA) calculated for the discharge, as described in the Iowa Wasteload Allocation Procedure (WLAP) (Nov. 11, 2020), or a WLA calculated for a TMDL, whichever is more stringent, except that the daily sample maximum criteria for *E. coli* set forth in 567—Chapter 61 shall not be used as an end-of-pipe permit limitation.

62.4(2) *Pretreatment requirements more stringent than categorical standards.* The department or POTW may impose pretreatment requirements more stringent than the applicable categorical standards in 62.3(1) when more stringent requirements are necessary to prevent violations of WQSs, pass through, acute worker health or safety problems, or interference (including inhibiting or disrupting sludge use and disposal practices).

62.4(3) *Effluent limitations for pollutants not covered by effluent or categorical standards.* When a pollutant is not otherwise regulated under rules 567—62.2(455B) and 567—62.3(455B), effluent limits or pretreatment requirements may be imposed on a case-by-case basis.

a. Effluent limits shall be based on the effect of the pollutant in water and the feasibility and reasonableness of treating the pollutant.

b. Pretreatment requirements shall be based on the effect of the pollutant in water, the effect on the receiving treatment works (including pass through, inhibition, worker safety, and sludge disposal), and the feasibility and reasonableness of treating the pollutant.

[ARC 9204C, IAB 5/14/25, effective 6/18/25]

567—62.5(455B) Effluent reuse.

62.5(1) *Manner of reuse.* Treated final effluent may be reused in a manner noted in this rule or as specified in an NPDES permit.

62.5(2) *Reuse for golf course irrigation.* Treated final effluent may be reused for golf course irrigation if one of the conditions described in 62.5(2) “a” and all of the conditions in 62.5(2) “b” are met.

a. The treated final effluent must meet one of the following conditions:

(1) A minimum total residual chlorine (TRC) level of 0.5 mg/l must be maintained at a minimum of 15 minutes’ contact time of chlorine to wastewater prior to the irrigation of the golf course with treatment plant effluent; or

(2) Disinfected effluent shall be held in a retention pond with a detention time of at least 20 days prior to reuse as irrigation on a golf course. For this purpose, effluent may be disinfected using any common treatment technology, and either an existing pond or a pond constructed specifically for effluent retention may be used.

b. A golf course utilizing treated final effluent shall take all of the following actions:

(1) Clearly state on all scorecards that treated final effluent is used for golf course irrigation and oral contact with golf balls and tees should be avoided;

(2) Post signs that warn against consumption of water at all water hazards;

(3) Color code, label, or tag all piping and sprinklers associated with the distribution or transmission of the treated final effluent to clearly warn against the consumptive use of the contents; and

(4) Restrict public access to any area of the golf course where spraying is being conducted.

[ARC 9204C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 1.

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CHAPTER 63
MONITORING, ANALYTICAL AND REPORTING REQUIREMENTS

[Prior to 7/1/83, DEQ Ch 18]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—63.1(455B) Guidelines establishing test procedures for the analysis of pollutants. Only the procedures prescribed in this chapter shall be used to perform the measurements indicated in an application for an operation permit submitted to the department, a report required to be submitted by the terms of an operation permit, and a certification issued by the department pursuant to Section 401 of the CWA.

63.1(1) *Identification of test methods, application for alternative test methods, and method modifications.*

a. Laboratories shall use methods promulgated or approved by the EPA or by the department in accordance with 567—subrule 83.5(1).

b. All parameters for which testing is required by a wastewater discharge permit, permit application, or administrative order, except operational performance testing, must be analyzed using one of the following:

- (1) An approved method specified in 40 CFR §136.3;
- (2) An alternative method that has been previously approved pursuant to 40 CFR §136.4 or 136.5; or
- (3) A method identified by the department when no approved method is specified for the parameter in 40 CFR Part 136.

c. Applications for alternative test procedures shall follow the requirements of 40 CFR §136.4 or 136.5.

d. Method modifications shall follow the requirements of 40 CFR §136.6.

63.1(2) *Containers, preservation techniques and holding times.* All samples collected in accordance with the self-monitoring requirements defined in an operation permit shall comply with the container, preservation techniques, and holding time requirements as specified in 40 CFR §136.3, Table II (Required Containers, Preservation Techniques, and Holding Times). Sample preservation should be performed immediately upon collection, if feasible.

63.1(3) All laboratories conducting analyses required by this chapter must be certified in accordance with 567—Chapter 83. Routine on-site monitoring for pH, temperature, dissolved oxygen, total residual chlorine (TRC), other pollutants that must be analyzed immediately upon sample collection, settleable solids, physical measurements such as flow and cell depth, and operational monitoring tests specified in 63.3(4) are excluded from this requirement.

63.1(4) All instrumentation used for conducting any analyses required by this chapter must be properly calibrated according to the manufacturer's instructions.

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

567—63.2(455B) Monitoring activities and records. Permittees shall maintain records of all information resulting from any monitoring activities required in an operation permit and from any operational performance monitoring.

63.2(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity, in accordance with 40 CFR §122.41(j)(1).

63.2(2) Permittees shall retain, for a minimum of three years, all paper and electronic records of monitoring activities and results in accordance with 40 CFR §122.41(j)(2).

63.2(3) Records of monitoring activities and results shall include the information specified in 40 CFR §122.41(j)(3).

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

567—63.3(455B) Minimum self-monitoring requirements in permits.

63.3(1) *Organic waste dischargers.* The minimum self-monitoring requirements to be incorporated in operation permits for facilities discharging organic wastes shall be the appropriate requirements in Tables I

and II of this chapter. Additional monitoring may be specified in operation permits in accordance with 63.3(5).

63.3(2) *Inorganic waste dischargers.* The self-monitoring requirements to be incorporated in operation permits for facilities discharging inorganic wastes shall be determined on a case-by-case evaluation of the impact of the discharge on the receiving stream, toxic or deleterious effects of wastewaters, complexity of the treatment process, history of noncompliance or any other factor which requires strict operational control to meet the effluent limitations of the permit, as described in the Supporting Document for Permit Monitoring Frequency Determination, March 2022, hereafter referred to as the Supporting Document, located on the department's website. Grab samples shall be taken in accordance with 567—63 Table I (455B) Superscript 4, and composite samples shall be taken in accordance with 567—63 Table I (455B) Superscript 4a or 4c.

63.3(3) *Significant industrial users (SIUs) of publicly owned treatment works (POTWs).* Monitoring for SIUs shall be determined as described in the Supporting Document, located on the department's website. Monitoring results shall be submitted to the department in accordance with the reporting requirements in the operation permit. The monitoring program of a POTW with a department-approved pretreatment program may be used in lieu of the Supporting Document.

63.3(4) *Operational performance monitoring.* Operational performance monitoring for treatment unit process control shall be conducted to ensure that a facility is properly operated in accordance with its design. The results of any operational performance monitoring need not be reported to the department but shall be maintained in accordance with rule 567—63.2(455B), and shall be submitted to the department upon request. Additional operational performance monitoring may be specified in operation permits in accordance with 63.3(5). The results of operational performance monitoring specified in an operation permit shall be submitted to the department in accordance with the permit requirements.

63.3(5) *Additional monitoring.*

a. Additional monitoring may be specified in operation permits in accordance with this subrule, as follows:

- (1) For facilities discharging organic wastes;
- (2) As operational performance monitoring; or
- (3) For the purposes of whole effluent toxicity (WET) testing.

b. Additional monitoring requirements in operation permits shall be based on a case-by-case evaluation of the impact of the discharge on the receiving stream, toxic or deleterious effects of wastewaters, industrial contribution to the system, complexity of the treatment process, history of noncompliance or any other factor which requires strict operational control to meet the effluent limitations of the permit, as described in the Supporting Document.

63.3(6) *Modification of minimum monitoring requirements.* Monitoring requirements may be modified or reduced at the director's discretion or when requested by the permittee, in accordance with 567—paragraph 60.3(6) "e."

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

567—63.4(455B) Whole effluent toxicity (WET) testing requirements in permits.

63.4(1) *WET testing.*

a. All major municipal and industrial dischargers shall conduct WET testing. Additional toxicity monitoring may be specified in operation permits for major or minor facilities in accordance with 63.3(5).

b. All dischargers required to conduct WET tests shall conduct, at a minimum, one valid WET test annually. The testing requirements will be placed in the operation permit for each discharger required to conduct this testing. A "valid WET test" is one that meets the testing requirements in 63.4(2) "a."

c. Any WET test completed by the department or other agency and conducted according to the procedures stated or referenced in this rule may be used to determine compliance with an operation permit.

63.4(2) *Testing procedures.*

a. All WET tests shall be conducted as follows:

- (1) Use a 24-hour composite sample of the effluent collected at the location stated in the operation permit;
- (2) Commence within 36 hours of sample collection;

(3) Use the test methods referenced in 40 CFR Part 136 and protocols described in the EPA document EPA-821-R-02-012, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th edition, October 2002;

(4) Use the water flea (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*);

(5) Be conducted as static pass/fail;

(6) Include the following for each organism: a 100 percent culture water control series, a 100 percent effluent series, and any additional dilution series specified in the operation permit;

(7) Last for 48 hours, at which time the mortality will be determined for all tests; and

(8) Be conducted by a laboratory certified in Iowa.

b. All WET test results, including results of any tests performed at a greater frequency than required in the operation permit, shall be submitted to the department within 30 days of test completion.

63.4(3) Positive result. If there is a positive toxicity test result in the diluted effluent sample from a valid WET test, the following requirements apply unless the exception in 63.4(3)“d” is applicable. For the purposes of this rule, “positive toxicity test result” means a statistically significant difference of mortality rate between the control and the diluted effluent test.

a. At a minimum, the discharger shall conduct quarterly WET tests until three successive tests are determined not to be positive, after which the toxicity testing shall be resumed as specified in the operation permit.

b. If the discharger has two successive positive valid diluted WET test results or three positive test results out of five valid diluted tests, the discharger shall conduct a toxicity reduction evaluation (TRE). A TRE is a stepwise process, similar to that found in EPA Document 600/2-88/062, that combines effluent toxicity tests and analysis of the chemical characteristics of the effluent to determine the cause of the effluent toxicity or the treatment methods that will reduce the effluent toxicity, or both.

c. The discharger may be required to conduct instream monitoring or other analyses in conjunction with the TRE. If at any time during the course of conducting a TRE there are three consecutive follow-up toxicity test results for the diluted sample which are not positive, the discharger will be considered as in compliance and work on the TRE may cease. WET testing shall then resume as specified in the operation permit. Nothing in these rules shall preclude the department from taking enforcement action beyond that described in these rules.

d. When the pretest chemical analysis for un-ionized ammonia nitrogen (NH₃-N) or TRC on the diluted effluent sample exceeds the concentrations given below, a positive test result is likely to have been caused by high concentrations of un-ionized NH₃-N or TRC, and the test result will not be used to determine if follow-up testing is needed.

(1) Un-ionized NH₃-N—0.9 mg/l

(2) TRC—0.1 mg/l

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

567—63.5(455B) Self-monitoring and reporting for animal feeding operations.

63.5(1) The following self-monitoring requirements may be imposed on an animal feeding operation in any operation permit issued for such an operation.

a. Measurement of liquid level in a waste storage facility on a periodic basis.

b. Measurement of daily precipitation, as appropriate.

c. Sampling and analysis of groundwater as necessary to determine effects of wastewater application.

d. Other measurements necessary to evaluate the adequacy of a waste disposal system.

63.5(2) Reports of the self-monitoring results shall be submitted to the appropriate regional department field office (hereafter referred to as FO) quarterly. The quarterly reports shall cover the periods January through March, April through June, July through September, and October through December. The quarterly report for each period shall be submitted by the tenth day of the month following the quarter being reported.

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

567—63.6(455B) Bypasses and upsets.

63.6(1) *Prohibition.* Bypasses from any portion of a treatment facility or from a sanitary sewer collection system designed to carry only sewage are prohibited. The department may not assess a penalty against a permittee for a bypass if the permittee has complied with all of the following:

- a. The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- c. The permittee submitted the information required in 63.6(2), 63.6(3), and 63.6(5).

63.6(2) *Request for anticipated bypass.* Except for bypasses that occur as a result of mechanical failure or acts beyond the control of the owner or operator of a waste disposal system (unanticipated bypasses), the owner or operator shall obtain written permission from the department prior to any discharge of sewage or wastes from a waste disposal system not authorized by a discharge permit. The director may approve an anticipated bypass after considering its adverse effects if the director determines that it will meet the conditions in 63.6(1).

- a. The request for a bypass shall be submitted in writing to the appropriate FO at least ten days prior to the expected date of the event.
- b. The request shall include all of the following:
 - (1) The reason for the bypass;
 - (2) The date and time the bypass will begin;
 - (3) The expected duration of the bypass;
 - (4) An estimate of the amount of untreated or partially treated sewage or wastewater that will be discharged;
 - (5) The location of the bypass;
 - (6) The name of any body of surface water that will be affected by the bypass; and
 - (7) Any actions the owner or operator proposes to take to mitigate the effects of the bypass upon the receiving stream or other surface water.

63.6(3) *Notification of unanticipated bypass or upset and public notices (PNs).* In the event that a bypass or upset occurs without prior notice having been provided pursuant to 63.6(2) or as a result of mechanical failure or acts beyond the control of the owner or operator, the owner or operator of the treatment facility or collection system shall notify the department by telephone as soon as possible but not later than 24 hours after the onset or discovery.

a. Notification shall be made by contacting the appropriate FO. After-hours notification may be made by calling the Department of Natural Resources emergency response hotline at 515.725.8694.

b. Notification shall include information on as many items listed in 63.6(3)“d”(1) through 63.6(3)“d”(6) as available information will allow.

c. Upon notification, the department shall determine if a PN for an unanticipated bypass is necessary. If the department determines that a PN is necessary, the owner or operator of the treatment facility or the collection system shall prepare a PN.

d. A written submission describing the bypass shall also be provided to the appropriate FO within five days of the time the permittee becomes aware of the bypass. The written submission shall contain the following:

- (1) The reason for the bypass, including the amount and duration of any rainfall event that may have contributed to the bypass;
- (2) The date and time of onset or discovery of the bypass;
- (3) The duration of the bypass;
- (4) An estimate of the amount of untreated or partially treated sewage or wastewater that was discharged;
- (5) The location of the bypass; and
- (6) The name of any body of surface water that was affected by the bypass.

63.6(4) *Monitoring, disinfection, and cleanup.* The owner or operator of the treatment facility or collection system shall perform any additional monitoring, sampling, or analysis of the bypass or upset requested by the FO and shall comply with department instructions intended to minimize the effect of a bypass or upset on the receiving water of the state. In addition, the department may require the following:

- a. Temporary disinfection, depending on the volume and duration of the bypass, the classification of the stream affected by the bypass, and the time of year during which the bypass occurs;
- b. Cleanup of any debris and waste materials deposited in the area affected by the bypass; or
- c. Lime application to the ground surface or disinfection of the affected area with chlorine solution.

63.6(5) *Reporting of subsequent findings and additional information requested by the department.* All subsequent findings and laboratory results concerning a bypass shall be submitted in writing to the appropriate FO as soon as they become available. Any additional information requested by the department concerning the steps taken to minimize the effects of a bypass shall be submitted within 30 days of the request.

63.6(6) *Upset.* 40 CFR §122.41(n) is adopted by reference.

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

567—63.7(455B) Submission of operation records.

63.7(1) *Electronic reporting.*

a. Except as provided in this rule and 63.3(4) and 63.5(2), operation records required by NPDES permits shall be submitted electronically to the department within 15 days following the close of the reporting period specified in 63.7(5) and in accordance with monitoring requirements derived from this chapter and incorporated in the NPDES permit.

b. Operation records required by operation permits shall be submitted to the department within 15 days following the close of the reporting period specified in 63.7(5) and in accordance with monitoring requirements derived from this chapter and incorporated in the operation permit.

63.7(2) *Temporary or permanent paper submittal of operation records.* Upon satisfaction of the following criteria and written approval from the department, temporary or permanent paper submittal of operation records may be allowed in lieu of electronic reporting.

a. *Written request for paper submittal.*

(1) To obtain an approval for temporary or permanent paper submittal of operation records, a permittee must submit a paper copy of a written request to the department's NPDES section. The written request for paper submittal must include all of the following:

1. The facility name;
2. The individual NPDES permit number or GP authorization number;
3. The facility address;
4. The owner's name and contact information;
5. The name and contact information of the person submitting operation records (if different than the owner); and
6. The reason for the request, including a justification of why electronic submission is not feasible at this time.

(2) Requests for paper submittal that do not contain all of the above information will not be considered. Electronic (email) requests for paper submittal will not be considered.

b. *Temporary paper submittal.*

(1) The department will approve or deny a request for temporary paper submittal of operation records within 60 days of receipt. Paper submittal requests shall be approved or denied at the director's discretion.

(2) All approvals for temporary paper submittal will expire five years from department approval. After an approval for temporary paper submittal expires, the permittee must submit all operation records electronically, unless another approval is obtained.

(3) Approved temporary paper submittals are nontransferable.

c. *Permanent paper submittal.*

(1) The department will approve or deny a request for permanent paper submittal of operation records within 60 days of receipt. Permanent paper submittal approvals shall only be granted to facilities and entities owned or operated by members of religious communities that choose not to use certain modern

technologies (e.g., computers, electricity). Permanent approvals for paper submittal shall not be granted to any other facilities or entities.

(2) Approved permanent paper submittals are nontransferable.

d. *Paper copies of operation records.* All permittees who have received temporary or permanent paper submittal approvals must submit paper copies of all operation records to the department within 15 days following the close of the reporting period specified in 63.7(5) and in accordance with monitoring requirements derived from this chapter and incorporated in the NPDES permit.

63.7(3) *Electronic reporting pursuant to NPDES general permits (GPs).* Both electronic and paper reporting options are available to permittees covered under GP No. 5. Paper operation records are accepted under GP No. 4.

63.7(4) *Episodic paper submittal of operation records.* In accordance with this subrule, episodic paper submittal of operation records may be allowed in lieu of electronic reporting. The department shall provide notice, individually or through means of mass communication, regarding when episodic paper submittal is allowed, the facilities and entities that qualify for episodic paper submittal, and the likely duration of episodic paper submittal. The department shall determine if and when episodic paper submittal is warranted.

a. Episodic paper submittal is only allowed under the following circumstances:

(1) Large-scale emergencies involving catastrophic circumstances beyond permittee control, such as forces of nature (e.g., hurricanes, floods, fires, earthquakes) or other national disasters.

(2) Prolonged electronic reporting system outages (i.e., outages longer than 96 hours).

b. Permittees are not required to request episodic paper submittal. If the department determines that episodic paper submittal is warranted, a permittee shall submit paper copies of all operation records to the department within 15 days following the close of the reporting period specified in 63.7(5) and in accordance with monitoring requirements derived from this chapter and incorporated in the NPDES permit.

c. Episodic paper submittal is not transferable and cannot last more than 60 days.

63.7(5) *Submission frequency.* Except as provided in 63.3(4) and 63.5(2), or as specified in an NPDES GP issued in accordance with 567—subrule 60.4(2), operation records required by these rules shall be submitted at monthly intervals. The department may vary the submission frequency in certain cases for only non-NPDES permits. Variation from the monthly interval shall be made only under such conditions as the department may prescribe in writing to the permittee.

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

567—63.8(455B) Operation records; content, forms, certification, and signature.

63.8(1) *Content.* Operation records shall include the results of all monitoring specified in or authorized by this chapter or incorporated in the operation permit. The results of any additional monitoring for parameters included in the operation permit performed at the compliance monitoring point and analyzed according to 40 CFR Part 136 shall be included in the calculation and reporting of any data submitted in accordance with this chapter and the operation permit.

63.8(2) *Forms.* Operation record forms shall be those provided by the department unless a permittee has obtained department approval to use an alternative reporting form. Properly completed reporting forms and all attachments shall be submitted in accordance with department instructions.

63.8(3) *Certification and signatory requirements.* All operation records required by these rules shall include certification that attests that all information contained therein is representative and accurate. Each operation record, including those for operation permits, shall be signed in accordance with 40 CFR §122.22. For electronic submissions of operation records, a signed paper copy of the record that was submitted electronically must be maintained at the facility for a minimum of three years.

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

567—63.9(455B) Other reporting and notice.

63.9(1) *Twenty-four-hour reporting.* Pursuant to 40 CFR §122.41(l)(6), all permittees shall report any permit noncompliance that may endanger human health or the environment. Information shall be provided orally to the appropriate FO within 24 hours from the time the permittee becomes aware of the

circumstances. In addition, a written submission containing the information required in 40 CFR §122.41(l)(6)(i) must be provided to the appropriate FO within five days of the occurrence.

63.9(2) *Planned changes.* Pursuant to 40 CFR §122.41(l)(1), a permittee shall give notice to the appropriate FO 30 days prior to any planned physical alterations or additions to the permitted facility.

63.9(3) *Anticipated noncompliance.* Pursuant to 40 CFR §122.41(l)(2), a permittee shall give advance notice to the appropriate FO of any activity which may result in noncompliance with permit requirements.

63.9(4) *Other noncompliance.* Pursuant to 40 CFR §122.41(l)(7), a permittee shall provide a written description of all instances of noncompliance not reported under 63.9(1) or 567—subrule 60.7(4) at the time operation records are submitted. The written description shall contain the information required in 40 CFR §122.41(l)(6)(i).

63.9(5) *Notice exemption.* Notice under this subrule is only required when previous notice has not been given to any other section of the department.

63.9(6) *Other information.* Pursuant to 40 CFR §122.41(l)(8), if a permittee becomes aware that it failed to submit any relevant facts in any report to the director, the permittee shall promptly submit such facts or information.

63.9(7) *Applicability.* The other reporting and notice requirements in this rule apply to all NPDES permits and apply as specified in operation permits.

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

567—63.10(455B) Sampling procedures for monitoring wells. The following steps shall be taken prior to monitoring well sampling.

63.10(1) Measure depth from top of well head casing to water table.

63.10(2) Calculate quantity of water to be flushed from well using the formula:

Gallons to be pumped = $0.221 d^2 h$, where:

d = well diameter in inches

h = depth in feet of standing water in well prior to pumping

63.10(3) Pump well.

63.10(4) Measure depth from well head casing to water table after pumping.

63.10(5) Wait for well to recharge to or near static water level prior to sampling.

[ARC 9205C, IAB 5/14/25, effective 6/18/25]

**Table I — Minimum Self-Monitoring in Permits for Organic Waste Dischargers
Controlled Discharge Wastewater Treatment Plants**

Wastewater Parameter	Sampling ⁵ Location	Sample Type ⁴	Frequency by PE ^{1,5,6}			
			<100	101-500	501-1,000	>1,001
Flow ²	Raw	24-Hr Total	1/Week	Daily	Daily	Daily
	Final	Instantaneous	2/Week During Drawdown	Daily During Drawdown		
BOD ₅	Raw	24-Hr Composite	--	--	--	1/3 Months
CBOD ₅	Cell Contents	Grab	At least two weeks prior to drawdown ³			
	Final	Grab	1/Drawdown ⁷	Twice during drawdown		
Total Suspended Solids (TSS)	Cell Contents	Grab	At least two weeks prior to drawdown ³			
	Raw	24-Hr Composite	--	--	--	1/3 Months
	Final	Grab	1/Drawdown ⁷	Twice during drawdown		
Ammonia Nitrogen (NH3-N)	Final	Grab	1/Drawdown	Twice during drawdown		
<i>E. coli</i>	Final	Grab	Twice During Drawdown			
pH ⁸	Raw	Grab	--	--	--	1/3 Months
	Final	Grab	1/Drawdown	1/Drawdown	Twice During Drawdown	1/Week During Drawdown
Cell Depth ⁹	Each Cell	Measurement	1/Week	1/Week	1/Week	2/Week
Total Residual Chlorine (TRC) ¹⁰	Final	Grab	1/Drawdown	1/Drawdown	Twice during drawdown	

- 1 - The PE (population equivalent) shall be computed on the basis of the original engineering design criteria for the facility and any modifications thereof. Where such design criteria are not available, the PE shall be computed using 0.167 pounds of BOD₅ per capita per day.
- 2 - Facilities serving a PE less than 100 are not required to provide continuous flow measurement but are required to provide manual flow measurement at the specified frequency. Facilities serving a PE greater than 100 must provide continuous flow measurement of the raw waste but need only provide manual flow measurement of the final effluent. Acceptable flow measurement and recording techniques shall be those described in the Iowa Wastewater Facilities Design Standards, effective June 18, 2025.
- 3 - The sampling that is required at least two weeks prior to lagoon drawdown (pre-discharge sampling) shall be collected at a point near the outlet structure and analyzed at least two weeks prior to an anticipated discharge to demonstrate that the wastewater is of such quality to meet the effluent limitations in the permit. The CBOD₅ and TSS results must be compared with the 30-day average effluent limits. If the results are less than the 30-day average limits, the permittee may isolate the final cell and draw down the lagoon cell. If the pre-discharge sample results exceed the 30-day average effluent limits for either CBOD₅ or TSS, the permittee must contact the appropriate FO for guidance before beginning to discharge.
- 4 - Sample types are defined as follows:

“Grab Sample” means a representative, discrete portion of sewage, industrial waste, other waste, surface water or groundwater taken without regard to flow rate.

“24-Hour Composite” means:

 - a. A sample made by collecting a minimum of six grab samples taken four hours apart and combined in proportion to the flow rate at the time each grab sample was collected, unless otherwise noted in b. Generally, grab samples should be collected at 8 a.m., 12 p.m. (noon), 4 p.m., 8 p.m., 12 a.m. (midnight), and 4 a.m. on weekdays (Monday through Friday) unless local conditions indicate another more appropriate time for sample collection.
 - b. For a POTW with an SIU, a sample made by collecting a minimum of 12 grab samples taken two hours apart and combined in proportion to the flow rate at the time each grab sample was collected. Generally, grab samples should be collected at 8 a.m., 10 a.m., 12 p.m. (noon), 2 p.m., 4 p.m., 6 p.m., 8 p.m., 10 p.m., 12 a.m. (midnight), 2 a.m., 4 a.m., and 6 a.m. on weekdays (Monday through Friday) unless local conditions indicate another more appropriate time for sample collection.
 - c. An automatic composite sampling device may also be used for collection of flow-proportioned or time-proportioned composite samples.

- 5 - Raw wastewater samples shall be taken continuously (year-round) at the specified frequency. Final effluent wastewater samples shall be taken only during the drawdown period. The first final effluent sample shall be taken the third day after the drawdown begins, and subsequent samples shall be taken at the specified frequencies. For final effluent samples that are required to be taken twice during drawdown, the first sample shall be taken the third day after the drawdown begins, and the second sample shall be taken between three and five days before the drawdown ends.
- 6 - If a facility has a PE greater than 3,000 or an SIU, additional monitoring may be required.
- 7 - One-cell controlled discharge lagoon facilities with a PE less than 100 must perform final effluent sampling for CBOD₅ and TSS twice during drawdown in accordance with superscript #5.
- 8 - pH can be monitored using electrometric measurement or an automated electrode, pursuant to 40 CFR Part 136.
- 9 - Cell Depth monitoring must be conducted year-round (not exclusively during drawdown periods). It may be applied to lagoon cells at continuous discharge wastewater treatment facilities on a case-by-case basis.
- 10 - TRC monitoring is only required for facilities with TRC effluent limitations.

**Table II — Minimum Self-Monitoring in Permits for Organic Waste Dischargers
Continuous Discharge Wastewater Treatment Plants**

Wastewater Parameter	Sampling Location	Sample Type ^{3,11}	Frequency by PE ^{1,6}					
			≤ 100	101-500	501-1,000	1,001-3,000	3,001-15,000	>15,001
Flow ²	Raw or Final	24-Hr Total	1/week	Daily	Daily	Daily	Daily	Daily
BOD ₅	Raw	24-Hr Comp.	1/6 Months	1/3 Months	1/Week	1/Week	2/Week	2-5/Week ⁵
CBOD ₅	Final	24-Hr Comp.	1/3 Months	1/Month	1/Week	1/Week	2/Week	2-5/Week ⁵
Total Suspended Solids (TSS)	Raw	24-Hr Comp.	1/6 Months	1/3 Months	1/Month	1/2 Weeks	1/Week	2-5/Week ⁵
	Final	24-Hr Comp.	1/3 Months	1/3 Months	1/Month	1/2 Weeks	1/Week	2-5/Week ⁵
Ammonia Nitrogen (NH ₃ -N) ¹⁰	Final	24-Hr Comp.	1/Month	1/Month	1/Week	1/Week	2/Week	2-5/Week ⁵
TKN ⁸	Raw	24-Hr Comp.	—	—	—	—	1/Month	1/Month
Total Nitrogen ⁹	Final	24-Hr Comp.	—	—	—	—	1/3 Months	1/2 Months
Total Phosphorus ⁹	Final	24-Hr Comp.	—	—	—	—	1/3 Months	1/2 Months
pH ¹²	Raw	Grab	—	—	1/Week	1/Week	2/Week	2-5/Week ⁵
	Final	Grab	1/3 Months	1/Month	1/Week	1/Week	2/Week	5/Week
<i>E. coli</i> ^{4,7}	Final	Grab	5 samples, 1/3 Months	5 samples, 1/3 Months	5 samples, 1/3 Months	5 samples, 1/3 Months	5 samples, 1/3 Months	5 samples, 1/3 Months
Temperature	Raw	Grab	—	—	1/Week	1/Week	2/Week	2-5/Week ⁵
	Final	Grab	1/3 Months	1/Month	1/Week	1/Week	2/Week	2-5/Week ⁵
Total Residual Chlorine (TRC) ¹³	Final	Grab	1/Week	1/Week	2/Week	2/Week	3/Week	5/Week

- 1 - See Superscript #1, Table I.
- 2 - See Superscript #2, Table I. Both raw and final flow monitoring may be required if the raw and final wastewater flows may be different for any reason.
- 3 - See Superscript #4, Table I.
- 4 - Analysis is required only when the facility discharges directly to a stream designated as Class A1, A2, or A3 in 567—Chapter 61 or there is a reasonable potential for the discharge to affect a stream designated as Class A1, A2, or A3.
- 5 - The frequency of sample collection and analysis shall be increased by 1/week according to the following: 15,001 to 30,000 – 2/week; 30,001 to 45,000 – 3/week; 45,001 to 75,000 – 4/week; > 75,001 – 5/week.
- 6 - The requirements for SIUs shall be those specified in the permit for final effluent monitoring.
- 7 - Bacteria Monitoring. All facilities must collect and analyze a minimum of five *E. coli* samples in one calendar month during each three-month period (quarter) during the appropriate recreation season associated with the receiving stream designation as specified in 567—subrule 61.3(3). For sampling required during the recreational season, March 15 to November 15, the three-month periods are March through May, June through August, and September through November. For year-round sampling, the three-month periods are January through March, April through June, July through September, and October through December. For each three-month period, the operator must take five samples during one calendar month, resulting in 15 samples in one year for sampling required during the recreation season and 20 samples per year for sampling required year-round. The following requirements apply to the individual samples collected in one calendar month:

- a. Samples must be spaced over one calendar month.
- b. No more than one sample can be collected on any one day.
- c. There must be a minimum of 48 hours between each sample.
- d. No more than two samples may be collected in a period of seven consecutive days.

The geometric mean must be calculated using all valid sample results collected during a month. The geometric mean formula is as follows: Geometric Mean = (Sample one × Sample two × Sample three × Sample four × Sample five...Sample N)^(1/N), which is the Nth root of the result of the multiplication of all of the sample results where N = the number of samples. If a sample result is a less than value, the value reported by the lab without the less than sign shall be used in the geometric mean calculation.

- 8 - Additional TKN monitoring may be required if the facility has one or more significant industrial users or has effluent ammonia violations.
- 9 - Total nitrogen (as N) is defined as TKN (as N) plus nitrate (as N) plus nitrite (as N). Nitrate + nitrite can be analyzed together or separately. Total phosphorus shall be reported as P. Analyses must be performed by a laboratory certified in Iowa.
- 10 - NH₃-N monitoring is only required for facilities with NH₃-N effluent limitations.
- 11 - For aerated lagoons, 24-hour composite samples are not required on the final effluent; grab samples are acceptable.
- 12 - See Superscript #8, Table I.
- 13 - See Superscript #10, Table I.

These rules are intended to implement Iowa Code section 455B.173.

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- ¹ April 15, 2009, effective date of Items 27 and 33 to 38 of ARC 7625B delayed 70 days by the Administrative Rules Review Committee at its meeting held April 8, 2009; at its meeting held April 28, 2009, the Committee voted to lift the delay, effective April 29, 2009.

CHAPTER 64
WASTEWATER CONSTRUCTION AND OPERATION PERMITS

[Prior to 7/1/83, DEQ Ch 19]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded **ARC 9203C**, IAB 5/14/25, effective 6/18/25

CHAPTER 65
ANIMAL FEEDING OPERATIONS

[Prior to 7/1/83, DEQ Ch 20]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter exempt from chapter rescission pursuant to Iowa Code section 17A.7

DIVISION I
GENERAL PROVISIONS

The provisions in Division I apply to all confinement feeding operations, open feedlot operations, animal truck washes, dry bedded confinement feeding operations, and associated manure and waste storage structures, unless otherwise noted in this chapter.

The following acronyms will be used throughout this chapter:

“AFO” means animal feeding operation.

“CAFO” means concentrated animal feeding operation.

“MMP” means manure management plan.

“NMP” means nutrient management plan.

“NPDES” means National Pollutant Discharge Elimination System.

567—65.1(455B,459,459A,459B) Definitions and incorporation by reference. In addition to the definitions in Iowa Code sections 455B.101, 455B.171, 459.102, 459A.102, and 459B.102 and in 567—Chapter 60, the following definitions shall apply to this chapter:

65.1(1) Definitions.

“*Abandoned AFO structure*” means the AFO structure has been razed, removed from the site of an AFO, filled in with earth, or converted to uses other than an AFO structure so that it cannot be used as an AFO structure without significant reconstruction.

“*Adjacent*” for open feedlot operation. Two or more open feedlot operations are defined as adjacent if both of the following occur:

1. At least one open feedlot operation structure is constructed on or after July 17, 2002; and
2. An open feedlot operation structure that is part of one open feedlot operation is separated by less than 1,250 feet from an open feedlot operation structure that is part of the other open feedlot operation.

“*Adjacent—air quality*” for confinement feeding operations means, for the purpose of determining separation distance requirements pursuant to rule 567—65.106(455B,459,459B), that two or more confinement feeding operations are adjacent if they have AFO structures that are separated at their closest points by less than the following:

1. 1,250 feet for a confinement feeding operation having an animal unit capacity of less than 1,250 animal units for swine maintained as part of a farrowing and gestating operation, less than 2,700 animal units for swine maintained as part of a farrow-to-finish operation, less than 4,000 animal units for cattle maintained as part of a cattle operation, or less than 3,000 animal units for any other confinement feeding operation, or for a confinement feeding operation consisting of dry bedded confinement feeding operation structures.
2. 1,500 feet for a confinement feeding operation having an animal unit capacity of 1,250 or more but less than 2,000 animal units for swine maintained as part of a swine farrowing and gestating operation, 2,700 or more but less than 5,400 animal units for swine maintained as part of a farrow-to-finish operation, 4,000 or more but less than 6,500 animal units for cattle maintained as part of a cattle operation, or for any other confinement feeding operation having an animal unit capacity of 3,000 or more but less than 5,000 animal units.
3. 2,500 feet for a confinement feeding operation having an animal unit capacity of 2,000 or more animal units for swine maintained as part of a swine farrowing and gestating operation, 5,400 or more animal units for swine maintained as part of a farrow-to-finish operation, or 6,500 or more animal units for

cattle maintained as part of a cattle operation, or for any other confinement feeding operation with 5,000 or more animal units.

The distances in paragraphs “1” to “3” above shall only be used to determine that two or more confinement feeding operations are adjacent if at least one confinement feeding operation structure was constructed on or after March 21, 1996.

To determine if two or more confinement feeding operations are adjacent, for the purpose of determining the separation distance requirements, the animal unit capacity of each individual operation shall be used. If two or more confinement feeding operations do not have the same animal unit capacity, the greater animal unit capacity shall be used to determine the separation distance.

Dry manure that is stockpiled within a distance of 1,250 feet from another stockpile shall be considered part of the same stockpile.

“*Adjacent—water quality*” for confinement feeding operations means, for the purpose of determining the construction permit requirements pursuant to rule 567—65.103(455B,459,459B) and MMP requirements pursuant to rule 567—65.110(455B,459,459B), that two or more confinement feeding operations are adjacent if they have confinement feeding operation structures that are separated at their closest points by less than the following:

1. 1,250 feet for confinement feeding operations having a combined animal unit capacity of less than 1,000 animal units.

2. 2,500 feet for confinement feeding operations having a combined animal unit capacity of 1,000 or more animal units.

3. The distances in paragraphs “1” and “2” above shall only be used to determine that two or more confinement feeding operations are adjacent if at least one confinement feeding operation structure is constructed or expanded on or after May 21, 1998.

“*Aerobic structure*” means an AFO structure other than an egg washwater storage structure which relies on aerobic bacterial action which is maintained by the utilization of air or oxygen and which includes aeration equipment to digest organic matter. Aeration equipment shall be used and shall be capable of providing oxygen at a rate sufficient to maintain an average of 2 milligrams per liter dissolved oxygen concentration in the upper 30 percent of the depth of manure in the structure at all times.

“*AFO structure*” means a confinement building, manure storage structure, dry bedded confinement feeding operation structure, or egg washwater storage structure.

“*Agricultural drainage well*” means a vertical opening to an aquifer or permeable substratum which is constructed by any means including but not limited to drilling, driving, digging, coring, augering, jetting, or washing and which is capable of intercepting or receiving surface or subsurface drainage water from land directly or by a drainage system.

“*Agricultural drainage well area*” means an area of land where surface or subsurface water drains into an agricultural drainage well directly or through a drainage system connecting to the agricultural drainage well.

“*Alluvial aquifer area*” means an area underlaid by sand or gravel aquifers situated beneath floodplains along stream valleys and includes alluvial deposits associated with stream terraces and benches, contiguous windblown sand deposits, and glacial outwash deposits.

“*Alluvial soils*” means soils formed in materials deposited by moving water.

“*Alternative technology settled open feedlot effluent control system*” or “*AT system*” means use of an open feedlot effluent control technology other than a conventional runoff containment system to control and dispose of settled open feedlot effluent.

“*Anaerobic digester system*” or “*digester*” means a manure storage structure that is covered if the primary function of the manure storage structure is to process manure by employing environmental conditions including bacteria to break down organic matter in the absence of oxygen, and the structure is used for producing, collecting, and utilizing a biogas.

“*Anaerobic lagoon*” means an unformed manure storage structure if the primary function of the structure is to store and stabilize manure, the structure is designed to receive manure on a regular basis, and the structure’s design waste loading rates provide that the predominant biological activity is anaerobic. An anaerobic lagoon does not include the following:

1. A runoff control basin or a settled open feedlot effluent basin that collects and stores only precipitation-induced runoff from an open feedlot operation.

2. An anaerobic treatment system that includes collection and treatment facilities for all off gases.

“Animal” means cattle, swine, horses, sheep, chickens, turkeys, goats, fish, or ducks.

“Animal capacity” means the maximum number of animals that the owner or operator will confine in an AFO at any one time. The animal capacity shall be what is currently approved or permitted on the site and is listed in the MMP or NMP, unless a portion of the facility has been properly closed or taken out of operation through the small AFO election as provided in paragraph 65.110(1) “f.” In a confinement feeding operation, the animal capacity of all confinement buildings will be included in the determination of the animal capacity of the operation, unless the building has been abandoned, in accordance with the definition of “abandoned AFO structure.”

“Animal feeding operation” or *“AFO”* means a lot, yard, corral, building, or other area in which animals are confined and fed and maintained for 45 days or more in any 12-month period, and all structures used for the storage of manure from animals in the operation. Except as required for an NPDES permit required pursuant to the Act, an AFO does not include a livestock market. Open feedlot operations and confinement feeding operations are considered to be separate AFOs.

“Animal truck wash effluent” means a combination of manure, washwater-induced runoff, or other runoff derived from an animal truck wash facility, which may include solids.

“Animal truck wash effluent structure” means an impoundment that is part of an animal truck wash facility, if the primary function of the impoundment is to collect and store animal truck wash effluent.

“Animal truck wash facility” means an operation engaged solely in washing single-unit trucks, truck-tractors, semitrailers, or trailers used to transport animals. An animal truck wash facility is considered to be part of an AFO if the animal truck wash facility and the AFO are under common ownership or management and the animal truck wash facility is located within 1,250 feet of the AFO.

“Animal unit” means a unit of measurement based upon the product of multiplying the number of animals of each category by a special equivalency factor, as follows:

1. Slaughter and feeder cattle	1.00
2. Immature dairy cattle	1.00
3. Mature dairy cattle	1.400
4. Butcher or breeding swine weighing more than 55 pounds	0.400
5. Swine weighing 15 pounds or more but not more than 55 pounds	0.100
6. Sheep or lambs	0.100
7. Goats	0.100
8. Horses	2.00
9. Turkeys weighing 7 pounds or more	0.018
10. Turkeys weighing less than 7 pounds	0.0085
11. Broiler or layer chickens weighing 3 pounds or more	0.010
12. Broiler or layer chickens weighing less than 3 pounds	0.0025
13. Ducks	0.040
14. Fish weighing 25 grams or more	0.001
15. Fish weighing less than 25 grams	0.00006

“Animal unit capacity” means a measurement used to determine the maximum number of animal units that may be maintained as part of an AFO at any one time, including as provided in Iowa Code sections 459.201, 459.301, and 459A.103. For dry bedded confinement feeding operations, “animal unit capacity” means the maximum number of animal units that the owner or operator confines in a dry bedded confinement feeding operation at any one time, including the animal unit capacity of all dry bedded confinement feeding operation buildings that are used to house cattle or swine in the dry bedded confinement feeding operation. For purposes of determining whether an open feedlot operation must obtain

an NPDES permit, the animal unit capacity of the AFO shall include the animal unit capacities of both the open feedlot operation and any adjacent confinement feeding operation if all of the following occur:

1. The animals in the open feedlot operation and any adjacent confinement feeding operation are all in the same category of animals as used in the definitions of “large CAFO” and “medium CAFO” in 40 CFR Part 122;
2. The closest open feedlot operation structure is separated by less than 1,250 feet from the closest confinement feeding operation structure; and
3. The open feedlot operation and the confinement feeding operation are under common ownership or management.

“Animal weight capacity” means the sum of the average weight of all animals in a confinement feeding operation when the operation is at full animal capacity. For confinement feeding operations with only one species, the animal weight capacity is the product of multiplying the animal capacity by the average weight during a production cycle. For operations with more than one species, the animal weight capacity of the operation is the sum of the animal weight capacities for all species. This definition applies to confinement feeding operations constructed prior to March 1, 2003.

“Applicant” means the person applying for a construction permit or an NPDES permit for an AFO.

“Bedding” means crop, vegetation, sand, or forage residue or similar materials placed in a dry bedded confinement building for the care of animals.

“Business” means a commercial enterprise.

“Cemetery” means a space held for the purpose of permanent burial, entombment or interment of human remains that is owned or managed by a political subdivision or private entity or a cemetery regulated pursuant to Iowa Code chapter 523I. A cemetery does not include a pioneer cemetery as defined by Iowa Code section 331.325.

“Church” means a religious institution.

“Commercial enterprise” means a building which is used as a part of a business that manufactures goods, delivers services, or sells goods or services, which is customarily and regularly used by the general public during the entire calendar year and which is connected to electric, water, and sewer systems. A commercial enterprise does not include a farm operation.

“Commercial manure service” means a sole proprietor or business association engaged in the business of transporting, handling, storing, or applying manure for a fee.

“Commercial manure service representative” means a manager, employee, agent, or contractor of a commercial manure service, if the person is engaged in transporting, handling, storing, or applying manure on behalf of the service.

“Common management” means significant control by an individual of the management of the day-to-day operations of each of two or more AFOs. “Common management” does not include control over a contract livestock facility by a contractor as defined in Iowa Code section 202.1.

“Common ownership” for confinement feeding operations means the ownership of a confinement feeding operation as a sole proprietor, or a 10 percent or more ownership interest held by a person, in each of two or more confinement feeding operations as a joint tenant, tenant in common, shareholder, partner, member, beneficiary, or other equity interest holder. The ownership interest is a common ownership interest when it is held directly, indirectly through a spouse or dependent child, or both. The following exceptions shall apply to this definition:

1. For a confinement feeding operation structure constructed before June 19, 2024, that has not been expanded, “common ownership” means the ownership of a confinement feeding operation as a sole proprietor, or a majority ownership interest held by a person, in each of two or more confinement feeding operations as a joint tenant, tenant in common, shareholder, partner, member, beneficiary, or other equity interest holder. The majority ownership interest is a common ownership interest when it is held directly, indirectly through a spouse or dependent child, or both. This exception shall not apply to a confinement feeding structure or operation expanded after June 19, 2024; instead, the 10 percent or more ownership interest standard shall apply.

2. This definition shall not apply to a dry bedded confinement feeding operation that is subject to the common ownership requirements in Iowa Code section 459B.103(3)“a”(3) nor to an open feedlot operation as defined in this rule.

“Common ownership” for open feedlot operations means to hold an interest in each of two or more open feedlot operations as any of the following:

1. A sole proprietor;
2. A joint tenant or tenant in common; or
3. A holder of a majority equity interest in a business association as defined in Iowa Code section 202B.102, including as a shareholder, partner, member, beneficiary, or other equity interest holder.

An interest in an open feedlot operation under paragraph “2” or “3” is a common ownership interest when it is held directly or indirectly through a spouse or dependent child, or both.

“*Complete application*” means an application that is substantially complete and approvable when all necessary questions on the application forms have been completed, the application is signed and all applicable portions of the application, including the application form, required attachments, and application fees, have been submitted.

“*Concentrated AFO*” or “*CAFO*” means an AFO that is a designated CAFO, or that is defined as a large CAFO or a medium CAFO as defined in 40 CFR 122.23(b).

“*Confinement feeding operation*” means an AFO in which animals are confined to areas that are totally roofed and includes an AFO that is not an open feedlot operation as defined in this chapter.

1. For purposes of water quality regulation, Iowa Code section 459.301 provides that two or more AFOs under common ownership or management are deemed to be a single AFO if they are adjacent or utilize a common area or system for manure disposal. For purposes of the air quality-related separation distances in Iowa Code section 459.202, Iowa Code section 459.201 provides that two or more AFOs under common ownership or management are deemed to be a single AFO if they are adjacent or utilize a common system for manure storage. The distinction is due to regulation of AFOs for water quality purposes under the Act. 40 CFR 122.23 sets out the requirements for an AFO and requires that two or more AFOs under common ownership be considered a single operation if they adjoin each other or if they use a common area or system for disposal of wastes. However, this federal regulation does not control regulation of AFOs for the purposes of the separation distances in Iowa Code section 459.202, and therefore the definition is not required by federal law to include common areas for manure disposal.

2. To determine if two or more AFOs are deemed to be one AFO, the first test is whether the AFOs are under common ownership or management. If they are not under common ownership or management, they are not one AFO. For purposes of water quality regulation, the second test is whether the two AFOs are adjacent or utilize a common area or system for manure disposal. If the two operations are not adjacent and do not use a common area or system for manure disposal, they are not one AFO. For purposes of the air quality-related separation distances in Iowa Code section 459.202, the second test is whether the two AFOs are adjacent or utilize a common system for manure storage. If the two operations are not adjacent and do not use the same system for manure storage, they are not one AFO.

3. A common area or system for manure disposal includes but is not limited to use of the same manure storage structure, confinement feeding operation structure, egg washwater storage structure, stockpile, permanent manure transfer piping system or center pivot irrigation system. A common area or system for manure disposal does not include manure application fields included in a manure management plan or anaerobic digester system.

“*Confinement feeding operation building*” or “*confinement building*” means a building used in conjunction with a confinement feeding operation to house animals.

“*Confinement feeding operation structure*” means an AFO structure that is part of a confinement feeding operation.

“*Confinement site*” means a site where there is located a manure storage structure which is part of a confinement feeding operation, other than a SAFO.

“*Confinement site manure applicator*” means a person, other than a commercial manure service or a commercial manure service representative, who applies manure on land if the manure originates from a manure storage structure.

“Construction approval letter” means a written document of the department to acknowledge that the preconstruction submittal requirements of rule 567—65.104(455B,459,459B) have been met for a confinement feeding operation that is not required to obtain a construction permit pursuant to rule 567—65.103(455B,459,459B).

“Construction design statement” means a document required to be submitted by a confinement feeding operation prior to constructing a formed manure storage structure, other than a SAFO, but that does not meet the threshold engineering requirements.

“Construction permit” means a written approval of the department to construct, modify or alter the use of an AFO structure as required by rules 567—65.103(455B,459,459B) and 567—65.203(455B,459A).

“Controlling interest” means ownership of a confinement feeding operation as a sole proprietor or a majority ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary, or other equity interest holder. The majority ownership interest is a controlling interest when it is held directly, indirectly through a spouse or dependent child, or both. The majority ownership interest must be a voting interest or otherwise control management of the confinement feeding operation.

“Covered” means organic or inorganic material, placed upon an AFO structure used to store manure, which significantly reduces the exchange of gases between the stored manure and the outside air. Organic materials include but are not limited to a layer of chopped straw, other crop residue, or a naturally occurring crust on the surface of the stored manure. Inorganic materials include but are not limited to wood, steel, aluminum, rubber, plastic, or Styrofoam. The materials shall shield at least 90 percent of the surface area of the stored manure from the outside air. Cover shall include an organic or inorganic material which current scientific research shows reduces detectable odor by at least 75 percent. A formed manure storage structure directly beneath a floor where animals are housed in a confinement feeding operation is deemed to be covered.

“Critical public area” means land that is owned or managed by the federal government, by the department, or by a political subdivision and that has unique scenic, cultural, archaeological, scientific, or historic significance or contains a rare or valuable ecological system. Critical public areas include:

1. State wildlife and waterfowl refuges listed in 571—subrules 52.1(2) and 52.1(3);
2. Recreation areas, state parks, state parks managed by another governmental agency, and state preserves as listed in rule 571—61.2(461A);
3. County parks and recreation areas as provided in subrule 65.1(2);
4. National wildlife refuges listed as follows: Union Slough National Wildlife Refuge, DeSoto National Wildlife Refuge, Boyer Chute National Wildlife Refuge, Upper Mississippi River National Wildlife and Fish Refuge, Driftless Area National Wildlife Refuge, Neal Smith National Wildlife Refuge, and Port Louisa National Wildlife Refuge;
5. National monuments and national historic sites listed as follows: Effigy Mounds National Monument and Herbert Hoover National Historic Site;
6. Parks in Iowa that are under the federal jurisdiction listed with the United States Army Corps of Engineers as provided in subrule 65.1(2).

“Cropland” means any land suitable for use in agricultural production including but not limited to feed, grain and seed crops, fruits, vegetables, forages, sod, trees, grassland, pasture and other similar crops.

“Deep well” means a well located and constructed in such a manner that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

“Designated area” means a known sinkhole, abandoned well, unplugged agricultural drainage well, agricultural drainage well cistern, agricultural drainage well surface tile inlet, drinking water well, designated wetland, or water source. “Designated area” does not include a terrace tile inlet or surface tile inlet other than an agricultural drainage well surface tile inlet.

“Designated CAFO” means an AFO that has been designated as a CAFO pursuant to rule 567—65.201(455B,459A).

“Designated wetland” means land designated as a protected wetland by the United States Department of the Interior or the department, including but not limited to a protected wetland as defined in Iowa Code

section 456B.1, if the land is owned and managed by the federal government or the department. However, a designated wetland does not include land where an agricultural drainage well has been plugged causing a temporary wetland or land within a drainage district or levee district. Designated wetlands in the state are listed in the department's "Designated Wetlands in Iowa" (more information is contained in subrule 65.1(2), incorporation by reference).

"Discontinued AFO" means an AFO whose structures have been abandoned or whose use has been discontinued as evidenced by the removal of all animals and the owner or operator has no immediate plans to repopulate.

"Discontinued AFO structure" means an AFO structure that has been abandoned or whose use has been discontinued as evidenced by the removal of all animals from the structure and the owner or operator has no immediate plans to repopulate.

"Document" means any form required to be processed by the department under this chapter regulating AFOs, including but not limited to applications or related materials for permits as provided in Iowa Code section 459.303, MMPs as provided in Iowa Code section 459.312, comment or evaluation by a county board of supervisors considering an application for a construction permit, the department's analysis of the application including using and responding to a master matrix pursuant to Iowa Code section 459.304, and notices required under those sections.

"Dry bedded confinement feeding operation" means a confinement feeding operation in which cattle or swine are confined to areas which are totally roofed and in which all manure is stored as dry bedded manure. Unless specifically stated otherwise, all requirements in Divisions I and II of this chapter do apply to dry bedded confinement feeding operations.

"Dry bedded confinement feeding operation structure" means a dry bedded confinement feeding operation building or a dry bedded manure storage structure.

"Dry bedded manure" means manure from cattle or swine that meets all of the following requirements:

1. The manure does not flow perceptibly under pressure.
2. The manure is not capable of being transported through a mechanical pumping device designed to move a liquid.
3. The manure contains bedding.

"Dry bedded manure confinement feeding operation building" or *"building"* means a building used in conjunction with a confinement feeding operation to house cattle or swine and in which any manure from the animals is stored as dry bedded manure.

"Dry bedded manure storage structure" means a covered or uncovered structure, other than a building, used to store dry bedded manure originating from a confinement feeding operation.

"Dry manure" means manure that meets all of the following conditions:

1. The manure does not flow perceptibly under pressure.
2. The manure is not capable of being transported through a mechanical pumping device designed to move a liquid.
3. The constituent molecules of the manure do not flow freely among themselves but may show a tendency to separate under stress.

"Dry manure" includes manure marketed as a bulk dry animal nutrient product that is stored 1,250 feet or less from the confinement animal feeding structure from which it originated.

"Earthen manure storage basin" means an earthen cavity, either covered or uncovered, that, on a regular basis, receives manure discharges from a confinement feeding operation if accumulated manure from the basin is completely removed at least once each year.

"Earthen waste slurry storage basin" means an uncovered and exclusively earthen cavity that, on a regular basis, receives manure discharges from a confinement AFO if accumulated manure from the basin is completely removed at least twice each year and that was issued a permit, constructed or expanded on or after July 1, 1990, but prior to May 31, 1995.

"Educational institution" means a building in which an organized course of study or training is offered to students enrolled in kindergarten through grade 12 and served by local school districts, accredited or approved nonpublic schools, area education agencies, community colleges, institutions of higher education under the control of the state board of regents, and accredited independent colleges and universities.

“Egg washwater storage structure” means an aerobic or anaerobic structure used to store the wastewater resulting from the washing and in-shell packaging of eggs. It does not include a structure also used as a manure storage structure.

“Enforcement action” means an action against a person with a controlling interest in a confinement feeding operation initiated by the department or the attorney general to enforce the provisions of Iowa Code chapter 459 or 459B or rules adopted pursuant to either chapter. An enforcement action begins when the attorney general institutes proceedings in district court pursuant to Iowa Code section 455B.112. An enforcement action is pending until final resolution of the action by satisfaction of a court order, for which all judicial appeal rights are exhausted, expired, or waived.

“Family member” means a person related to another person as parent, grandparent, child, grandchild, sibling, or a spouse of such related person.

“Feed storage runoff basin” means a covered or uncovered impoundment with the primary function to collect and store runoff from a feed storage area.

“Formed animal truck wash effluent structure” means a covered or uncovered impoundment used to store effluent from an animal truck wash facility, which has walls and a floor constructed of concrete, concrete block, wood, steel, or similar materials.

“Formed manure storage structure” means a covered or uncovered impoundment used to store manure from an AFO, which has walls and a floor constructed of concrete, concrete block, wood, steel, or similar materials. Subject to department approval, similar materials may include but are not limited to plastic, rubber, fiberglass, or other synthetic materials. Materials used in a formed manure storage structure shall have the structural integrity to withstand expected internal and external load pressures.

“Formed settled open feedlot effluent basin” means a settled open feedlot effluent basin which has walls and a floor constructed of concrete, concrete block, wood, steel, or similar materials. Similar materials may include but are not limited to plastic, rubber, fiberglass, or other synthetic materials. Materials used in a formed settled open feedlot effluent basin shall have the structural integrity to withstand expected internal and external load pressures.

“Freeboard” means the difference in elevation between the liquid level and the confinement feeding operation structure’s overflow level.

“Frozen ground” means soil that is impenetrable due to frozen soil moisture but does not include soil that is only frozen to a depth of two inches or less.

“Grassed waterway” means a natural or constructed channel that is shaped or graded to required dimensions and established in suitable vegetation for the stable conveyance of runoff.

“Highly erodible land” means a field that has one-third or more of its acres or 50 acres, whichever is less, with soils that have an erodibility index of eight or more, as determined by rules promulgated by the United States Department of Agriculture.

“Human sanitary waste” means wastewater derived from domestic uses including bathroom and laundry facilities generating wastewater from toilets, baths, showers, lavatories and clothes washing.

“Incidental” means a duty which is secondary or subordinate to a primary job or function.

“Incorporation” means a soil tillage operation following the surface application of manure which mixes the manure into the upper four inches or more of soil.

“Indemnity fund” means the livestock remediation fund created in Iowa Code section 459.501.

“Injection” means the application of manure into the soil surface using equipment that discharges it beneath the surface.

“Interest” means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary, or other equity interest holder. The ownership interest is an interest when it is held directly, indirectly through a spouse or dependent child, or both.

“Karst terrain” means land having karst formations that exhibit surface and subterranean features of a type produced by the dissolution of limestone, dolomite, or other soluble rock and characterized by closed depressions, sinkholes, or caves.

“Known sinkhole” means a sinkhole that has been included in the department’s sinkhole coverage and displayed in the AFO Siting Atlas or a sinkhole known to the applicant.

“Liquid manure” means manure that meets all of the following requirements:

1. The manure flows perceptibly under pressure.
2. The manure is capable of being transported through a mechanical pumping device designated to move a liquid.
3. The constituent molecules of the liquid manure flow freely among themselves and show a tendency to separate under stress.

Liquid manure that is frozen or partially frozen is included in this definition.

“Livestock market” means any place where animals are assembled from two or more sources for public auction, private sale, or on a commission basis, which is under state or federal supervision, including a livestock sale barn or auction market, if such animals are kept for ten days or less.

“Long-term stockpile location” means an area where a person stockpiles manure for more than a total of six months in any two-year period.

“Low-pressure irrigation system” means spray irrigation equipment that discharges manure from a maximum height of nine feet in a downward direction and that utilizes spray nozzles that discharge manure at a maximum pressure of 25 pounds per square inch.

“Major water source” means a water source that is a lake, reservoir, river or stream located within the territorial limits of the state, or any marginal river area adjacent to the state, if the water source is capable of supporting a floating vessel capable of carrying one or more persons during a total of a six-month period in one out of ten years, excluding periods of flooding. Major water sources in the state are listed in Table 1 and Table 2 at iowadnr.gov/afo/rules (more information is contained in subrule 65.1(2), incorporation by reference).

“Manager” means a person who is actively involved in the operation of the commercial manure service and makes management decisions in the operation of the service.

“Man-made manure drainage system” means a drainage ditch, flushing system, or other drainage device which was constructed by human beings and is used for the purpose of transporting manure.

“Manure” means animal excreta or other commonly associated wastes of animals including but not limited to bedding, litter, or feed losses. Manure does not include wastewater resulting from the washing and in-shell packaging of eggs. For the purposes of NPDES permitting, “manure” includes manure, bedding, compost and raw materials or other materials commingled with manure or set aside for disposal. If a manure storage structure or animal truck wash effluent structure contains both manure from an AFO and animal truck wash effluent from an animal truck wash facility, the effluent shall be deemed to be manure.

“Manure storage structure” means a formed manure storage structure, an unformed manure storage structure, digester, or a dry bedded manure storage structure. A manure storage structure does not include the following: (1) egg washwater storage structure, (2) areas of a confinement building where no manure is stored, and (3) areas of a confinement building where the animals have direct contact with the manure and the manure is removed regularly during the production cycle or at the conclusion of the production cycle (referred to as the “animal production area”). An animal truck wash effluent structure may be the same as a manure storage structure that is part of the confinement feeding operation, so long as the primary function of such impoundment is to collect and store both effluent from the animal truck wash facility and manure from the confinement feeding operation.

“NPDES permit” means a written permit of the department, pursuant to the National Pollutant Discharge Elimination System (NPDES) program, to authorize and regulate the operation of a CAFO.

“NRCS” means United States Department of Agriculture Natural Resources Conservation Service.

“Nutrient management plan” or *“NMP”* means a plan that provides for the management of manure, process wastewater, settled open feedlot effluent, settleable solids, open feedlot effluent, animal truck wash effluent, including the application of effluent, as provided in rule 567—65.209(455B,459A).

“One hundred year floodplain” means the land adjacent to a major water source, if there is at least a 1 percent chance that the land will be inundated in any one year. In making the calculations, the department shall consider available maps or data compiled by the Federal Emergency Management Agency.

“Open feedlot” means a lot, yard, corral, building, or other area used to house animals in conjunction with an open feedlot operation.

“Open feedlot effluent” means a combination of manure, precipitation-induced runoff, or other runoff from an open feedlot before its settleable solids have been removed. If an open feedlot operation structure or animal truck wash effluent structure contains effluent from both an open feedlot operation and an animal truck wash facility, the animal truck wash effluent shall be deemed to be open feedlot effluent.

“Open feedlot effluent basin” means an open feedlot basin that does not settle solids before the effluent goes to the basin.

“Open feedlot operation” means an unroofed or partially roofed AFO if crop, vegetation, or forage growth or residue is not maintained as part of the AFO during the period that animals are confined in the AFO. “Open feedlot operation” includes a “partially roofed AFO” as defined in this rule. Iowa Code section 459A.103 provides that two or more open feedlot operations under common ownership or management are deemed to be a single open feedlot operation if they are adjacent or utilize a common area or system for open feedlot effluent disposal. To determine if two or more open feedlot operations are deemed to be one open feedlot operation, the first test is whether the open feedlot operations are under common ownership or management. If they are not under common ownership or management, they are not one open feedlot operation. The second test is whether the two open feedlot operations are adjacent or utilize a common area or system for open feedlot effluent disposal. If the two operations are not adjacent and do not use a common area or system for open feedlot effluent disposal, they are not one open feedlot operation.

“Open feedlot operation structure” means an open feedlot, an open feedlot effluent basin, a settled open feedlot effluent basin, a solids settling facility, or an AT system. “Open feedlot operation structure” does not include a manure storage structure as defined in Iowa Code section 459.102.

“Owner” means a person who has legal or equitable title to the property where the AFO is located or a person who has legal or equitable title to the AFO structures. “Owner” does not include a person who has a lease to use the land where the AFO is located or to use the AFO structures.

“Partially roofed AFO” means an AFO in which the animals are confined under a roof and there exists unroofed areas located on the perimeter of the roofed structure, where the animals have unrestricted access at all times. The square footage of the unroofed area shall be at least 10 percent of the square footage of the attached roofed production area. Openings or vents in the roofed portion shall not be included in the 10 percent unroofed calculation.

“Permanent vegetation cover” means land that is maintained in perennial vegetative cover consisting of grasses, legumes, or both, and includes but is not limited to pastures, grasslands or forages.

“Process wastewater” means water directly or indirectly used in the operation of the AFO for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing of pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water which comes into contact with any raw materials, products, or byproducts, including manure, litter, feed, milk, eggs or bedding.

“Production area” means that part of an AFO that includes the area in which animals are confined, the manure storage area, the raw materials storage area, egg washing and egg processing facilities, and the waste containment areas. The area in which animals are confined includes but is not limited to open lots, housed lots, feedlots, stall barns, free stall barns, milk rooms, milking centers, cow yards, barnyards, medication pens, walkers, animal walkways, confinement houses, and stables. The manure storage area includes but is not limited to lagoons, solids settling facilities, settled open feedlot effluent basins, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins and areas within berms and diversions that separate uncontaminated storm water. Also included in the definition of production area is any area used in the storage, handling, treatment, or disposal of mortalities.

“Professional engineer” or *“PE”* means a person engaged in the practice of engineering as defined in Iowa Code section 542B.2 who is issued a certificate of licensure as a PE pursuant to Iowa Code section 542B.17.

“Public thoroughfare” means a road, street, or bridge that is constructed or maintained by the state or a political subdivision.

“Public use area” means that portion of land owned by the United States, the state, or a political subdivision with facilities that attract the public to congregate and remain in the area for significant periods of time. Facilities include but are not limited to picnic grounds, campgrounds, cemeteries, lodges and cabins, shelter houses, playground equipment, swimming beaches at lakes, and fishing docks, fishing houses, fishing jetties or fishing piers at lakes. It does not include a highway, road right-of-way, parking areas, recreational trails or other areas where the public passes through but does not congregate or remain in the area for significant periods of time.

“Public water supply” (also referred to as a system or a water system) means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Such term includes (1) any collection, treatment, storage, and distribution facilities under control of the supplier of water and used primarily in connection with such system, and (2) any collection (including wells) or pretreatment storage facilities not under such control that are used primarily in connection with such system. A public water supply system is either a “community water system” or a “noncommunity water system.”

“Q100,” as defined in rule 567—70.2(455B,481A), means a flood having a 1 percent chance of being equaled or exceeded in any one year as determined by the department.

“Qualified confinement feeding operation” means a confinement feeding operation that has an animal unit capacity of:

1. 5,333 or more for animals other than swine as part of a farrowing and gestating operation or farrow-to-finish operation or cattle as part of a cattle operation.
2. 2,500 or more for a swine farrowing and gestating operation, not including replacement breeding swine if the following apply:

- The replacement breeding swine are raised at the confinement feeding operation; and
 - The replacement breeding swine are used in the farrowing and gestation operation.
3. 5,400 or more for a swine farrow-to-finish operation.
 4. 8,500 or more for a confinement feeding operation maintaining cattle.

“Qualified stockpile cover” means a barrier impermeable to precipitation that is used to protect a stockpile from precipitation.

“Qualified stockpile structure” means a building or roofed structure that is all of the following:

1. Impermeable to precipitation.
2. Constructed using wood, steel, aluminum, vinyl, plastic, or other similar materials.
3. Constructed with walls or other means to prevent precipitation-induced surface runoff from contacting the stockpile.

“Release” means an actual, imminent or probable discharge of manure, process wastewater, open feedlot effluent, settled open feedlot effluent, or settleable solids from an AFO or animal truck wash facility to surface water, groundwater, drainage tile line or intake or to a designated area resulting from storing, handling, transporting or land-applying manure, process wastewater, open feedlot effluent, settled open feedlot effluent, or settleable solids.

“Religious institution” means a building in which an active congregation is devoted to worship.

“Research college” means an accredited public or private college or university, including but not limited to a university under control of the state board of regents as provided in Iowa Code chapter 262, or a community college under the jurisdiction of a board of directors for a merged area as provided in Iowa Code chapter 260C, if the college or university performs research or experimental activities regarding animal agriculture or agronomy.

“Residence” means a house or other building, including all structures attached to the building, not owned by the owner of the AFO that meets all of the following criteria at the location of the intended residence:

1. Used as a place of habitation for humans on a permanent and frequent basis.
2. Not readily mobile.

3. Connected to a permanent source of electricity, a permanent private water supply or a public water supply system and a permanent domestic sewage disposal system including a private, semipublic or public sewage disposal system.

4. Assessed and taxed as real property.

If a house or other building has not been occupied by humans for more than six months in the last two years, or if a house or other building has been constructed or moved to its current location within the past six months, the owner of the intended residence has the burden of proving that the house or other building is a residence. Paragraph “3” shall not apply to a house or other building inhabited by persons who are exempt from the compulsory education standards of Iowa Code section 299.24 and whose religious principles or tenets prohibit the use of the utilities listed.

“*Restricted spray irrigation equipment*” means spray irrigation equipment that disperses manure through an orifice at a rate of 80 pounds per square inch or more.

“*School*” means an educational institution.

“*Seasonal high-water table*” means the part of the soil profile closest to the soil surface that becomes saturated (usually in the spring) as observed in a monitoring well or determined by recognition of soil redoxomorphic features.

NOTE: “*Redoxomorphic features*” refers to the gleying or mottling or both that occur under saturated conditions within the soil profile.

“*Secondary containment barrier*” means a structure used to retain accidental manure overflow from a manure storage structure.

“*Settleable solids*,” “*scraped solids*,” or “*solids*” means that portion of the effluent that meets all the following requirements:

1. The solids do not flow perceptibly under pressure.
2. The solids are not capable of being transported through a mechanical pumping device designed to move a liquid.
3. The constituent molecules of the solids do not flow freely among themselves but do show the tendency to separate under stress.

“*Settled open feedlot effluent*” means a combination of manure, precipitation-induced runoff, or other runoff originating from an open feedlot operation after its settleable solids have been removed.

“*Settled open feedlot effluent basin*” or “*runoff control basin*” means a covered or uncovered impoundment that is part of an open feedlot operation, if the primary function of the impoundment is to collect and store settled open feedlot effluent. An animal truck wash facility may be part of an open feedlot operation. An animal truck wash effluent structure may be the same as a settled open feedlot effluent basin that is part of the open feedlot operation, so long as the primary function of such impoundment is to collect and store effluent from both the animal truck wash facility and the open feedlot operation.

“*Shallow well*” means a well located and constructed in such a manner that there is not a continuous layer of low permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

“*Sinkhole*” means any closed depression that was caused by the dissolution or collapse of subterranean materials in a carbonate formation or in gypsum or rock salt deposits through which water may drain to the local groundwater system. Such depressions may or may not be open to the surface at times. Intermittently, sinkholes may hold water forming a pond.

“*Small AFO*” or “*SAFO*” means an AFO that has an animal unit capacity of 500 or fewer animal units.

“*Small animal truck wash facility*” means an animal truck wash facility, if all of the following apply:

1. The animal truck wash facility and all single-unit trucks, truck-tractors, semitrailers, or trailers that are washed at the facility are owned by the same person; and
2. The average total per-day volume of washwater used by the animal truck wash facility does not exceed 2,000 gallons as calculated on a monthly basis.

“*Snow-covered ground*” means soil covered by one inch or more of snow or soil covered by one-half inch or more of ice.

“Solids settling facility” means a basin, terrace, diversion, or other structure or solids removal method that is part of an open feedlot operation and which is designed and operated to remove settleable solids from open feedlot effluent. A “solids settling facility” does not include a basin, terrace, diversion, or other structure or solids removal method that retains the liquid portion of open feedlot effluent for more than seven consecutive days following a precipitation event.

“Spray irrigation equipment” means mechanical equipment used for the aerial application of manure, if the equipment receives manure from a manure storage structure during application via a pipe or hose connected to the structure, and includes a type of equipment customarily used for aerial application of water to aid the growing of general farm crops.

“Stockpile” means dry manure or dry bedded manure originating from a confinement feeding operation that is stored at a particular location outside a confinement feeding operation building or a manure storage structure. For open feedlot operations and animal truck washes, “stockpile” means any accumulation of manure, scraped solids, settleable solids or combination of manure and solids located outside of the open feedlot or animal truck wash facility or outside of an area that drains to an open feedlot or animal truck wash facility, where the scraped manure or solids are stored for less than six months.

“Stockpile dry bedded manure” means to store dry bedded manure outside a dry bedded manure confinement feeding operation building or a dry bedded manure storage structure.

“Stockpile dry manure” means to create or add to a dry manure stockpile.

“Surface water drain tile intake” means an opening to a drain tile, including intake pipes and French drains, which allows surface water to enter the drain tile without filtration through the soil profile.

“Swine farrow-to-finish operation” means a confinement feeding operation in which porcine animals are produced and in which a primary portion of the phases of the production cycle is conducted at one confinement feeding operation. Phases of the production cycle include but are not limited to gestation, farrowing, growing and finishing. At a minimum, farrowing, growing, and finishing shall be conducted at the operation with a majority of the pigs farrowed at the site finished to market weight in order to qualify as a farrow-to-finish operation.

“Threshold requirements for an engineer” means the limits, pursuant to Iowa Code section 459.303, that require that the design of a formed manure storage structure or egg washwater storage structure be prepared and signed by a PE licensed in the state of Iowa or by an engineer working for the NRCS. A confinement feeding operation that utilizes a formed manure storage structure meets threshold requirements for an engineer if any of the following apply:

1. A confinement feeding operation with an animal unit capacity of 1,250 or more animal units for swine maintained as part of a swine farrowing and gestating operation.
2. A confinement feeding operation with an animal unit capacity of 2,750 or more animal units for swine maintained as part of a swine farrow-to-finish operation.
3. A confinement feeding operation with an animal unit capacity of 4,000 or more animal units for cattle maintained as part of a cattle operation.
4. Any other confinement feeding operation with an animal unit capacity of 3,000 or more animal units.

“Unformed animal truck wash effluent structure” means a covered or uncovered impoundment used to store animal truck wash effluent, other than a formed animal truck wash effluent structure.

“Unformed manure storage structure” means a covered or uncovered impoundment used to store manure, other than a formed manure storage structure, which includes an anaerobic lagoon, aerobic structure, or earthen manure storage basin.

“Unformed settled open feedlot effluent basin” means a settled open feedlot effluent basin, other than a formed settled open feedlot effluent basin.

“Vegetative infiltration basin” or *“VIB”* means an open feedlot operation structure in which settled open feedlot effluent is discharged into a relatively flat basin area which is bermed to prevent entry or discharge of surface water flows and is planted to permanent vegetation. An extensive tile system installed at a depth of three to five feet is used to collect infiltrated settled open feedlot effluent from the VIB and discharge it into a VTA for further treatment. As opposed to wetlands, which are designed to maintain a permanent water level, a VIB is designed to maximize water infiltration into the soil and thus normally will

have standing water for only short periods of time. Removal of settleable solids is required prior to discharge of open feedlot effluent into the VIB. Soil suitability is essential to ensure adequate filtration and treatment of pollutants. Periodic harvesting of vegetation is required.

“*Vegetative treatment area*” or “*VTA*” means an open feedlot operation structure in which settled open feedlot effluent is discharged into areas that are level in one dimension and have a slight slope (less than 5 percent) in the other dimension and are planted to relatively dense permanent vegetation. Settled open feedlot effluent must be discharged evenly across the top width of the VTA and allowed to slowly flow downslope through the VTA. Level spreaders or other practices may be required to maintain even flow throughout the length of the VTA. Management to maintain a dense vegetation cover is required, as is periodic harvesting of vegetation.

“*Water of the state*” means any stream, lake, pond, marsh, watercourse, waterway, well, spring, reservoir, aquifer, irrigation system, drainage system, and any other body or accumulation of water, surface or underground, natural or artificial, public or private, that are contained within, flow through or border upon the state or any portion thereof.

“*Water source*” means a lake, river, reservoir, creek, stream, ditch, or other body of water or channel having definite banks and a bed with water flow, except lakes or ponds without outlet to which only one landowner is riparian.

“*Water well*” means an excavation that is drilled, cored, augered, washed, driven, dug, jetted, or otherwise constructed for the purpose of exploring for groundwater, monitoring groundwater, utilizing the geothermal properties of the ground, or extracting water from or injecting water into the aquifer. “*Water well*” does not include an open ditch or drain tiles or an excavation made for obtaining or prospecting for oil, natural gas, minerals, or products mined or quarried.

“*Wetted perimeter*” means the outside edge of land where the direct discharge of manure occurs from spray irrigation equipment.

65.1(2) *Incorporation by reference.* The text of the following incorporated materials is not included in this chapter. The materials are provided at iowadnr.gov/afo/rules. The materials listed below are hereby made a part of this chapter. For material subject to change, only the specific version specified in this subrule is incorporated. Any amendment or revision to a reference document is not incorporated until this subrule has been amended to specify the new version.

a. “*Act*” means the federal Water Pollution Control Act, also known as the Clean Water Act, as defined by 40 CFR 403.3 as amended through July 19, 2023;

b. “*AFO Siting Atlas*” means an online mapping tool to assist in determining compliance of potential building sites to meet regulatory requirements. The AFO Siting Atlas is located on the department’s website, and the regulatory layers are effective as of June 19, 2024. Any changes to the regulatory layers of the AFO Siting Atlas shall be done through rulemaking. Regulatory layers include: karst, one hundred year floodplains in major water sources, and sinkholes;

c. “*CFR*” or “*Code of Federal Regulations*” means the federal administrative rules adopted by the United States as amended through July 19, 2023;

d. County Parks and Recreation Areas listed in Iowa’s County Conservation System Guide to Outdoor Adventure – effective June 19, 2024;

e. Parks in Iowa under the federal jurisdiction of the United States Army Corps of Engineers listed on the United States Army Corps of Engineers’ website – effective June 19, 2024;

f. Designated Wetlands in Iowa – effective August 23, 2006;

g. Emergency spill line telephone number is 515.725.8694 – effective January 1, 2023;

h. Appendix A: Open feedlot effluent control alternatives for open feedlot operations – effective December 14, 2016;

i. Appendix B: Master matrix – effective March 1, 2003;

j. Appendix C: Design specifications—formed manure storage structures – effective March 24, 2004;

k. Table 1: Major water sources—Rivers and Streams – effective December 14, 2016;

l. Table 2: Major water sources—Lakes – effective December 14, 2016;

m. Table 3: Annual pounds of nitrogen per space of capacity – effective September 15, 2010;

- n.* Table 4: Crop nitrogen usage rate factors – effective December 14, 2016;
- o.* Table 5: Manure production per space of capacity – effective September 15, 2010;
- p.* Table 6: Required separation distances for confinement feeding operations construction on or after March 1, 2003—swine, sheep, horses, poultry, and beef and dairy cattle – effective September 15, 2010;
- q.* Table 6a: Required separation distances for confinement feeding operations constructed on or after January 1, 1999, but prior to March 1, 2003—swine, sheep, horses and poultry – effective September 15, 2010;
- r.* Table 6b: Required separation distances for confinement feeding operations constructed on or after January 1, 1999, but prior to March 1, 2003—beef and dairy cattle – effective September 15, 2010;
- s.* Table 6c: Required separation distances for confinement feeding operations constructed prior to January 1, 1999—swine, sheep, horses and poultry – effective September 15, 2010;
- t.* Table 6d: Required separation distances for confinement feeding operations constructed prior to January 1, 1999—beef and dairy cattle – effective September 15, 2010;
- u.* Table 7: Required separation distances for open feedlot operations, stockpiles from open feedlot operations, stockpiles from dry manure confinement operations and stockpiles from dry bedded confinement operations – effective September 15, 2010;
- v.* Table 8: Summary of credit for mechanical aeration – effective September 15, 2010;
- w.* List of high-quality water resources in 567—Chapter 61 – effective January 1, 2001;
- x.* NRCS Iowa Technical Note No. 25 Iowa Phosphorus Index – published March 2024;
- y.* Iowa State University Extension and Outreach publication PM 1688, “A General Guide for Crop Nutrient and Limestone Recommendations in Iowa” – published February 2023;
- z.* Iowa State University Extension and Outreach publication PMR 1003, “Using Manure Nutrients for Crop Production” – published April 2023;
- aa.* Iowa State University Extension and Outreach publication AE 3550, “How to Sample Manure for Nutrient Analysis” – published January 2021; and
- bb.* Iowa State University Extension and Outreach publication CROP 31-8, “Take a Good Soil Sample to Help Make Good Fertilization Decisions” – published December 2016.
- cc.* NRCS Iowa Agronomy Technical Note No. 29 Dominant Critical Area – published April 2024.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.2(455B,459,459A,459B) Reporting of releases. A release, as defined in rule 567—65.1(455B,459,459A,459B), shall be reported to the department as provided in this subrule. This rule does not apply to land application of manure in compliance with these rules.

65.2(1) Notification. A person storing, handling, transporting, or land-applying manure from an AFO or animal truck wash facility who becomes aware of a release shall notify the department of the occurrence of release as soon as possible but not later than six hours after the onset or discovery of the release by contacting the department’s spill line. The local police department or the office of the sheriff of the affected county shall also be contacted within the same time period if the spill involves a public roadway and public safety could be threatened. Reports made pursuant to this rule shall be confirmed in writing as provided in paragraph 65.2(1)“c.”

65.2(2) Verbal report. The verbal report of such a release should provide information on as many items listed in paragraph 65.2(1)“c” as available information will allow.

65.2(3) Written report. The written report of a release shall be submitted at the request of the department within 30 days after the verbal report of the release and contain at a minimum the following information:

- a.* The approximate location of the alleged release (including at a minimum the quarter-quarter section, township and county in which the release occurred or was discovered).
- b.* The time and date of onset of the alleged release, if known, and the time and date of the discovery of the alleged release.
- c.* The time and date of the verbal report to the department of the alleged release.
- d.* The name, mailing address and telephone number of the person reporting the alleged release.
- e.* The name, mailing address and telephone number of any other person with knowledge of the event who can be contacted for further information.

- f.* The source of the manure allegedly released (e.g., formed storage, earthen storage) and the form of the manure or process water released.
- g.* The estimated or known volume of manure allegedly released.
- h.* The weather conditions at the time of the onset or discovery of the alleged release.
- i.* If known, the circumstances under which the alleged release occurred or exists (e.g., overflow, storage structure breach, equipment malfunction or breakdown, land runoff).
- j.* The approximate location of the nearest stream or other water body that is or could be impacted by the alleged release and the approximate location to the alleged release of any known tile intakes or tile lines that could be a direct conveyance to a surface water or groundwater.
- k.* A description of any containment or remedial measures taken to minimize the impact of the alleged release.
- l.* Any information that may assist the department in evaluating the alleged release.

65.2(4) *Reporting of subsequent findings.* All subsequent findings and laboratory results should be reported and submitted in writing to the department as soon as they become available.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.3(455B,459,459A,459B) CAFOs and NPDES permits. Iowa Code sections 459B.306 and 459.311(2) require a confinement feeding operation and Iowa Code section 459A.401(2) requires an open feedlot operation that is a CAFO as defined in 40 CFR 122.23(b) to comply with applicable NPDES permit requirements pursuant to rules adopted by the commission. The following regulations are adopted by reference:

1. 40 CFR 122.21, application for a permit.
2. 40 CFR 122.23, CAFOs.
3. 40 CFR 122.42(e), additional conditions applicable to specified categories of NPDES permits.
4. 40 CFR 122.63(h), minor modification of permits.
5. 40 CFR Part 412, CAFO point source category.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.4(455B,459,459A,459B) Complaint investigations. Complaints of violations of Iowa Code chapters 455B, 459, 459A and 459B and this rule, which are received by the department or are forwarded to the department by a county, following a county board of supervisors' determination that a complainant's allegation constitutes a violation, shall be investigated by the department if it is determined that the complaint is legally sufficient and an investigation is justified.

65.4(1) If after evaluating a complaint to determine whether the allegation may constitute a violation, without investigating whether the facts supporting the allegation related to violations of the Iowa Code or this chapter are true or untrue, the county board of supervisors shall forward its finding to the department director.

65.4(2) A complaint is legally sufficient if it contains adequate information to investigate the complaint and if the allegation constitutes a violation, without investigating whether the facts supporting the allegation are true or untrue, of rules adopted by the department; Iowa Code chapters 455B, 459, 459A and 459B or environmental standards in regulations subject to federal law and enforced by the department.

65.4(3) The department in its discretion shall determine the urgency of the investigation, and the time and resources required to complete the investigation, based upon the circumstances of the case, including the severity of the threat to the quality of surface water or groundwater.

65.4(4) The department shall notify the complainant and the alleged violator if an investigation is not conducted specifying the reason for the decision not to investigate.

65.4(5) The department will notify the county board of supervisors where the violation is alleged to have occurred before doing a site investigation unless the department determines that a clear, present and impending danger to the public health or environment requires immediate action.

65.4(6) The county board of supervisors may designate a county employee to accompany the department on the investigation of any site as a result of a complaint.

65.4(7) A county employee accompanying the department on a site investigation has the same right of access to the site as the department official conducting the investigation during the period that the county

designee accompanies the department official. The county shall not have access to records required in subrule 65.111(9).

65.4(8) Upon completion of an investigation, the department shall notify the complainant of the results of the investigation, including any anticipated, pending or complete enforcement action arising from the investigation. The department shall deliver a copy of the notice to the AFO or animal truck wash facility that is the subject of the complaint, any alleged violators if different from the AFO or animal truck wash facility and the county board of supervisors of the county where the violation is alleged to have occurred.

65.4(9) When a person who is a department official, an agent of the department, or a person accompanying the department official or agent enters the premises of an AFO or animal truck wash facility, both of the following shall apply:

a. The person may enter at any reasonable time in and upon any private or public property to investigate any actual or possible violation of this chapter or the rules or standards adopted under this chapter. However, the owner or person in charge shall be notified.

(1) If the owner or occupant of any property refuses admittance to the operation, or if prior to such refusal the director demonstrates the necessity for a warrant, the director may make application under oath or affirmation to the district court of the county in which the property is located for the issuance of a search warrant.

(2) In the application, the director shall state that an inspection of the premises is mandated by the laws of this state or that a search of certain premises, areas, or things designated in the application may result in evidence tending to reveal the existence of violations of public health, safety, or welfare requirements imposed by statutes, rules or ordinances established by the state or a political subdivision thereof. The application shall describe the area, premises, or thing to be searched; give the date of the last inspection if known; give the date and time of the proposed inspection; declare the need for such inspection; recite that notice of desire to make an inspection has been given to affected persons and that admission was refused if that be the fact; and state that the inspection has no purpose other than to carry out the purpose of the statute, ordinance, or regulation pursuant to which inspection is to be made. If an item of property is sought by the director, it shall be identified in the application.

(3) If the court is satisfied from the examination of the applicant, and of other witnesses, if any, and of the allegations of the application of the existence of the grounds of the application, or that there is probable cause to believe their existence, the court may issue such search warrant.

(4) In making inspections and searches pursuant to the authority of this rule, the director must execute the warrant:

1. Within ten days after its date.
2. In a reasonable manner, and any property seized shall be treated in accordance with the provisions of Iowa Code chapters 808, 809, and 809A.
3. Subject to any restrictions imposed by the statute, ordinance or regulation pursuant to which inspection is made.

b. The person shall comply with standard biosecurity requirements customarily required by the AFO or animal truck wash facility which are necessary in order to control the spread of disease among an animal population.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.5(455B,459,459A,459B) Transfer of legal responsibilities or title. If title or legal responsibility for a permitted AFO or an animal truck wash facility is transferred, the person to whom title or legal responsibility is transferred shall be subject to all terms and conditions of the construction permit and these rules. The person to whom the construction permit was issued and the person to whom title or legal responsibility is transferred shall notify the department, in writing, of the transfer of legal responsibility or title of the operation within 30 days of the transfer. Within 30 days of receiving a written request from the department, the person to whom legal responsibility is transferred shall submit to the department all information needed to modify the construction permit to reflect the transfer of legal responsibility. A person who has been classified as a habitual violator under Iowa Code section 459.604 shall not acquire legal

responsibility or a controlling interest to any additional permitted confinement feeding operations for the period that the person is classified as a habitual violator.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.6(455B,459,459A,459B) Construction. For purposes of these rules:

65.6(1) Construction of an AFO structure, open feedlot operation structure, or animal truck effluent structure begins or an AFO structure, open feedlot operation structure, or animal truck wash effluent structure is constructed when any of the following occurs:

a. Excavation for a proposed AFO structure, open feedlot operation structure, or animal truck wash effluent structure; excavation for footings; or filling or compacting of the soil or soil amendments for a proposed AFO structure, open feedlot operation structure, or animal truck wash effluent structure.

b. Installation of forms for concrete for an AFO structure, open feedlot operation structure, or animal truck wash effluent structure.

c. Installation of piping for movement of manure within, from or between AFO structures, open feedlot operation structures, or animal truck wash effluent structures.

65.6(2) Construction does not begin upon occurrence of any of the following:

a. Removal of trees, brush, or other vegetative growth.

b. Construction of driveways or roads.

c. General earth moving for leveling at the site.

d. Installation of temporary utility services.

e. Installation of temporary or permanent groundwater lowering tiles.

65.6(3) Prohibition on construction for confinement feeding operations.

a. A person shall not construct or expand an AFO structure that is part of a confinement feeding operation, if the person is either of the following:

(1) A party to a pending action for a violation of this chapter concerning a confinement feeding operation in which the person has a controlling interest and the action is commenced in district court by the attorney general.

(2) A habitual violator.

b. A person shall not construct or expand a confinement feeding operation structure for five years after the date of the last violation committed by a person or a confinement feeding operation in which the person holds a controlling interest during which the person or operation was classified as a habitual violator under Iowa Code sections 459.317 and 459.604.

c. Paragraphs 65.6(3)“*a*” and “*b*” shall not prohibit a person from completing the construction or expansion of an AFO structure, if either of the following applies:

(1) The person has an unexpired permit for the construction or expansion of the AFO structure.

(2) The person is not required to obtain a permit for the construction or expansion of the AFO structure.

d. A person shall not construct or expand an unformed manure storage structure within an agricultural drainage well area as specified in Iowa Code sections 459.310 and 460.205.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.7(455B,459,459A,459B) Karst terrain. Except as provided for in subrules 65.7(4) and 65.7(5), the provisions of this rule shall apply to the following structures: (1) confinement feeding operation structures at confinement feeding operations with over 500 animal units, (2) settled open feedlot effluent basins at open feedlot operations requiring a construction permit, (3) egg washwater structures, (4) AT systems, and (5) animal truck wash effluent structures.

65.7(1) *Karst terrain submittal requirements.* Prior to beginning construction of a structure identified in the introductory paragraph of this rule, the person planning the construction shall determine whether the proposed structure will be located in potential “karst terrain,” as defined in subrule 65.1(1). The AFO Siting Atlas shall be used to determine if the proposed structure is in potential karst terrain. The results of the karst terrain determination shall be submitted to the department according to the following:

a. If the proposed structure is not in potential karst terrain, the person planning the construction shall submit a printed map from the AFO Siting Atlas indicating the location of the structure, with the potential

karst layer turned on, with the construction permit application documents or with the construction design statement if a construction permit is not required.

b. If the proposed formed manure storage structure is located in potential karst terrain, a PE licensed in Iowa, an NRCS-qualified staff person or a qualified organization shall submit a soil report, based on the results from soil corings, test pits or acceptable well log data, describing the subsurface materials and vertical separation distance from the bottom of the proposed structure to the underlying limestone, dolomite or soluble rock. A minimum of two soil corings spaced equally within the structure or two test pits located within five feet of the outside of the structure are required if acceptable well log data is not available. The soil corings shall be taken to a minimum depth of seven feet below the bottom elevation of the proposed structure or into bedrock, whichever is shallower. Any limestone, dolomite, or soluble bedrock in the corings or test pits shall be considered the bedrock surface rather than augur refusal. After the soil exploration is complete, each coring or test pit shall be properly plugged with concrete grout, bentonite or similar materials, and completion of this activity shall be documented in the soil report. If a 25-foot vertical separation distance can be maintained between the bottom of the proposed formed manure storage structure and limestone, dolomite, or other soluble rock, then the structure is not considered to be in karst terrain.

65.7(2) *Construction standards for formed manure storage structures.* A formed manure storage structure shall be constructed in accordance with the minimum concrete standards set forth in subrule 65.108(10) or Iowa Code section 459.307 if the structure is not constructed of concrete. No intact or weathered bedrock, including sandstone, shale, limestone, dolomite, or soluble rock, shall be removed or excavated during the construction of a storage structure.

65.7(3) *Vertical separation distance requirements for formed manure storage structures.* Except as provided for in subrule 65.7(5) related to the construction of a dry bedded confinement feeding operation structure, in addition to the concrete standards set forth in subrule 65.108(10) or Iowa Code section 459.307 if not constructed of concrete, a person constructing a formed manure storage structure on karst terrain shall comply with the following:

a. A minimum five-foot layer of low permeability soil (1×10^{-6} cm/sec) or rock between the bottom of a formed manure storage structure and limestone, dolomite, or other soluble rock is required if the formed manure storage structure is not designed by a PE or NRCS-qualified staff person.

b. If the vertical separation distance between the bottom of the proposed formed manure storage structure and limestone, dolomite, or other soluble rock is less than five feet, the structure shall be designed and sealed by a PE or NRCS-qualified staff person who certifies the structural integrity of the structure. A two-foot-thick layer of compacted clay liner material shall be constructed underneath the floor of the formed manure storage structure. However, it is recommended that any formed manure storage structure be constructed aboveground if the vertical separation distance between the bottom of the structure and the limestone, dolomite, or other soluble rock is less than five feet.

c. Groundwater monitoring shall be performed as specified by the department.

d. Backfilling shall not start until the floor slats have been placed or permanent bracing has been installed and grouted and shall be performed with material free of vegetation, large rocks, or debris.

65.7(4) *Unformed manure storage structures.* The construction of unformed manure storage structures, including unformed manure storage structures at SAFOs, is prohibited in karst terrain or an area that drains into a known sinkhole. In potential karst, at least one coring shall be taken to a minimum depth of 25 feet below the bottom elevation of the proposed unformed manure storage structure or into bedrock, whichever is shallower. If a 25-foot vertical separation distance can be maintained between the bottom of the unformed manure storage structure and limestone, dolomite, or other soluble rock, then the structure is not considered to be in karst terrain. No intact or weathered bedrock, including sandstone, shale, limestone, dolomite, or soluble rock, shall be removed or excavated during the construction of a manure storage structure.

65.7(5) *Dry bedded confinement feeding operation structure.* A person constructing any dry bedded confinement feeding operation structure, including structures at SAFOs, on karst terrain shall comply with all of the following:

a. The person must construct the structure at a location where there is a vertical separation distance of at least five feet between the bottom of the floor of the structure and the underlying limestone, dolomite, or other soluble rock in karst terrain or the underlying sand and gravel aquifer in an alluvial aquifer area.

b. The person must construct the structure with a floor consisting of reinforced concrete at least five inches thick.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.8(455B,459,459A,459B) Karst terrain—stockpile requirements. The provisions of this rule shall apply to locations at confinement feeding operations where dry manure or dry bedded manure is stockpiled.

65.8(1) Karst terrain submittal requirements. Prior to stockpiling dry manure or dry bedded manure, the person planning to stockpile shall determine whether the proposed stockpile location will be located in potential “karst terrain,” as defined in subrule 65.1(1). The AFO Siting Atlas shall be used to determine if the proposed stockpile location is in potential karst terrain. The results of the karst terrain determination shall be submitted to the department according to the following:

a. If the proposed stockpile location is not in potential karst terrain, the person planning the stockpiling shall submit a printed map from the AFO Siting Atlas indicating the location of the stockpile location, with the potential karst layer turned on, to the department.

b. If the proposed stockpile is located in potential karst terrain, a PE licensed in Iowa, NRCS-qualified staff person or a qualified organization shall submit a soil report to the department, based on the results from soil corings, test pits or acceptable well log data, describing the subsurface materials and vertical separation distance from the proposed bottom of the stockpile to the underlying limestone, dolomite or soluble rock. A minimum of two soil corings spaced equally within the stockpile location or two test pits located within five feet of the outside of the stockpile location are required if acceptable well log data is not available. The soil corings shall be taken to a minimum depth of 25 feet below the bottom elevation of the proposed stockpile or into bedrock, whichever is shallower. After the soil exploration is complete, each coring or test pit shall be properly plugged with concrete grout, bentonite or similar materials and completion of this activity shall be documented in the soil report. If a 25-foot vertical separation distance can be maintained between the bottom of the proposed stockpile and limestone, dolomite, or other soluble rock, then the structure is not considered to be in karst terrain.

65.8(2) Dry manure stockpiling. A person shall comply with all of the following when stockpiling dry manure on karst terrain:

a. Maintain a minimum five-foot vertical separation distance between the bottom of the stockpile and the underlying limestone, dolomite, or other soluble rock.

b. A person who stockpiles dry manure for more than 15 days shall use any of the following:

(1) A qualified stockpile structure; or

(2) A qualified stockpile cover. However, a person shall not stockpile dry manure using a qualified stockpile cover at a long-term stockpile location unless the stockpile is located on a reinforced concrete slab at least five inches thick.

65.8(3) Dry bedded manure stockpiling. A person shall comply with all of the following when stockpiling dry bedded manure on karst terrain or above an alluvial aquifer:

a. Maintain a minimum five-foot vertical separation distance between the bottom of the stockpile and the underlying limestone, dolomite, or other soluble rock in karst terrain or the underlying sand and gravel aquifer in an alluvial aquifer area.

b. Stockpiles shall be placed on a reinforced concrete slab that is a minimum of five inches thick.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.9(455B,459,459A,459B) Floodplains. The provisions of this rule shall apply to the following structures: (1) confinement feeding operation structures, (2) settled open feedlot effluent basins at open feedlot operations requiring a construction permit, (3) egg washwater structures, (4) AT systems, and (5) animal truck wash effluent structures.

65.9(1) Floodplains. A person shall not construct a manure storage structure in the one hundred year floodplain of a major water source. The one hundred year floodplain of major water source designations are

included on the AFO Siting Atlas. For construction of facilities located in the counties that do not have a Federal Emergency Management Agency (FEMA) flood insurance rate map (FIRM), which are Black Hawk, Johnson, Louisa, Winneshiek, and Woodbury, a person shall have the ability to contest the one hundred year floodplain determination by supplying supporting documents to the department for further evaluation. Placing fill material on floodplain land to elevate the land above the one hundred year flood elevation will not be considered as removing the land from the one hundred year floodplain for the purpose of this subrule. Even if the proposed location of the manure storage structure is not on the one hundred year floodplain of a major water source, the site may be on the floodplain of a nonmajor water source and the department may require a floodplain development permit pursuant to 567—Chapters 70 through 76 if the drainage area of the nonmajor water source adjacent to the proposed structure is greater than ten square miles in a rural location or two square miles in an urban location. The proposed construction can be screened through the department's online floodplain database siting tool.

65.9(2) *Flooding protection.* A confinement feeding operation or open feedlot structure proposed to be constructed on land that would be inundated by Q100 shall meet requirements as specified in 567—Chapters 70 through 76, unless otherwise prohibited according to subrule 65.9(1).

65.9(3) *Submittal requirements.* The person planning the construction shall submit a printed map from the AFO Siting Atlas indicating the location of the structure, with the one hundred year floodplain layer turned on, with the construction permit application documents or with the construction design statement if a construction permit is not required.

65.9(4) *Exemptions to prohibition on one hundred year floodplain construction and separation distance requirements from water sources, major water sources, known sinkholes, agricultural drainage wells, designated wetlands confinement structures and animal truck wash effluent structures.* As specified in Iowa Code sections 459.310(4) and 459A.404(3), a separation distance required in subrules 65.106(3) and 65.106(4) or the prohibition against construction of a confinement feeding operation structure on a one hundred year floodplain as provided in subrule 65.9(1) shall not apply to a confinement feeding operation or animal truck wash that includes a confinement feeding operation structure or animal truck wash effluent structure that was constructed prior to March 1, 2003, if any of the following apply:

a. One or more unformed manure storage structures or animal truck wash effluent structures that are part of the confinement feeding operation or animal truck wash are replaced with one or more formed manure storage structures or formed animal truck wash effluent structures on or after April 28, 2003, and all of the following apply:

(1) The animal weight capacity or animal unit capacity, whichever is applicable, is not increased for that portion of the confinement feeding operation or animal truck wash that utilizes all replacement formed manure storage structures or animal truck wash effluent structures.

(2) The use of each replaced unformed manure storage structure is discontinued within one year after the construction of the replacement formed manure storage structure or formed animal truck wash effluent structure.

(3) The capacity of all replacement formed manure storage structures or animal truck wash effluent structures does not exceed the amount required to store manure produced by that portion of the confinement feeding operation or animal truck wash utilizing the replacement formed manure storage structures or animal truck wash effluent structures during any 18-month period.

(4) No portion of the replacement formed manure storage structure or animal truck wash effluent structure is closer to the location or object from which separation is required under subrules 65.106(3) and 65.106(4) than any other confinement feeding operation structure or animal truck wash effluent structure which is part of the operation.

(5) The replacement formed manure storage structure or animal truck wash effluent structure meets or exceeds the requirements of Iowa Code section 459.307 and subrule 65.108(10).

b. A replacement formed manure storage structure that is part of the confinement feeding operation or animal truck wash is constructed on or after April 28, 2003, if it complies with the following provisions:

(1) The replacement formed manure storage structure or animal truck wash effluent structure replaces the confinement feeding operation or animal truck wash's existing manure storage and handling facilities.

(2) The replacement formed manure storage structure or animal truck wash effluent structure complies with standards adopted pursuant to Iowa Code section 459.307 and subrule 65.108(10).

(3) The replacement formed manure storage structure or animal truck wash effluent structure more likely than not provides a higher degree of environmental protection than the confinement feeding operation or animal truck wash's existing manure storage and handling facilities. If the formed manure storage structure or animal truck wash effluent structure will replace any existing manure storage structure or animal truck wash effluent structure, the department shall require that the replaced manure storage structure or animal truck wash effluent structure be properly closed.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.10 to 65.99 Reserved.

DIVISION II

CONFINEMENT FEEDING OPERATIONS AND DRY BEDDED CONFINEMENT FEEDING OPERATIONS

567—65.100(455B,459,459B) Minimum manure control requirements. Confinement feeding operations shall be constructed, managed and maintained to meet the minimum manure control requirements stated in subrules 65.100(1) to 65.100(6). A release shall be reported to the department as provided in subrule 65.2(1). Dry manure stockpiling requirements are stated in subrule 65.100(7). Dry bedded manure stockpiling requirements are stated in subrule 65.100(8).

65.100(1) The minimum level of manure control for a confinement feeding operation shall be the retention of all manure produced in the confinement enclosures between periods of manure application and as specified in this rule. In no case shall manure from a confinement feeding operation be discharged directly into a water of the state or into a tile line that discharges to waters of the state.

a. Control of manure from confinement feeding operations may be accomplished through use of manure storage structures or other manure control methods. Sufficient capacity shall be provided in the manure storage structure to store all manure between periods of manure application. A confinement feeding operation, other than a SAFO, that is constructed or expanded on or after July 1, 2009, shall not surface-apply liquid manure on frozen or snow-covered ground when there is an emergency, as described in subrule 65.101(4), unless the operation has a minimum of 180 days of manure storage capacity. Additional capacity shall be provided if precipitation, manure or wastes from other sources can enter the manure storage structure.

b. Manure shall be removed from the control facilities as necessary to prevent overflow or discharge of manure from the facilities. Manure stored in unformed manure storage structures or unformed egg washwater storage structures shall be removed from the structures as necessary to maintain a minimum of two feet of freeboard in the structure, unless a greater level of freeboard is required to maintain the structural integrity of the structure or prevent manure overflow. Manure stored in unroofed formed manure storage structures or formed egg washwater storage structures shall be removed from the structures as necessary to maintain a minimum of one foot of freeboard in the structure unless a greater level of freeboard is required to maintain the structural integrity of the structure or prevent manure overflow.

c. To ensure that adequate capacity exists in the manure storage structure to retain all manure produced during periods when manure application cannot be conducted (due to inclement weather conditions, lack of available land disposal areas, or other factors), the manure shall be removed from the manure storage structure as needed prior to these periods.

d. Dry manure or dry bedded manure originating at a confinement feeding operation may be retained as a stockpile so long as the stockpiled dry manure or dry bedded manure meets the following:

(1) Dry manure stockpiling requirements provided in subrule 65.100(7) or dry bedded manure stockpiling requirements provided in subrule 65.100(8).

(2) Applicable NPDES requirements pursuant to the Act.

(3) The dry manure or dry bedded manure is removed from the stockpile and applied in accordance with rule 567—56.101(459,459B) within six months after the dry manure or dry bedded manure is first stockpiled.

(4) Dry manure stockpiles are not required to meet the requirements in subparagraphs 65.100(1) “d”(1) to 65.100(1) “d”(3) above if the dry manure originates from a confinement feeding operation that was constructed prior to January 1, 2006, unless any of the following apply:

1. The confinement feeding operation is expanded after January 1, 2006.
2. Dry manure is stockpiled in violation of subrule 65.100(1).
3. Precipitation-induced runoff from the stockpile has drained off the property.

65.100(2) If site topography, operation procedures, experience, or other factors indicate that a greater or lesser level of manure control than that specified in subrule 65.100(1) is required to provide an adequate level of water pollution control for a specific AFO, the department may establish different minimum manure control requirements for that operation.

65.100(3) In lieu of using the manure control methods specified in subrule 65.100(1), the department may allow the use of manure treatment or other methods of manure control if it determines that an adequate level of manure control will result.

65.100(4) No direct discharge shall be allowed from an AFO into a publicly owned lake, a sinkhole, or an agricultural drainage well.

65.100(5) All manure removed from an AFO or its manure control facilities shall be land-applied in a manner that will not cause surface or groundwater pollution. Application in accordance with the provisions of state law and this chapter shall be deemed as compliance with this requirement.

65.100(6) As soon as practical but not later than six months after the use of an AFO is discontinued, all manure shall be removed from the discontinued AFO and its manure control facilities and be land applied.

65.100(7) Dry manure stockpiling requirements for a confinement feeding operation.

a. Requirements for terrain, other than karst terrain. Dry manure stockpiled on terrain, other than karst terrain, for more than 15 consecutive days shall comply with either of the following:

(1) Dry manure shall be stockpiled using any of the following:

1. A qualified stockpile structure; or
2. A qualified stockpile cover. Long-term stockpiles utilizing a qualified stockpile cover shall be placed on a constructed impervious base that can support the load of the equipment used under all weather conditions. The coefficient of permeability of the impervious base shall be less than 1×10^{-7} cm/sec (0.00028 feet/day). Permeability results shall be submitted to the department prior to use of the stockpile site.

(2) A stockpile inspection statement shall be delivered to the department as follows:

1. The department must receive the statement by the fifteenth day of each month.
2. The stockpile inspection statement shall provide the location of the stockpile and document the results of an inspection conducted during the previous month. The inspection must evaluate whether precipitation-induced runoff is draining away from the stockpile and, if so, describe actions taken to prevent the runoff. If an inspection by the department documents that precipitation-induced runoff is draining away from a stockpile, the dry manure must be immediately removed from the stockpile or comply with all directives of the department to prevent the runoff.

3. The stockpile inspection statement must be in writing and may be on a form prescribed by the department.

b. Dry manure stockpile siting prohibitions.

(1) Grassed waterway. A stockpile or stockpile structure shall not be placed in a grassed waterway.

(2) Sloping land. A stockpile or stockpile structure shall not be placed on land having a slope of more than 3 percent, unless the dry manure is stockpiled using methods, structures, or practices that contain the stockpile, including but not limited to silt fences, temporary earthen berms, or other effective measures, and that prevent or diminish precipitation-induced runoff from the stockpile.

65.100(8) Prohibitions and siting restrictions for dry bedded manure stockpiling requirements for a dry bedded confinement feeding operation.

a. Prohibition in a grassed waterway. A stockpile or stockpile structure shall not be placed in a grassed waterway, where water pools on the soil surface, or in any location where surface water will enter the stockpile.

b. Siting restrictions. A stockpile or stockpile structure shall not be placed on land having a slope of more than 3 percent, unless the dry manure or dry bedded manure is stockpiled using methods, structures, or practices that contain the stockpile, including but not limited to hay bales, silt fences, temporary earthen berms, or other effective measures that prevent or diminish precipitation-induced runoff from the stockpile. A stockpile or stockpile structure located in karst terrain must comply with the karst requirements in subrule 65.8(3).

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.101(455B,459,459B) Requirements for land application of manure from a confinement feeding operation.

65.101(1) *General requirements for application rates and practices for confinement feeding operations.*

a. For manure originating from an anaerobic lagoon or aerobic structure, application rates and practices shall be used to minimize groundwater or surface water pollution resulting from application, including pollution caused by runoff or other manure flow resulting from precipitation events. In determining appropriate application rates and practices, the person land-applying the manure shall consider the site conditions at the time of application including anticipated precipitation and other weather factors, field residue and tillage, site topography, the existence and depth of known or suspected tile lines in the application field, and crop and soil conditions, including a good-faith estimate of the available water-holding capacity given precipitation events, the predominant soil types in the application field and planned manure application rate.

b. Spray irrigation equipment shall be operated in a manner and with an application rate and timing that does not cause runoff of the manure onto the property adjoining the property where the spray irrigation equipment is being operated.

c. For manure from an earthen waste slurry storage basin, earthen manure storage basin, or formed manure storage structure, restricted spray irrigation equipment shall not be used unless the manure has been diluted with surface water or groundwater to a ratio of at least 15 parts water to 1 part manure. Emergency use of spray irrigation equipment without dilution shall be allowed to minimize the impact of a release as approved by the department.

65.101(2) *Separation distance requirements for land application of manure.* Land application of manure shall be separated from objects and locations as specified in this subrule.

a. For liquid manure from a confinement feeding operation, the required separation distance from a residence not owned by the titleholder of the land, a business, a church, a school, or a public use area is 750 feet, as specified in Iowa Code section 459.204. The separation distance for application of manure by spray irrigation equipment shall be measured from the actual wetted perimeter and the closest point of the residence, business, church, school, or public use area.

b. The separation distance specified in paragraph 65.101(2)“a” shall not apply if any of the following apply:

(1) The liquid manure is injected into the soil or incorporated within the soil not later than 24 hours after the original application.

(2) The titleholder of the land benefitting from the separation distance requirement executes a written waiver with the titleholder of the land where the manure is applied.

(3) The liquid manure originates from a SAFO.

(4) The liquid manure is applied by low-pressure spray irrigation equipment pursuant to paragraph 65.101(2)“a.”

c. Separation distance for spray irrigation from property boundary line. Spray irrigation equipment shall be set up to provide for a minimum distance of 100 feet between the wetted perimeter as specified in the spray irrigation equipment manufacturer’s specifications and the boundary line of the property where the equipment is being operated. The actual wetted perimeter, as determined by wind speed and direction and other operating conditions, shall not exceed the boundary line of the property where the equipment is being operated. For property that includes a road right-of-way, railroad right-of-way or an access easement, the property boundary line shall be the boundary line of the right-of-way or easement.

d. Distance from structures for low-pressure irrigation systems. Low-pressure irrigation systems shall have a minimum separation distance of 250 feet between the actual wetted perimeter and the closest point of a residence, a business, church, school or public use area.

e. Waivers. Waivers to paragraph 65.101(2)“c” may be granted by the department if sufficient and proposed alternative information is provided to substantiate the need and propriety for such action. Waivers may be granted on a temporary or permanent basis. The request for a waiver shall be in writing and include information regarding:

(1) The type of manure storage structure from which the manure will be applied by spray irrigation equipment.

(2) The spray irrigation equipment to be used in the application of manure.

(3) Other information as the department may request.

f. Agricultural drainage wells. Manure shall not be applied by spray irrigation equipment on land located within an agricultural drainage well area.

g. Designated areas. A person shall not apply manure on land within 200 feet from a designated area or in the case of a high-quality water resource, within 800 feet, unless one of the following applies:

(1) The manure is land-applied by injection or incorporation on the same date as the manure was land-applied.

(2) An area of permanent vegetation cover, including filter strips and riparian forest buffers, exists for 50 feet surrounding the designated area other than an unplugged agricultural drainage well or surface intake to an unplugged agricultural drainage well, and the area of permanent vegetation cover is not subject to manure application.

h. Setback requirements for confinement feeding operations with NPDES permits. For confinement feeding operations with NPDES permits, the following is adopted by reference: 40 CFR 412.4(a), (b) and (c)(5).

65.101(3) Surface application of liquid manure on frozen or snow-covered ground. A person who applies liquid manure on frozen or snow-covered ground shall comply with applicable NPDES permit requirements pursuant to the Act and also shall comply with the following requirements:

a. *Snow-covered ground.* During the period beginning December 21 and ending April 1, a person may apply liquid manure originating from a manure storage structure that is part of a confinement feeding operation on snow-covered ground only when there is an emergency.

b. *Frozen ground.* During the period beginning February 1 and ending April 1, a person may apply liquid manure originating from a manure storage structure that is part of a confinement feeding operation on frozen ground only when there is an emergency.

c. *What constitutes an emergency.* For the purposes of this subrule, an emergency application is only allowed when there is an immediate need to apply manure to comply with the manure retention requirement of subrule 65.100(1) due to unforeseen circumstances affecting the storage of the liquid manure. The unforeseen circumstances must be beyond the control of the owner of the confinement feeding operation, including but not limited to natural disaster, unusual weather conditions, or equipment or structural failure. The authorization to apply liquid manure pursuant to this subrule does not apply to either of the following:

(1) An immediate need to apply manure in order to comply with the manure retention requirement of subrule 65.100(1) caused by the improper design or management of the manure storage structure, including but not limited to a failure to properly account for the volume of the manure to be stored. Based on the restrictions described in paragraphs 65.101(3)“a” and “b” and the possibility that the ground could be snow-covered and frozen for the entire period of December 21 to April 1, an operation should not plan to apply liquid manure during that time period. Confinement feeding operations with manure storage structures constructed after May 26, 2009, and without alternatives to manure application must have sufficient storage capacity to retain manure generated from December 21 to April 1 under normal circumstances in order to properly account for the volume of manure to be stored. For confinement feeding operations that have no manure storage structures constructed after May 26, 2009, the department will accept insufficient manure storage capacity as a reason for emergency application in the notification required in subrule 65.101(3).

(2) Liquid manure originating from a confinement feeding operation constructed or expanded on or after July 1, 2009, if the confinement feeding operation has a capacity to store manure for less than 180 days.

d. Procedure for emergency application. A person who is authorized to apply liquid manure on snow-covered ground or frozen ground when there is an emergency shall comply with all of the following:

(1) The person must notify the appropriate department field office by telephone prior to the application. The department will not consider the notification complete unless the owner's name, facility name, facility ID number, reason for emergency application, application date, estimated number of gallons of manure to be applied, and application fields as listed in the MMP are given. In cases where the emergency is not easily confirmed by weather reports, the owner must make documentation of the emergency available to the field office upon request.

(2) The liquid manure must be applied on land identified for such application in the current MMP maintained by the owner of the confinement feeding operation as required in subrule 65.111(7). The land must be identified in the current MMP prior to the application, and that change must also be reflected in the next annual update or complete MMP submitted to the department and county boards of supervisors following the application as required in paragraph 65.110(3) "b."

(3) The liquid manure must be applied on a field with a phosphorus index rating of 2 or less.

(4) Any surface water drain tile intake that is on land in the owner's MMP and located downgradient of the application must be temporarily blocked beginning not later than the time that the liquid manure is first applied and ending not earlier than two weeks after the completion of the application.

(5) Additional measures to contain runoff may be necessary in order to prevent violation of federal effluent standards in subrule 62.4(12).

e. Exceptions. Paragraphs 65.101(3) "a" through "d" do not apply to any of the following:

(1) The application of liquid manure originating from a SAFO.

(2) The application of liquid manure injected or incorporated into the soil on the same date.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.102(455B,459,459B) Departmental evaluation.

65.102(1) The department may evaluate any AFO to determine if any of the following conditions exist:

a. Manure from the operation is being discharged into a water of the state and the operation is not providing the applicable minimum level of manure control as specified in subrule 65.100(1);

b. Manure from the operation is causing or may reasonably be expected to cause pollution of a water of the state; or

c. Manure from the operation is causing or may reasonably be expected to cause a violation of state water quality standards.

65.102(2) If departmental evaluation determines that any of the conditions listed in subrule 65.102(1) exist, the operation shall institute necessary remedial actions to eliminate the conditions if the operation receives a written notification from the department of the need to correct the conditions. This subrule shall apply to all permitted and unpermitted AFOs, regardless of animal capacity.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.103(455B,459,459B) Construction permits—required approvals and permits. A person required to obtain a construction permit pursuant to subrule 65.103(1) or a construction approval letter pursuant to subrule 65.103(7) shall not begin construction, expansion or modification of a confinement feeding operation structure until the department issues a construction permit or a construction approval letter for a proposed or existing confinement feeding operation. In addition, the owner of a SAFO with formed manure storage structures who is not required to obtain a construction permit pursuant to subrule 65.103(1) or a construction approval letter pursuant to subrule 65.103(7) shall comply with the applicable construction approval requirements pursuant to subrule 65.103(8).

65.103(1) *Confinement feeding operations required to obtain a construction permit prior to any of the following.* Except as provided in subrule 65.103(2), a confinement feeding operation shall obtain a construction permit prior to any of the following:

- a. Constructing or installing a confinement building that uses an unformed manure storage structure or constructing, installing or modifying an unformed manure storage structure.
- b. Constructing or installing a confinement building that uses a formed manure storage structure or constructing, installing or modifying a formed manure storage structure if, after construction, installation or modification, the animal unit capacity of the operation is 1,000 animal units or more. This paragraph also applies to confinement feeding operations that store manure exclusively in a dry form.
- c. Initiating a change, even if no construction of, or physical alteration to, an unformed manure storage structure is necessary, that would result in an increase in the volume of manure or a modification in the manner in which manure is stored in any unformed manure storage structure. Increases in the volume of manure due to an increase in animal capacity, animal weight capacity or animal unit capacity up to the limits specified in a previously issued construction permit do not require a new construction permit.
- d. Initiating a change, even if no construction of or physical alteration to, a formed manure storage structure is necessary, that would result in an increase in the volume of manure or a modification in the manner in which manure is stored in a formed manure storage structure if, after the change, the animal unit capacity of the operation is 1,000 animal units or more. Increases in the volume of manure due to an increase in animal capacity, animal weight capacity or animal unit capacity up to the limits specified in a previously issued construction permit do not require a new construction permit.
- e. Purchasing or acquiring an adjacent animal feeding confinement operation if after acquisition the animal unit capacity of the combined operation is 1,000 animal units or more. The construction permit application must be submitted within 60 days of the acquisition or purchase.
- f. Constructing or modifying an egg washwater storage structure or a confinement building at a confinement feeding operation that includes an egg washwater storage structure.
- g. Initiating a change, even if no construction of, or physical alteration to, an egg washwater storage structure is necessary, that would result in an increase in the volume of egg washwater or a modification in the manner in which egg washwater is stored. Increases in the volume of egg washwater due to an increase in animal capacity, animal weight capacity or animal unit capacity up to the limits specified in a previously issued construction permit do not require a new construction permit.
- h. Repopulating a confinement feeding operation that had been a discontinued AFO for 24 months or more and if any of the following apply:
 - (1) The confinement feeding operation uses an unformed manure storage structure or egg washwater storage structure;
 - (2) The confinement feeding operation includes only confinement buildings and formed manure storage structures and has an animal unit capacity of 1,000 animal units or more.
- i. Installing a permanent manure transfer piping system, unless the department determines that a construction permit is not required.
- j. Initiating a remedial change, upgrade, replacement or construction when directed by the department as a result of departmental evaluation pursuant to rule 567—65.102(455B,459,459B) or as required by an administrative order or court order pursuant to Iowa Code section 455B.112 or 455B.175. Repairs to a confinement building or additions such as fans, slats, gates, roofs, or covers do not require a construction permit. In some instances, the department may determine that a construction permit is not required to increase the volume of manure or egg washwater or a modification in the manner in which manure or egg washwater is stored if the increase or modification is deemed insignificant. Plans for repairs or modifications to a manure storage structure shall be submitted to the department to determine if a permit is required.

65.103(2) *Confinement feeding operations not required to obtain a construction permit.*

- a. A construction permit shall not be required for a formed manure storage structure or for a confinement building that uses a formed manure storage structure in conjunction with a SAFO. However, this paragraph shall not apply to a SAFO that uses an unformed manure storage structure.
- b. A construction permit shall not be required for a confinement feeding operation structure related to research activities and experiments performed under the authority and regulations of a research college.
- c. A construction permit is not required to construct a formed manure storage structure at a confinement feeding operation having an animal unit capacity of more than 500 but less than 1,000 animal

units; however, a construction approval letter is required from the department pursuant to subrule 65.103(8) and rule 567—65.104(455B,459,459B).

d. A construction permit is not required for a confinement feeding operation that exclusively confines fish and elects to comply with the permitting requirements of Iowa Code section 455B.183.

65.103(3) *Operations that shall not be issued construction permits.*

a. The department shall not issue a construction permit to a person if an enforcement action by the department, relating to a violation of this chapter concerning a confinement feeding operation in which the person has an interest, is pending.

b. The department shall not issue a construction permit to a person for five years after the date of the last violation committed by a person or confinement feeding operation in which the person holds a controlling interest during which the person or operation was classified as a habitual violator under Iowa Code sections 459.317 and 459.604.

c. The department shall not issue a construction permit to expand or modify a confinement feeding operation for 120 days after completion of the last construction or modification at the operation, if a permit was not required for the last construction or modification.

65.103(4) *Construction permit application plan review criteria.* Review of plans and specifications submitted with a construction permit application shall be conducted to determine the potential of the proposed manure control system to achieve the level of manure control being required of the confinement feeding operation. In conducting this review, applicable criteria contained in federal law, state law, these rules, NRCS design standards and specifications unless inconsistent with federal or state law or these rules, and U.S. Department of Commerce precipitation data shall be used. If the proposed facility plans are not adequately covered by these criteria, applicable criteria contained in current technical literature shall be used.

65.103(5) *Expiration of construction permits.* A construction permit shall expire if construction, as defined in rule 567—65.6(455B,459,459A,459B), is not begun within one year and completed within four years of the date of issuance. The director may grant an extension of time to begin or complete construction if it is necessary or justified, upon showing of such necessity or justification to the director, unless a person who has an interest in the proposed operation is the subject of a pending enforcement action or a person who has a controlling interest in the proposed operation has been classified as a habitual violator. If a permitted site has not completed all proposed permitted structures within the four-year limit, then the approved animal unit capacity in the construction permit shall be lowered to be equal to what was constructed and the department shall issue a construction permit amendment for what was constructed. Once all permitted construction has been completed, no amendments for new construction may be issued even though the four-year period has not expired. A new construction permit must be issued for the new proposed construction.

65.103(6) *Revocation of construction permits.* The department may revoke a construction permit or refuse to renew a permit expiring according to subrule 65.103(5) if it determines that the operation of the confinement feeding operation constitutes a clear, present and impending danger to public health or the environment.

65.103(7) *Confinement feeding operations required to obtain a construction approval letter.* A person planning to construct a confinement feeding operation, other than a SAFO as defined in rule 567—65.1(455B,459,459A,459B) or other than an operation required to obtain a construction permit pursuant to subrule 65.103(1), shall obtain from the department a construction approval letter as provided in subrule 65.104(2) prior to beginning construction of a formed manure storage structure or a confinement building. The construction approval letter shall expire if construction, as defined in subrule 65.6(1), is not begun within one year and completed within four years of the date of the construction approval letter.

65.103(8) *SAFOs.* The following requirements apply to SAFOs:

a. A construction permit shall not be required for a SAFO utilizing a formed manure storage structure; however, a construction permit is required for any unformed manure storage structures utilized at a SAFO.

b. If a SAFO cannot meet the required separation distance provided in Iowa Code section 459.310(1), a SAFO must comply with secondary containment barrier design in accordance with subrule 65.104(5).

c. A SAFO must comply with drain tile removal requirements if the SAFO utilizes an unformed manure storage structure in accordance with subrule 65.108(1).

d. SAFO confinement structures must comply with applicable separation distance requirements in rule 567—65.106(455B,459,459B).

65.103(9) *Compliance with permit conditions.* A person who constructs, modifies or expands a confinement feeding operation structure pursuant to a construction permit shall comply with all terms and conditions of the construction permit.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.104(455B,459,459B) Preconstruction submittal requirements. Prior to beginning construction, expansion or modification of a confinement feeding operation structure, a person shall obtain from the department a construction permit pursuant to subrule 65.103(1), a construction approval letter pursuant to subrule 65.103(7) or approval of a secondary containment barrier design pursuant to subrule 65.104(5), according to procedures established in this rule.

65.104(1) *Construction permit application.* Application for a construction permit for a confinement feeding operation shall be made on a form provided by the department. The application shall include all of the information required in the form. At the time the department receives a complete application, the department shall make a determination regarding the approval or denial of the permit in accordance with subrule 65.105(5). A construction permit application for a confinement feeding operation shall be filed as instructed on the form and shall include the following:

a. The name of the applicant and the name of the confinement feeding operation, including mailing address and telephone number.

b. The name of the current landowner or the proposed landowner of the land where the confinement feeding operation will be located.

c. The contact person for the confinement feeding operation, including mailing address and telephone number.

d. The location of the confinement feeding operation.

e. Whether the application is for the expansion of an existing operation or the construction of a proposed confinement feeding operation, and the date when it was first constructed if an existing operation.

f. The animal unit capacity by animal species of the current confinement feeding operation to be expanded, if applicable, and of the proposed confinement feeding operation. If the confinement feeding operation includes a confinement feeding operation structure that was constructed prior to March 1, 2003, the animal weight capacity by animal species of the current confinement feeding operation to be expanded, if applicable, and of the proposed confinement feeding operation shall also be included.

g. Engineering documents. A confinement feeding operation that utilizes an unformed manure storage structure, an egg washwater storage structure or a formed manure storage structure at an operation that meets the threshold requirements for an engineer as defined in rule 567—65.1(455B,459,459A,459B) shall include an engineering report, construction plans and specifications. The engineering report, construction plans and specifications must be prepared and signed by a licensed PE or by an NRCS-qualified staff person, must detail the proposed structures, and must include a statement certifying that the manure storage structure complies with the requirements of Iowa Code chapter 459. In addition, a qualified soils or groundwater professional, licensed PE or NRCS-qualified staff person shall submit a hydrogeologic report on soil corings in the area of the unformed manure storage structure or egg washwater storage structure as described in subrules 65.108(5) and 65.108(9).

h. Construction design statement or PE design certification. A confinement feeding operation that uses a formed manure storage structure and that is below the threshold requirements for an engineer as defined in rule 567—65.1(455B,459,459A,459B) shall submit a construction design statement pursuant to subrule 65.104(3) or a PE design certification pursuant to subrule 65.104(4). All elevations shall be in NAV 88 datum for sites with alluvial soils or floodplain requirements.

i. Payment to the department of the indemnity fund fee as required in Iowa Code section 459.502.

j. If the construction permit application is for three or more confinement feeding operation structures, a drainage tile certification shall be submitted as follows:

(1) If the application is for an unformed manure storage structure, an egg washwater storage structure or a formed manure storage structure that meets the threshold requirements for an engineer as defined in rule 567—65.1(455B,459,459A,459B), a licensed PE shall certify that either the construction of the structure will not impede the drainage through established drainage tile lines which cross property boundary lines or that if the drainage is impeded during construction, the drainage tile will be rerouted to reestablish the drainage prior to operation of the structure.

(2) If the application is for a formed manure storage structure that does not meet the threshold engineering requirements, a drainage tile certification shall be submitted as part of the construction design statement pursuant to subrule 65.104(3) or as part of the PE design certification pursuant to subrule 65.104(4).

k. Information (e.g., maps, drawings, aerial photos) that clearly shows the proposed location of the confinement feeding operation structures; any existing confinement feeding operation structures; any locations or objects from which a separation distance is required by Iowa Code sections 459.202, 459.203 and 459.310; and that the structures will meet all applicable separation distances. If applicable, a copy of a recorded separation distance waiver, pursuant to paragraph 65.107(1)“b,” must be included with the application. Also, if applicable, a secondary containment barrier design, pursuant to subrules 65.104(5) and 65.107(7), shall be included.

l. The names of all parties with an interest or controlling interest in the confinement feeding operation who also have an interest or controlling interest in at least one other confinement feeding operation in Iowa, and the names and locations of such other operations; for a partnership or corporation owning the confinement feeding operation, a list of all members and their percentage of ownership in the partnership or corporation.

m. Copies of the MMP pursuant to rule 567—65.110(455B,459,459B).

n. A construction permit application fee of \$250 and the MMP filing fee of \$250 as required in subrule 65.110(7).

o. A copy of the AFO Siting Atlas indicating the location of the proposed structure, with the one hundred year floodplain and karst layers included.

p. A copy of any master matrix evaluation provided to the county.

q. A livestock odor mitigation evaluation certificate issued by Iowa State University as provided in Iowa Code section 266.49. The applicant is not required to submit the certificate if any of the following apply:

(1) The confinement feeding operation is twice the minimum separation distance required from the nearest object or location from which a separation distance is required pursuant to Iowa Code section 459.202 on the date of the application, not including a public thoroughfare.

(2) The owner of each object or location that is less than twice the minimum separation distance required pursuant to Iowa Code section 459.202 from the confinement feeding operation on the date of the application, other than a public thoroughfare, executes a document consenting to the construction.

(3) The applicant submits a document swearing that Iowa State University has failed to furnish a certificate to the applicant within 45 days after the applicant requested Iowa State University to conduct a livestock odor mitigation evaluation as provided in Iowa Code section 266.49.

(4) The application is for a permit to expand a confinement feeding operation, if the confinement feeding operation was first constructed before January 1, 2009.

(5) Iowa State University does not provide for a livestock odor mitigation evaluation effort as provided in Iowa Code section 266.49, for any reason, including because funding is not available.

r. Documentation that copies of all the construction permit application documents have been provided to the county board of supervisors or county auditor in the county where the operation or structure subject to the permit is to be located, and documentation of the date received by the county.

65.104(2) Construction approval letter.

a. A confinement feeding operation that, pursuant to subrule 65.103(7), is required to obtain a construction approval letter as defined in rule 567—65.1(455B,459,459A,459B), but that is not required to obtain a construction permit pursuant to subrule 65.103(1), shall file with the department, at least 30 days prior to the date the proposed construction is scheduled to begin, all of the following:

(1) A construction design statement pursuant to subrule 65.104(3). In lieu of a construction design statement, a PE design certification pursuant to subrule 65.104(4) may be submitted.

(2) A copy of the MMP pursuant to rule 567—65.110(455B,459,459B).

(3) Information (e.g., maps, drawings, aerial photos) that clearly shows the intended location of the confinement feeding operation structures and animal weight capacities of any other confinement feeding operations within a distance of 2,500 feet in which the owner has an ownership interest or which the owner manages.

(4) A fee of \$250 for filing an MMP pursuant to subrule 65.110(7) and a manure storage indemnity fee pursuant to subrule 65.110(6).

(5) Documentation that the board of supervisors or auditor of the county where the confinement feeding operation structure is proposed to be located received a copy of the MMP.

b. After submission of items in subparagraphs 65.104(2)“a”(1) through 65.104(2)“a”(5) and prior to issuance of the construction approval letter, the confinement feeding operation may make nonsubstantial revisions to the items and maintain the date construction is scheduled to begin.

65.104(3) Construction design statement. Prior to beginning construction of a formed manure storage structure, a person planning construction at a confinement feeding operation, other than a SAFO, that is below the threshold requirements for an engineer as defined in rule 567—65.1(455B,459,459A,459B) shall file with the department a construction design statement, as follows:

a. A confinement feeding operation with an animal unit capacity of more than 500 but less than 1,000 animal units that is required to obtain a construction approval letter from the department pursuant to subrule 65.103(7) but that is not required to obtain a construction permit pursuant to subrule 65.103(1) shall file with the department a construction design statement, as required in subrule 65.104(2). Within 30 days after the filing of a construction design statement, the department may issue a construction approval letter as defined in rule 567—65.1(455B,459,459A,459B) if the proposed formed manure storage structure meets the requirements of this chapter.

b. A confinement feeding operation that has an animal unit capacity of 1,000 animal units or more but that is below the threshold requirements for an engineer as defined in rule 567—65.1(455B,459,459A,459B) shall file a construction design statement as part of the construction permit application and as required in subrule 65.104(1).

c. The construction design statement shall be filed on a form provided by the department and shall include all of the following:

(1) The name of the person planning construction at the confinement feeding operation, the name of the confinement feeding operation, the location of the proposed formed manure storage structure, a detailed description of the type of confinement feeding operation structure being proposed, the dimensions of the structure, and whether the structure will be constructed of reinforced concrete or steel.

(2) An MMP pursuant to rule 567—65.110(455B,459,459B).

(3) A certification signed by the person responsible for constructing the formed manure storage structure that the proposed formed manure storage structure will be constructed according to the minimum concrete standards set forth in subrule 65.108(10). Otherwise, if the formed manure storage structure is to be constructed of steel, including a Slurrystore® tank, a certification signed by the person responsible for constructing the formed manure storage structure that the proposed formed manure storage structure will be constructed according to the requirements of Iowa Code chapter 459 and this chapter.

(4) If the confinement feeding operation is also required to obtain a construction permit at a confinement feeding operation proposing three or more confinement feeding operation structures, the construction design statement shall include a drainage tile certification signed by the person responsible for constructing or excavating the formed manure storage structure, shall certify that construction will not impede established existing drainage, and shall verify that if existing drainage tiles are found, corrective actions will be implemented to immediately reestablish existing drainage.

d. The following operations are not required to file a construction design statement with the department:

(1) A SAFO that constructs a formed manure storage structure.

(2) A confinement feeding operation that submits a PE design certification pursuant to this subrule.

(3) A confinement feeding operation that meets or exceeds threshold requirements for an engineer as defined in rule 567—65.1(455B,459,459A,459B).

(4) A confinement feeding operation that utilizes an unformed manure storage structure or an egg washwater storage structure.

65.104(4) *PE design certification.* In lieu of a construction design statement prior to beginning construction of a formed manure storage structure, a confinement feeding operation, other than a SAFO, that is below the threshold requirements for an engineer pursuant to rule 567—65.1(455B,459,459A,459B) may file with the department a PE design certification and design plans signed by a PE licensed in the state of Iowa or an NRCS-qualified staff person. The PE design certification shall be site-specific and shall be filed on a form provided by the department as follows:

a. A confinement feeding operation with an animal unit capacity of more than 500 but less than 1,000 animal units that is not required to obtain a construction permit pursuant to subrule 65.103(1) shall file with the department, at least 30 days before beginning construction of a formed manure storage structure, the PE design certification as required in subrule 65.104(2). Within 30 days after the filing of a PE design certification, the department may issue a construction approval letter if the proposed formed manure storage structure meets the requirements of this chapter.

b. A confinement feeding operation with an animal unit capacity of 1,000 animal units or more that is required to obtain a construction permit pursuant to subrule 65.103(1) but that is below the threshold requirements for an engineer pursuant to rule 567—65.1(455B,459,459A,459B) shall file with the department the PE design certification as part of the construction permit application and as required in subrule 65.104(1).

65.104(5) *Secondary containment barrier design submittal requirements.* The design for a secondary containment barrier to qualify any confinement feeding operation for the separation distance exemption provision in subrule 65.107(7) shall be filed with the department for approval prior to beginning construction of a formed manure storage structure that is part of a SAFO, shall accompany the construction design statement pursuant to subrule 65.104(2) if a construction permit is not required, or shall be filed as part of the construction permit application pursuant to subrule 65.104(1). The secondary containment barrier shall meet the design standards of subrule 65.108(11) and shall be prepared according to the following:

a. If a manure storage structure stores liquid or semiliquid manure, the secondary containment barrier design shall include engineering drawings prepared and signed by a PE licensed in the state of Iowa or an NRCS-qualified staff person. For purposes of this subrule only, “semiliquid manure” means manure that contains a percentage of dry matter that results in manure too solid for pumping but too liquid for stacking.

b. If the manure storage structure will store only dry manure or dry bedded manure, the owner or a representative of a confinement feeding operation may submit to the department detailed drawings of the design for a secondary containment barrier.

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567—65.105(455B,459,459B) Construction permit application review process, site inspections and complaint investigations.

65.105(1) *Delivery of application to county.* The applicant for a construction permit for a confinement feeding operation or related AFO structure shall deliver in person or by certified mail a copy of the permit application and MMP to the county board of supervisors of the county where the confinement feeding operation or related AFO structure is proposed to be constructed. Receipt of the application and MMP by the county auditor or other county official or employee designated by the county board of supervisors is deemed receipt of the application and MMP by the county board of supervisors. Documentation of the delivery or mailing of the permit application and MMP shall be forwarded to the department.

65.105(2) *Public notice and county comment.*

a. Public notice. The county board of supervisors shall publish a notice that the board has received the construction permit application in a newspaper having general circulation in the county. The county board shall publish the notice as soon as possible but no later than 14 days after receiving instructions from the department that a complete application has been received. The notice shall include all of the following:

(1) The name of the person applying to receive the construction permit;

- (2) The name of the township where the confinement feeding operation structure is to be constructed;
- (3) Each type of confinement feeding operation structure proposed to be constructed;
- (4) The animal unit capacity of the confinement feeding operation if the construction permit were to be approved;
- (5) The time when and the place where the application may be examined as provided in Iowa Code section 22.2;
- (6) Procedures for providing public comments to the board as provided by the board.

The county shall submit to the department, within 30 days of receipt of the construction permit application, proof of publication to verify that the county provided public notice as required in this paragraph.

b. County comment. Regardless of whether the county board of supervisors has adopted a construction evaluation resolution, the board may submit to the department comments by the board and the public regarding compliance of the construction permit application and MMP with the requirements in this chapter and Iowa Code chapter 459 for obtaining a construction permit. Comments may include but are not limited to the following:

- (1) The existence of an object or location not included in the construction permit application that benefits from a separation distance requirement as provided in Iowa Code section 459.202 or 459.310.
- (2) The suitability of soils and the hydrology of the site where construction or expansion of a confinement feeding operation or related AFO structure is proposed.
- (3) The availability of land for the application of manure originating from the confinement feeding operation.
- (4) Whether the construction or expansion of a proposed AFO structure will impede drainage through established tile lines, laterals, or other improvements which are constructed to facilitate the drainage of land not owned by the person applying for the construction permit.

65.105(3) Master matrix. A county board of supervisors may adopt a construction evaluation resolution relating to the construction of a confinement feeding operation structure. The board must submit such resolution to the director of the department for filing. Adoption and filing of a construction evaluation resolution authorizes a county board of supervisors to conduct an evaluation of a construction permit application using the master matrix as follows:

a. Enrollment periods.

- (1) The county board of supervisors must file an adopted construction evaluation resolution with the department between January 1 and January 31 of each year to evaluate construction permit applications received by the department between February 1 of that year and January 31 of the following year.
- (2) Filed construction evaluation resolutions shall remain in effect until the applicable enrollment period expires or until such time as the county board of supervisors files with the department a resolution rescinding the construction evaluation resolution, whichever is earlier.
- (3) Filing of an adopted construction evaluation resolution requires a county board of supervisors to conduct an evaluation of a construction permit application using the master matrix. However, if the board fails to submit an adopted recommendation to the department or fails to comply with the evaluation requirements in paragraph 65.105(3)“b,” the department shall disregard any adopted recommendation from that board until the board timely submits a new construction evaluation resolution.

b. Use of the master matrix. If a county board of supervisors has adopted and filed with the department a construction evaluation resolution, as provided in paragraph 65.105(3)“a,” the board shall evaluate all construction permit applications filed during the applicable period using the master matrix as follows:

- (1) In completing the master matrix, the board shall not score criteria on a selective basis. The board must score all criteria that are part of the master matrix according to the terms and conditions relating to construction as specified in the application or commitments for manure management that are to be incorporated into an MMP as provided in Iowa Code section 459.312.
- (2) The board shall include with the adopted recommendation a copy of the master matrix analysis, calculations, and scoring for the application. The board’s adopted recommendation submitted to the department may be based on the master matrix or on comments received by the board. The adopted

recommendation shall include the specific reasons and any supporting documentation for the decision to recommend approval or disapproval of the application.

(3) The board shall not use the master matrix to evaluate a construction permit application for the construction or expansion of a confinement feeding operation structure if the construction or expansion is for expansion of a confinement feeding operation that includes a confinement feeding operation structure constructed prior to April 1, 2002, and, after the expansion of the confinement feeding operation, its animal unit capacity is 1,666 animal units or less. The board may still submit comments regarding the application.

65.105(4) *Inspection of proposed construction site.* The department may conduct an inspection of the site on which construction of the confinement feeding operation is proposed after providing a minimum of 24 hours' notice to the construction permit applicant or sooner with the consent of the applicant. If the county in which the proposed facility is located has adopted and submitted a construction evaluation resolution pursuant to subrule 65.105(3) and has not failed subsequently to submit an adopted recommendation, the county may designate a county employee to accompany a department official during the site inspection. In such cases, the department shall notify the county board of supervisors or county designee at least three days prior to conducting an inspection of the site where construction of the confinement feeding operation is proposed. The county designee shall have the same right to access to the site's real estate on which construction of the confinement feeding operation is proposed as the departmental official conducting the inspection during the period that the county designee accompanies the departmental official. The departmental official and the county designee shall comply with standard biosecurity requirements customarily required by the owner of the confinement feeding operation that are necessary in order to control the spread of disease among an animal population.

65.105(5) *Determination by the department.* The department must receive the county board of supervisors' comments or evaluation for approval or disapproval of an application for a construction permit not later than 30 days following the applicant's delivery of a complete application to the department. Regardless of whether the department receives comments or an evaluation by a county board of supervisors, the department must render a determination or a preliminary determination to approve or disapprove an application for a construction permit within 60 days following the applicant's delivery of a complete application to the department. However, the applicant may deliver a notice requesting a continuance. Upon receipt of a notice, the time required for the county or department to act upon the application shall be suspended for the period provided in the notice but for not more than 30 days after the department's receipt of the notice. The applicant may submit more than one notice. However, the department may terminate an application if no action is required by the department for one year following delivery of the application to the board. The department may also provide for a continuance when it considers the application. The department shall provide notice to the applicant and the board of the continuance. The time required for the department to act upon the application shall be suspended for the period provided in the notice but for not more than 30 days. However, the department shall not provide for more than one continuance. If review of the application is delayed because the application is incomplete, and the applicant fails to supply requested information within a reasonable time prior to the deadline for action on the application, the permit may be denied and a new application will be required if the applicant wishes to proceed. The department will approve or disapprove an application as follows:

a. If the county board of supervisors does not submit a construction evaluation resolution to the department, fails to submit an adopted recommendation, submits only comments, or fails to submit comments, the department shall approve the application if the application meets the requirements of this chapter and Iowa Code chapters 455B, 459, 459A and 459B. The department will disapprove the application if it does not meet such requirements.

b. If the board of supervisors for the county in which the confinement feeding operation is proposed to be constructed has filed a county construction evaluation resolution and submits an adopted recommendation to approve the construction permit application, which may be based on a satisfactory rating produced by the master matrix, to the department, the department shall preliminarily approve an application for a construction permit if the department determines that the application meets the requirements of this chapter and Iowa Code chapters 455B, 459, 459A and 459B. The department shall preliminarily disapprove an application that does not satisfy the requirements of this chapter and Iowa

Code chapters 455B, 459, 459A and 459B regardless of the adopted recommendation of the board of supervisors. The department shall consider any timely filed comments made by the board as provided in this subrule to determine if an application meets the requirements of this chapter and Iowa Code chapters 455B, 459, 459A and 459B.

c. If the board submits to the department an adopted recommendation to disapprove an application for a construction permit that is based on a rating produced by the master matrix, the department shall first determine if the application meets the requirements of this chapter and Iowa Code chapters 455B, 459, 459A and 459B. The department shall preliminarily disapprove an application that does not satisfy the requirements of this chapter and Iowa Code chapters 455B, 459, 459A and 459B, regardless of any result produced by using the master matrix. If the application meets the requirements of this chapter and Iowa Code chapters 455B, 459, 459A and 459B, the department shall conduct an independent evaluation of the application using the master matrix. The department shall preliminarily approve the application if it achieves a satisfactory rating according to the department's evaluation. The department shall preliminarily disapprove the application if it produces an unsatisfactory rating regardless of whether the application satisfies the requirements of this chapter and Iowa Code chapters 455B, 459, 459A and 459B. The department shall consider any timely filed comments made by the board as provided in this subrule to determine if an application meets the requirements of this chapter and Iowa Code chapters 455B, 459, 459A and 459B.

65.105(6) *Departmental notification of permit application decision.* Within three days following the department's determination or preliminary determination to approve or disapprove the application for a construction permit, the department shall deliver a notice of the decision to the applicant.

a. If the county board of supervisors has submitted to the department an adopted recommendation for the approval or disapproval of a construction permit application, the department shall notify the board of the department's preliminary decision to approve or disapprove the application at the same time. For a preliminary decision to approve an application, the notice shall consist of a copy of the draft construction permit. For a preliminary decision to disapprove an application, the notice shall consist of a copy of the department's letter of preliminary denial. The preliminary decision to approve or disapprove an application becomes final without further proceedings if neither the county board of supervisors nor the applicant demands a hearing before the commission or appeals pursuant to subrules 65.105(7) and 65.105(8).

b. If the county board of supervisors has not submitted to the department an adopted recommendation for the approval or disapproval of a construction permit application, the department notice shall include the construction permit or letter of denial. The applicant may appeal the permit or denial as provided in subrule 65.105(8).

65.105(7) *County board of supervisors' demand for hearing.*

a. A county board of supervisors that has submitted an adopted recommendation to the department may contest the department's preliminary decision to approve or disapprove an application for permit by filing a written intent to demand a hearing and a demand for a hearing before the commission. The intent to demand a hearing shall be sent to the director of the department and must be postmarked no later than 14 days following the board's receipt of the department's notice of preliminary decision. The demand for hearing shall be sent to the director of the department and must be postmarked no later than 30 days following the board's receipt of the department's notice of preliminary decision. A county board of supervisors that has submitted an adopted recommendation to the department may waive the right to file a demand for hearing following the receipt of the department's notice of preliminary decision by filing a written notice of waiver with the department.

b. The demand for hearing shall include a statement setting forth all of the county board of supervisors' reasons why the application for a permit should be approved or disapproved, including legal briefs and all supporting documentation, and a further statement indicating whether an oral presentation before the commission is requested.

65.105(8) *Applicant's demand for hearing.* The applicant may contest the department's preliminary decision to approve or disapprove an application for permit by filing a written intent to demand a hearing and a demand for a hearing. The applicant may elect, as part of the written demand for hearing, to have the hearing conducted before the commission pursuant to paragraph 65.105(8) "a" or before an administrative

law judge pursuant to paragraph 65.105(8) “b.” If no such election is made, the demand for hearing shall be considered to be a request for hearing before the commission. If both the applicant and the county board of supervisors are contesting the department’s preliminary decision, the applicant may request that the commission conduct the hearing on a consolidated basis.

a. Applicant demand for hearing before the commission. The intent to demand a hearing shall be sent to the director of the department and must be postmarked no later than 14 days following the board’s receipt of the department’s notice of preliminary decision. The demand for hearing shall be sent to the director of the department and must be postmarked no later than 30 days following the applicant’s receipt of the department’s notice of preliminary decision. If the county board of supervisors has filed a demand for hearing, the times for facsimile notification and filing a demand for hearing are extended an additional three business days. It is the responsibility of the applicant to communicate with the department to determine if a county demand for hearing has been filed. The demand for hearing shall include a statement setting forth all of the applicant’s reasons why the application for permit should be approved or disapproved, including legal briefs and all supporting documentation, and a further statement indicating whether an oral presentation before the commission is requested.

b. Applicant contested case appeal before an administrative law judge. The applicant may contest the department’s preliminary decision to approve or disapprove an application according to the contested case procedures set forth in 561—Chapter 7; however, if the county board of supervisors has demanded a hearing pursuant to subrule 65.105(7), the applicant shall provide facsimile notification to the department within the time frame set forth in paragraph 65.105(7) “a” that the applicant intends to contest the department’s preliminary decision according to contested case procedures. In that event, the applicant may request that the hearings be consolidated and conducted as a contested case.

65.105(9) Hearing and decision by the commission.

a. Hearing before the commission.

(1) All hearings before the commission requested pursuant to subrules 65.105(7) and 65.105(8) shall be handled as other agency action and not as a contested case.

(2) Upon receipt of a timely demand for a hearing before the commission pursuant to subrules 65.105(7) or 65.105(8), the director shall set a hearing during a regular meeting of the commission scheduled no more than 35 days from the date the director receives the first such request. However, if the next regular meeting of the commission will take place more than 35 days after receipt of the demand for hearing, the director shall schedule a special in-person meeting or an electronic meeting of the commission pursuant to Iowa Code section 21.8.

(3) No later than five days from the date the director receives a demand for hearing, the director shall post on the department’s website the demand for hearing and associated documents, letters notifying the parties of the hearing date, and the department’s complete file on the application under review. The director shall provide hard copies of these documents to members of the commission as requested by each member. The director shall contact the applicant and the county board of supervisors and provide copies of documents they request.

(4) No later than 15 days from the date set for hearing, the applicant, the county board of supervisors and the department shall, if any chooses to do so, send one copy of a reply brief to respond to issues raised in the demand for hearing and any supporting documentation to the department. The director shall post the briefs and associated written documents on the department’s website and provide hard copies to members of the commission as requested by each member. No further briefs or documents shall be permitted except upon request and permission of the commission.

(5) No later than 15 days from the date set for hearing, any person may submit written material for the commission to review. Whether such material is accepted into the record will be the decision of the chairperson of the commission depending on whether the chairperson deems it relevant to the appeal.

(6) The commission shall use the following hearing procedures:

1. All written material accepted by the chairperson of the commission for inclusion in the record at the hearing shall be marked as coming from the person or entity presenting the document.
2. Objections to submitted written material shall be noted for the record.

3. Oral participation before the commission shall be limited to time periods specified by the chairperson of the commission and, unless otherwise determined by the commission, to presentations by representatives for the applicant, the county board of supervisors and the department and by technical consultants or experts designated by the commission. Representatives of the department shall not advocate for either the county board of supervisors or the applicant but may summarize the basis for the department's preliminary decision and respond to questions by members of the commission.

4. Members of the commission, and the commission's legal counsel, may ask questions of the representatives for the applicant, the county board of supervisors and the department and of technical consultants or experts designated by the commission. The members and counsel may also ask questions of any other person or entity appearing or in attendance at the hearing. Representatives for the applicant and the county board of supervisors may ask questions of technical consultants or experts designated by the commission. No other persons or entities may ask questions of anyone making a presentation or comment at the hearing except upon request and permission by the chairperson of the commission.

(7) The commission shall use the following hearing format:

1. Announcement by the chairperson of the commission of the permit application under review.
2. Receipt into the hearing record of the demand or demands for hearing, a copy of the department's complete file on the application under review and the briefs and written documents previously provided by the applicant and county board of supervisors pursuant to subparagraph 65.105(9) "a"(4).
3. Oral presentation, if any, by the applicant if that party timely requested the hearing. If the applicant did not timely request the hearing, then the county board of supervisors shall make the first presentation.
4. Oral presentation, if any, by the applicant or county board of supervisors, whichever party did not have the opportunity to make the first presentation.
5. Oral presentation, if any, by the department.
6. Oral presentation, if any, by technical consultants or experts designated by the commission to assist in its establishment of a record at the hearing. No later than seven days prior to the hearing, the commission shall notify the applicant and the board of the names, addresses and professional capacity of any such technical experts or consultants.
7. Discussion by the commission, motion and final decision on whether the application for permit is approved or disapproved.

(8) Only the issues submitted by the parties in the demand for hearing and responses shall be considered by the commission as a basis for its decision.

b. Decision by the commission. The decision by the commission shall be stated on the record and shall be final agency action pursuant to Iowa Code chapter 17A. If the commission reverses or modifies the department's decision, the department shall issue the appropriate permit or letter of denial to the applicant. The letter of decision shall contain the reasons for the action regarding the permit.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.106(455B,459,459B) Confinement feeding operation and stockpile separation distance requirements. All confinement feeding operation structures, stockpiles and qualified stockpile structures shall be separated from locations and objects as specified in this rule regardless of whether a construction permit is required. The separation distance requirements of this rule shall apply to all confinement feeding operation structures, unless specifically stated otherwise. If two or more confinement feeding operations are considered one operation as provided in rule 567—65.1(455B,459,459A,459B), definitions of "adjacent—air quality" and "adjacent—water quality," the combined animal unit capacities of the individual operations shall be used for the purpose of determining the required separation. Exemptions to the following requirements are allowed to the extent provided in rule 567—65.107(455B,459,459B).

65.106(1) Separation distance from residences, businesses, churches, schools and public use areas for new confinement feeding operations. Separation from residences, businesses, churches, schools and public use areas shall be as specified in Iowa Code section 459.202 and summarized in Table 6 located at iowadnr.gov/afo/rules. The residence, business, church, school or public use area must exist at the time an applicant submits an application for a construction permit to the department, at the time an MMP or construction design statement is filed with the department if a construction permit is not required, or at the

time construction of the confinement feeding operation structure begins if a construction permit or construction approval letter is not required.

65.106(2) *Separation distance from residences, businesses, churches, schools and public use areas for the expansion of prior constructed operations.* Except as provided in rule 567—65.107(455B,459,459B) or as specified in Iowa Code section 459.203, an existing confinement feeding operation may be expanded if any of the following applies:

a. For a confinement feeding operation constructed prior to January 1, 1999, any construction or expansion of a confinement feeding operation structure complies with the distance requirements applying to that structure as provided in Iowa Code sections 459.202(1) and 459.202(3) and summarized in Tables 6c (for swine, sheep, horses and poultry) and 6d (for beef and dairy cattle) located at iowadnr.gov/afo/rules.

b. For a confinement feeding operation constructed on or after January 1, 1999, but prior to March 1, 2003, any construction or expansion of a confinement feeding operation structure complies with the distance requirements applying to that structure as provided in Iowa Code sections 459.202(2) and 459.202(3) and summarized in Tables 6a (for swine, sheep, horses and poultry) and 6b (for beef and dairy cattle) located at iowadnr.gov/afo/rules.

c. For a confinement feeding operation constructed on or after March 1, 2003, any construction or expansion of a confinement feeding operation structure complies with the distance requirements applying to that structure as provided in Iowa Code sections 459.202(4) and 459.202(5) and summarized in Table 6 located at iowadnr.gov/afo/rules.

65.106(3) *Separation distance from water sources, major water sources, known sinkholes and agricultural drainage wells.* Separation distances specified in this subrule shall apply to any confinement feeding operation structure, including a SAFO. Separation distances from any confinement feeding operation structure to surface intakes, wellheads or cisterns of agricultural drainage wells, known sinkholes, water sources and major water sources shall be as specified in Iowa Code section 459.310 and summarized in Tables 6 to 6d located at iowadnr.gov/afo/rules. For the required separation distance to a major water source to apply, the major water source must be included in Table 1 located at iowadnr.gov/afo/rules at the time an applicant submits an application for a construction permit to the department, at the time an MMP or construction design statement is filed with the department if a construction permit is not required, or at the time construction of the AFO structure if a construction permit, MMP or construction design statement is not required.

65.106(4) *Separation distance from designated wetlands.* Separation distances specified in this subrule shall apply to any confinement feeding operation structure, including a SAFO. A confinement feeding operation structure shall not be constructed closer than 2,500 feet away from a “designated wetland” as defined and referenced in rule 567—65.1(455B,459,459A,459B). This requirement shall not apply to a confinement feeding operation structure if any of the following occur before the wetland is included in “Designated Wetlands in Iowa”:

a. The confinement feeding operation structure already exists. This exemption also applies to additional confinement feeding operation structures constructed at the site of such an existing confinement feeding operation structure after a wetland is included in “Designated Wetlands in Iowa.”

b. Construction of a confinement feeding operation structure has begun as provided in subrule 65.6(1).

c. An application for a permit to construct a confinement feeding operation structure has been submitted to the department.

d. An MMP concerning a proposed confinement feeding operation structure for which a construction permit is not required has been submitted to the department.

65.106(5) *Separation distance from water wells.* For a confinement feeding operation structure constructed after March 20, 1996, the separation distance to water wells shall be as specified in Tables 6 to 6d located at iowadnr.gov/afo/rules.

65.106(6) *Separation distance from public thoroughfares.* A confinement feeding operation structure shall not be constructed or expanded within 100 feet from the right-of-way or a public easement of a public thoroughfare.

65.106(7) *Stockpile and qualified stockpile structures—separation distance from residences.* A stockpile or qualified stockpile structure shall not be placed closer than 1,250 feet from a residence not owned by the titleholder of the land where the stockpile is located, a commercial enterprise, a bona fide religious institution, an educational institution, or a public use area.

65.106(8) *Stockpile and qualified stockpile structures—separation distance from tile inlets, designated areas, high-quality water resources, agricultural drainage wells and known sinkholes.* A stockpile or qualified stockpile structure shall not be placed within the following distances from any of the following:

a. A terrace tile inlet or surface tile inlet, 200 feet, unless the dry manure is stockpiled in a manner that does not allow precipitation-induced runoff to drain from the stockpile to the terrace tile inlet or surface tile inlet. A terrace tile inlet or surface tile inlet does not include a tile inlet that is not directly connected to a tile line that discharges directly into a water of the state.

b. Designated area, 400 feet. However, an increased separation distance of 800 feet shall apply to all of the following:

- (1) A high-quality water resource.
- (2) An agricultural drainage well (400 feet for dry bedded manure).
- (3) A known sinkhole (400 feet for dry bedded manure).

c. Paragraph 65.106(8)“b” does not apply if dry manure is stockpiled in a manner that does not allow precipitation-induced runoff to drain from the stockpile to the designated area.

65.106(9) *Measurement of separation distances.* Except as provided in paragraph 65.106(9)“f,” the distance between confinement feeding operation structures and locations or objects from which separation is required shall be measured horizontally by standard survey methods between the closest point of the location or object (not a property line) and the closest point of the confinement feeding operation structure. The department may require that a separation distance be measured and certified by a licensed land surveyor, a PE licensed in the state of Iowa, or an NRCS-qualified staff person in cases where the department cannot confirm a separation distance. For purposes of this subrule, structure shall not include areas that do not house animals or store manure or litter.

a. Measurement to an unformed manure storage structure shall be to the point of maximum allowable level of manure pursuant to paragraph 65.100(1)“b.”

b. Measurement to a public use area shall be to the facilities that attract the public to congregate and remain in the area for significant periods of time, not to the property line.

c. Measurement to a major water source or water source shall be to the top of the bank of the stream channel of a river or stream or the ordinary high-water mark of a lake, reservoir or designated wetland.

d. Measurement to a public thoroughfare shall be to the closest point of the right-of-way.

e. The separation distance for a confinement feeding operation structure qualifying for the exemption to separation distances under paragraphs 65.107(4)“b” and “c” shall be measured from the closest point of the confinement feeding operation structure.

f. Measurement to a cemetery shall be to the closest point of its property line.

g. Measurement to a stockpile shall be to the closest point of the stockpile.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.107(455B,459,459B) Exemptions to confinement feeding operation and stockpile separation distance requirements and prohibition of construction on the one hundred year floodplain.

65.107(1) *Exemptions to separation distance requirements from a residence, business, church, school and public use area.* As specified in Iowa Code section 459.205, the separation distances required from residences, businesses, churches, schools and public use areas specified in Iowa Code sections 459.202 and 459.204B and required in subrules 65.106(1), 65.106(2), and 65.106(7), including Tables 6 to 6d located at iowadnr.gov/afo/rules, shall not apply to the following:

a. A confinement feeding operation structure, other than an unformed manure storage structure, if the structure is part of a SAFO or if the stockpile consists of dry manure originating from a SAFO.

b. A confinement feeding operation structure that is constructed or expanded, if the titleholder of the land benefiting from the distance separation requirement executes a written waiver with the titleholder of the land where the structure, stockpile or qualified stockpile structure is located, under such terms and

conditions that the parties negotiate. The waiver shall be specific to the construction or expansion project for which it is submitted. The waiver may include specific language to include future projects or expansions. The written waiver becomes effective only upon the recording of the waiver in the office of the recorder of deeds of the county in which the benefited land is located. The benefited land is the land upon which is located the residence, business, church, school or public use area from which separation is required. The filed waiver shall preclude enforcement by the department of the separation distance requirements of Iowa Code section 459.202. A copy of the recorded waiver shall be submitted with the construction design statement pursuant to subrule 65.104(2) if a construction permit is not required or as part of the construction permit application documents pursuant to subrule 65.104(1).

c. A confinement feeding operation structure that is constructed or expanded closer than the separation distances required in subrule 65.106(1) and 65.106(2), including Tables 6 to 6d located at iowadnr.gov/afo/rules, if the residence, business, church or school was constructed or expanded after the date that the confinement feeding operation commenced operating or if the boundaries of the public use area or the city expanded after the date that the confinement feeding operation commenced operating. A confinement feeding operation commences operating when it is first occupied by animals. A change in ownership or expansion of the confinement feeding operation does not change the date the operation commenced operating.

d. The stockpile consists of dry manure originating exclusively from a confinement feeding operation that was constructed before January 1, 2006, unless the confinement feeding operation is expanded after that date.

65.107(2) *Exemptions to separation distance requirements from public thoroughfares.* As specified in Iowa Code section 459.205, the separation required from public thoroughfares specified in Iowa Code section 459.202 and summarized in Tables 6 to 6d located at iowadnr.gov/afo/rules shall not apply to any of the following:

a. A confinement building or a formed manure storage structure that is part of a SAFO. However, the exemptions of this subrule shall not apply if the confinement feeding operation structure is an unformed manure storage structure.

b. If the state or a political subdivision constructing or maintaining the public thoroughfare executes a written waiver with the titleholder of the land where the confinement feeding operation structure is located. The written waiver becomes effective only upon the recording of the waiver in the office of the recorder of deeds of the county in which the benefited land is located. The recorded waiver shall be submitted with the construction design statement pursuant to subrule 65.104(2) if a construction permit is not required, or as part of the construction permit application documents pursuant to subrule 65.104(1).

65.107(3) *Exemptions to separation distance requirements for prior constructed operations and for operations that expand based on prior separation distance requirements.* As specified in Iowa Code section 459.203, a confinement feeding operation constructed or expanded prior to the date that a distance requirement became effective under Iowa Code section 459.202 and that does not comply with the statute's distance requirement may continue to operate regardless of the distance requirement and may expand as provided in subrule 65.106(2).

65.107(4) *Exemptions to separation distance requirements for prior constructed operations that expand and cannot comply with prior separation distance requirements.* As specified in Iowa Code section 459.203, a confinement feeding operation constructed or expanded prior to the date that a distance requirement became effective under Iowa Code section 459.202 and that does not comply with the distance requirements established in rule 567—65.106(455B,459,459B) and the exemption in subrule 65.107(3) may be expanded if all of the following apply to the expansion:

a. No portion of the confinement feeding operation after expansion is closer than before expansion to a location or object for which separation is required in Iowa Code section 459.202.

b. For a confinement feeding operation that includes a confinement feeding operation structure constructed prior to March 1, 2003, the animal weight capacity of the confinement feeding operation as expanded is not more than the lesser of the following:

(1) Double its animal weight capacity on the following dates:

1. May 31, 1995, for a confinement feeding operation that includes a confinement feeding operation structure constructed prior to January 1, 1999.

2. January 1, 1999, for a confinement feeding operation that only includes a confinement feeding operation structure constructed on or after January 1, 1999, but does include a confinement feeding operation structure constructed prior to March 1, 2003.

(2) Either of the following:

1. An animal weight capacity of 625,000 pounds for animals other than cattle.

2. An animal weight capacity of 1,600,000 pounds for cattle.

c. For a confinement feeding operation that does not include a confinement feeding operation structure constructed prior to March 1, 2003, the animal unit capacity of the confinement feeding operation as expanded is not more than the lesser of the following:

(1) Double its animal unit capacity on March 1, 2003.

(2) 1,000 animal units.

65.107(5) *Exemptions to separation distance requirements for prior constructed operations that replace an unformed manure storage structure.* As specified in Iowa Code section 459.203, a confinement feeding operation that includes a confinement feeding operation structure that is constructed prior to March 1, 2003, may be expanded by replacing one or more unformed manure storage structures with one or more formed manure storage structures if all of the following apply:

a. The animal weight capacity or animal unit capacity, whichever is applicable, is not increased for that portion of the confinement feeding operation that utilizes all replacement formed manure storage structures.

b. Use of each replaced unformed manure storage structure is discontinued within one year after the construction of the replacement formed manure storage structure.

c. The capacity of all replacement formed manure storage structures does not exceed the amount required to store manure produced by that portion of the confinement feeding operation utilizing the formed manure storage structures during any 14-month period.

d. No portion of the replacement formed manure storage structure is closer to an object or location for which separation is required under Iowa Code section 459.202 than any other confinement feeding operation structure that is part of the operation.

65.107(6) *Exemption to separation distance requirements from cemeteries.* As specified in Iowa Code section 459.205, the separation distance required between a confinement feeding operation structure and a cemetery shall not apply if the confinement feeding operation structure was constructed or expanded prior to January 1, 1999.

65.107(7) *Exemptions to separation distance requirements from water sources, major water sources, known sinkholes, agricultural drainage wells and designated wetlands and secondary containment.* As specified in Iowa Code section 459.310(3), the separation distance required from surface intakes, wellheads or cisterns of agricultural drainage wells, known sinkholes, water sources, major water sources and designated wetlands, specified in Iowa Code section 459.310 and summarized in Tables 6 to 6d located at iowadnr.gov/afo/rules, shall not apply to a farm pond or privately owned lake as defined in Iowa Code section 462A.2, or to a confinement building, a manure storage structure or an egg washwater storage structure constructed with a secondary containment barrier according to subrule 65.108(11). To qualify for this separation distance exemption, the design of the secondary containment barrier shall be filed in accordance with subrule 65.104(5) prior to beginning construction of the confinement feeding operation structure.

65.107(8) *Exemptions to prohibition on one hundred year floodplain construction and separation distance requirements from water sources, major water sources, known sinkholes, agricultural drainage wells and designated wetlands—replacement formed manure storage structures.* As specified in Iowa Code section 459.310(4), a separation distance required in subrules 65.106(3) and 65.106(4) or the prohibition against construction of a confinement feeding operation structure on a one hundred year floodplain as provided in subrule 65.9(1) shall not apply to a confinement feeding operation that includes a confinement feeding operation structure that was constructed prior to March 1, 2003, if any of the following apply:

a. One or more unformed manure storage structures that are part of the confinement feeding operation are replaced with one or more formed manure storage structures on or after April 28, 2003, and all of the following apply:

(1) The animal weight capacity or animal unit capacity, whichever is applicable, is not increased for that portion of the confinement feeding operation that utilizes all replacement formed manure storage structures.

(2) The use of each replaced unformed manure storage structure is discontinued within one year after the construction of the replacement formed manure storage structure.

(3) The capacity of all replacement formed manure storage structures does not exceed the amount required to store manure produced by that portion of the confinement feeding operation utilizing the replacement formed manure storage structures during any 18-month period.

(4) No portion of the replacement formed manure storage structure is closer to the location or object from which separation is required under subrules 65.106(3) and 65.106(4) than any other confinement feeding operation structure that is part of the operation.

(5) The replacement formed manure storage structure meets or exceeds the requirements of Iowa Code section 459.307 and subrule 65.108(10).

b. A replacement formed manure storage structure that is part of the confinement feeding operation is constructed on or after April 28, 2003, pursuant to a waiver granted by the department. In granting the waiver, the department shall make a finding of all of the following:

(1) The replacement formed manure storage structure replaces the confinement feeding operation's existing manure storage and handling facilities.

(2) The replacement formed manure storage structure complies with standards adopted pursuant to Iowa Code section 459.307 and subrule 65.108(10).

(3) The replacement formed manure storage structure more likely than not provides a higher degree of environmental protection than the confinement feeding operation's existing manure storage and handling facilities. If the formed manure storage structure will replace any existing manure storage structure, the department shall, as a condition of granting the waiver, require that the replaced manure storage structure be properly closed.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.108(455B,459,459B) Manure storage structure design requirements. The requirements in this rule apply to all confinement feeding operation structures unless specifically stated otherwise.

65.108(1) Drainage tile removal for new construction of a manure storage structure. Prior to constructing a manure storage structure, other than storage of manure in an exclusively dry form, the site for the AFO structure shall be investigated for drainage tile lines as provided in this subrule. All applicable records of known drainage tiles shall be examined for the existence of drainage tile lines.

a. An inspection trench of at least ten inches wide shall be dug around the structure to a depth of at least 6 feet below the original grade and within 25 feet of the proposed outside of the toe of the berm prior to excavation for an unformed manure storage structure.

b. Drainage tile lines discovered during the tile inspection of an unformed manure storage structure shall be removed and rerouted in or in an area outside the inspection trench. All tiles within the inspection trench perimeter shall be removed or completely plugged with concrete, grout or similar materials. Drainage tile lines installed at the time of construction to lower the groundwater may remain in place as long as they are outside of the proposed toe of berm.

c. The applicant for a construction permit for a formed manure storage structure shall investigate for tile lines during excavation for the structure. Drainage tile lines discovered upgrade from the structure shall be rerouted around the formed manure storage structure to continue the flow of drainage. All other drainage tile lines discovered shall be rerouted, capped, or plugged with concrete, Portland cement concrete grout or similar materials. Drainage tile lines installed at the time of construction to lower a groundwater table may remain where located even if located under the floor; however, the tile lines must be tied into the perimeter drain tile.

d. Other proven methods approved by the department may be utilized to discover drainage tile lines.

e. The requirements of this subrule do not apply if sufficient information is provided that allows the department to conclude that the location does not have a history of drainage tile.

65.108(2) *Drainage tile removal around an existing manure storage structure.* The owner of an aerobic structure, anaerobic lagoon or earthen manure storage basin or earthen waste slurry storage basin, other than an egg washwater storage structure, that is part of a confinement feeding operation with a construction permit granted before March 20, 1996, but after December 31, 1992, shall inspect for drainage tile lines as provided in this subrule, and all applicable records of known drainage tiles shall be examined. The owner of an aerobic structure, anaerobic lagoon, earthen manure storage basin or earthen waste slurry storage basin, other than an egg washwater storage structure, that is part of a confinement feeding operation with a construction permit granted before January 1, 1993, but after May 31, 1985, shall inspect for drainage tiles as provided in this subrule, and all applicable records of known drainage tiles shall be examined. Drainage tile lines shall not be installed within the separation distance provided in paragraph 65.108(1) "b" once the basin has been constructed.

a. Inspection shall be by digging an inspection trench of at least ten inches wide around the structure to a depth of at least 6 feet from the original grade and within 25 feet from the outside edge of the berm. The owner first shall inspect the area where trenching is to occur and manure management records to determine if there is any evidence of leakage and, if so, shall contact the department for further instructions as to proper inspection procedures. The owner of a confinement feeding operation shall either obtain permission from an adjoining property owner or trench up to the boundary line of the property if the distance of 25 feet would require the inspection trench to go onto the adjoining property.

b. The owner of the confinement feeding operation may utilize other proven methods approved by the department to discover drainage tile lines.

c. The drainage tile lines discovered near an aerobic structure, anaerobic lagoon, earthen manure storage basin or earthen waste slurry storage basin, other than an egg washwater storage structure, shall be removed within 25 feet of the outside edge of the berm. Drainage tile lines discovered upgrate from the aerobic structure, anaerobic lagoon or earthen manure storage basin shall be rerouted within 25 feet from the berm to continue the flow of drainage. All other drainage tile lines discovered shall be rerouted, capped, plugged with concrete, or Portland cement concrete grout or similar materials, or reconnected to upgrate tile lines. Drainage tile lines that were installed at the time of construction to lower a groundwater table may either be avoided if the location is known or may remain at the location if discovered.

d. The owner of an aerobic structure, anaerobic lagoon, earthen manure storage structure or an earthen waste slurry storage basin with a tile drainage system to artificially lower the groundwater table shall have a device to allow monitoring of the water in the drainage tile lines that lower the groundwater table and to allow shutoff of the drainage tile lines if the drainage tile lines do not have a surface outlet accessible on the property where the aerobic structure, anaerobic lagoon, earthen manure storage basin or earthen waste slurry storage basin is located.

e. If the owner of the confinement feeding operation discovers drainage tile that projects underneath the berm, the owner shall follow one of the following options:

(1) Contact the department to obtain permission to remove the drainage tile under the berm. The manure in the structure must be lowered to a point below the depth of the tile prior to removing the drainage tile from under the berm. Prior to using the structure, a new percolation test must be submitted to the department and approval received from the department.

(2) Grout the length of the tile under the berm to the extent possible. The material used to grout shall include concrete, Portland cement concrete grout or similar materials.

f. A waiver to this subrule may be granted by the director if sufficient information is provided that the location does not have a history of drainage tile.

g. A written record describing the actions taken to determine the existence of tile lines, the findings, and actions taken to comply with this subrule shall be prepared and maintained as part of the MMP records.

65.108(3) *Earthen waste slurry storage basins.* An earthen waste slurry storage basin shall have accumulated manure removed at least twice each year, unless there is sufficient basin capacity to allow removal of manure once each year and maintain freeboard as determined pursuant to paragraph 65.100(1) "b."

65.108(4) *Earthen manure storage basins.* An earthen manure storage basin shall have accumulated manure removed at least once each year. An earthen manure storage basin constructed after June 19, 2024, must have enough manure storage capacity for eight months. An earthen manure storage basin may have enough manure storage capacity to contain the manure from the confinement feeding operation for up to 14 months and maintain freeboard as determined pursuant to paragraph 65.100(1) "b."

65.108(5) *Soil testing for earthen structures.* Applicants for construction permits for earthen manure storage structures shall submit soils information according to this subrule for the site of the proposed structure. All subsurface soil classification shall be based on American Society for Testing and Materials Designations D 2487-06, effective May 1, 2006, or D 2488-06, effective November 1, 2006. Soil corings shall be taken to determine subsurface soil characteristics and groundwater elevation and direction of flow of the proposed site for an anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin. Soil corings shall be conducted by a qualified person normally engaged in soil testing activities. Data from the soil corings shall be submitted with a construction permit application and shall include a description of the geologic units encountered; a discussion of the effects of the soil and groundwater elevation and direction of flow on the construction and operation of the anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin and a discussion that addresses the suitability of the proposed structure at the site. All soil corings shall be taken by a method that identifies the continuous soil profile and does not result in the mixing of soil layers. The number and location of the soil corings will vary on a case-by-case basis as determined by the designing engineer and accepted by the department. The following are minimum requirements:

a. A minimum of four soil corings reflecting the continuous soil profile is required for each anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin. Corings which are intended to represent soil conditions at the corner of the structure must be located within 50 feet of the bottom edge of the structure and spaced so that one coring is as close as possible to each corner. Should there be no bottom corners, corings shall be equally spaced around the structure to obtain representative soil information for the site. An additional coring will be required if necessary to ensure that one coring is at the deepest point of excavation. For an anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin larger than four acres water surface area, one additional coring per acre is required for each acre above four acres surface area.

b. All corings shall be taken to a minimum depth of ten feet below the bottom elevation of the anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin.

c. At least one coring shall be taken to a minimum depth of 25 feet below the bottom elevation of the anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin or into bedrock, whichever is shallower.

d. Upon abandonment of the soil core holes, all soil core holes including those developed as temporary water level monitoring wells shall be plugged with concrete, Portland cement concrete grout, bentonite, or similar materials.

65.108(6) *Hydrology.*

a. *Groundwater table.* A minimum separation of four feet between the top of the liner for any unformed manure storage structure or earthen egg washwater storage structure and the groundwater table is recommended; however, in no case shall the top of the liner for an unformed manure storage structure or earthen egg washwater storage structure be below the groundwater table. If the groundwater table is less than two feet below the top of the liner for an unformed manure storage structure or earthen egg washwater storage structure, the unformed manure storage structure or earthen egg washwater storage structure shall be provided with a synthetic liner as described in paragraph 65.108(8) "f."

b. *Permanent artificial lowering of groundwater table.*

(1) Unformed manure storage structures. The groundwater table around an unformed manure storage structure or earthen egg washwater storage structure may be artificially lowered to levels required in paragraph 65.108(6) "a" by using a gravity flow tile drainage system or other permanent nonmechanical system for artificial lowering of the groundwater table. Detailed engineering and soil drainage information shall be provided with a construction permit application for an unformed manure storage structure or

earthen egg washwater storage structure if a drainage system for artificially lowering the groundwater table will be installed. The level to which the groundwater table will be lowered will be considered to represent the seasonal high-water table. If a drainage tile around the perimeter of the basin is installed a minimum of two feet below the top of the basin liner to artificially lower the seasonal high-water table, the top of the basin's liner may be a maximum of four feet below the seasonal high-water table which existed prior to installation of the perimeter tile system. Drainage tile lines shall be installed between the outside of the proposed toe of the berm and within 25 feet of the outside of the toe of the berm. Drainage tile lines shall be placed in a vertical trench and encased in granular material which extends upward to the level of the seasonal high-water table which existed prior to installation of the perimeter tile system. A device to allow monitoring of the water in the drainage tile lines installed to lower the groundwater table and a device to allow shutoff of the drainage tile lines shall be installed if the drainage tile lines do not have a surface outlet accessible on the property where the unformed manure storage structure is located.

(2) Formed manure storage structures. For a formed manure storage structure or a formed egg washwater storage structure, partially or completely constructed below the normal soil surface, a perimeter tile drainage system or other permanent system for artificial lowering of groundwater levels shall be installed around the structure if the groundwater table is above the bottom of the structure. The perimeter tile shall include a sample port to allow monitoring of the water in the drainage tile lines and a device to allow shutoff of the drainage tile lines if the drainage tile lines do not have a surface outlet accessible on the property where the formed manure storage structure is located or if the perimeter tile is connected to an existing tile. The perimeter tile may be tied into the monitoring port or a sump; however, there shall be a permanent automatic pump installed.

c. *Determination of groundwater table.* For purposes of this rule, groundwater table is the seasonal high-water table determined by a licensed PE, a groundwater professional certified pursuant to 567—Chapter 134, or qualified staff from the department or NRCS. If a construction permit is required, the department must approve the groundwater table determination.

(1) Current groundwater levels shall be measured using at least one of the following for either formed or unformed manure storage structures:

1. Temporary monitoring wells. A minimum of three temporary monitoring wells shall be installed. The top of the well screen shall be within five feet of the ground surface. Each well shall be extended to at least two feet below the bottom of the liner of an unformed manure storage structure or to at least two feet below the footings of a formed manure storage structure.

- Unformed manure storage structures. For an unformed manure storage structure, each monitoring well may be installed in the existing core holes resulting from the corings required in subrule 65.108(5).

- Formed manure storage structures. For a formed manure storage structure, at least three temporary monitoring wells shall be installed as close as possible to three corners of the structure, with one of the wells close to the corner of deepest excavation. If the formed manure storage structure is circular, the three monitoring wells shall be equally spaced and one well shall be placed at the point of deepest excavation.

2. Test pits. The department may allow use of test pits in lieu of temporary monitoring wells if seasonal variation in climatic patterns, soil and geologic conditions prevent accurate determination of the seasonal high-water table or prior to the construction of an unformed manure storage structure liner to ensure that the required separation distance to the groundwater table is being met. The bottom of each test pit shall be at least two feet below the floor of the manure storage structure or egg washwater storage structure. Each pit shall be allowed to remain open and unaltered for a minimum of seven days for viewing by the department or NRCS-qualified staff person for the determination of soil characteristics and related groundwater influence. Adequate protection (temporary berms and covers) shall be provided to prevent surface runoff from entering the test pits. One test pit shall be located in each corner and one in the center of the proposed manure control structure, unless otherwise specified by the department. Test pits shall be backfilled and compacted to achieve the seepage loss as outlined in subrule 65.108(7). A description of the materials present in the test pit shall be documented by all of the following:

- Digital photos;
- Description of soils including mottling;
- Construction specifications; and

- Weather conditions both prior to and during the period in which test pits are open.

(2) The seasonal high-water table shall be determined by measuring the groundwater level in the temporary monitoring wells not earlier than seven days following installation and shall include consideration of NRCS soil survey information, soil characteristics such as color and mottling, other existing water table data, and other pertinent information. If a drainage system for artificially lowering the groundwater table will be installed in accordance with the requirements of paragraph 65.108(6) "b," the level to which the groundwater table will be lowered will be considered to represent the seasonal high-water table.

65.108(7) *Seals for unformed manure storage structures and unformed egg washwater storage structures.* An unformed manure storage structure or egg washwater storage structure shall be sealed such that seepage loss through the seal shall not exceed 1/16 inch per day at the design depth of the structure. Following construction of the structure, the results of a testing program that indicates the adequacy of the seal shall be provided to that department in writing prior to start-up of a permitted operation.

65.108(8) *Unformed manure storage structure and unformed egg washwater storage structure liner design and construction standards.* An unformed manure storage structure or unformed egg washwater storage structure that receives a construction permit after January 21, 1998, shall comply with the following minimum standards in addition to subrule 65.108(7).

a. If the location of the proposed unformed manure storage structure or unformed egg washwater storage structure contains suitable materials as determined by the soil corings taken pursuant to subrule 65.108(5), those materials shall be compacted to establish a minimum of a 12-inch liner. A minimum initial overexcavation of six inches of material shall be required. The underlying material shall be scarified, reworked and compacted to a depth of six inches. The overexcavated materials shall be replaced and compacted.

b. If the location of the proposed unformed manure storage structure or unformed egg washwater storage structure does not contain suitable materials as determined by the soil corings taken pursuant to subrule 65.108(5), suitable materials shall be obtained from another location approved by the department and shall be compacted to establish a minimum of a 24-inch liner.

c. Where sand seams, gravel seams, organic soils or other materials that are not suitable are encountered during excavation, the area where they are discovered shall be overexcavated a minimum of 24 inches and replaced with suitable materials and compacted.

d. All loose lift material must be placed in lifts of nine inches or less and compacted. The material shall be compacted at or above optimum moisture content and meet a minimum of 95 percent of the maximum density as determined by the Standard Proctor test after compaction.

e. For purposes of this rule, suitable materials means soil, soil combinations or other similar material that is capable of meeting the permeability and compaction requirements. Sand seams, gravel seams, organic soils or other materials generally not suitable for unformed manure storage structure or unformed egg washwater storage structure construction are not considered suitable liner materials.

f. As an alternative to the above standards, a synthetic liner may be used. If the use of a synthetic liner is planned for an unformed manure storage structure or unformed egg washwater storage structure, the permit application shall outline how the site will be prepared for placement of the liner, the physical, chemical, and other pertinent properties of the proposed liner, and information on the procedures to be used in liner installation and maintenance. In reviewing permit applications that involve use of synthetic liners, the department will consider relevant synthetic liner standards adopted by industry, governmental agencies, and professional organizations as well as technical information provided by liner manufacturers and others.

g. For berm erosion control, the following requirements apply to unformed manure storage structures and unformed egg washwater storage structures constructed after May 12, 1999:

(1) Concrete, riprap, synthetic liners or similar erosion control materials or measures shall be used on the berm surface below pipes where manure will enter the structure.

(2) Concrete, riprap, synthetic liners or similar erosion control materials or measures of sufficient thickness and area to accommodate manure removal equipment and to protect the integrity of the liner shall be placed at all locations on the berm, side slopes, and base of the structure where agitation or pumping may cause damage to the liner.

- (3) Erosion control materials or measures shall be used at the corners of the structure.
- (4) To control erosion, perennial (grass) vegetation must be maintained on the outer, top and inner dikes up to the two-foot freeboard level of the unformed storage structure or earthen egg washwater storage structure, unless covered by concrete, riprap, synthetic liners or similar erosion control materials or measures.
- (5) The owner of a confinement feeding operation with an unformed manure storage structure or an unformed egg washwater storage structure shall inspect the structure berms at least semiannually for evidence of erosion. Erosion problems found that may impact either structural stability or liner integrity shall be corrected in a timely manner.
 - h.* After May 29, 1997, a person shall not construct a new or expand an existing unformed manure storage structure or an unformed egg washwater storage structure within an agricultural drainage well area.
 - i.* The top width of any dike shall be a minimum of ten feet wide. The interior and exterior dike slopes shall not be steeper than three feet horizontal to one foot vertical.

65.108(9) Anaerobic lagoon design standards. An anaerobic lagoon shall meet the requirements of this subrule.

a. General.

- (1) Depth. Liquid depth shall be at least 8 feet, but 15 to 20 feet is preferred if soil and other site conditions allow.
- (2) Inlet. One subsurface inlet at the center of the lagoon or dual (subsurface and surface) inlets are preferred to increase dispersion. If a center inlet is not provided, the inlet structure shall be located at the center of the longest side of the anaerobic lagoon.
- (3) Shape. Long, narrow anaerobic lagoon shapes decrease manure dispersion and should be avoided. Anaerobic lagoons with a length-to-width ratio of greater than 3:1 shall not be allowed.
- (4) Aeration. Aeration shall be treatment as an “add-on process” and shall not eliminate the need for compliance with all anaerobic lagoon criteria contained in these rules.
- (5) Manure loading frequency. The anaerobic lagoon shall be loaded with manure and dilution water at least once per week.
- (6) Design procedure. Total anaerobic lagoon volume shall be determined by summation of minimum stabilization volume; minimum dilution volume (not less than 50 percent of minimum stabilization volume); manure storage between periods of disposal; and storage for eight inches of precipitation.
- (7) Manure storage period. Annual or more frequent manure removal from the anaerobic lagoon, preferably prior to May 1 or after September 15 of the given year, shall be practiced to minimize odor production. Design manure storage volume between disposal periods shall not exceed the volume required to store 14 months’ manure production. Manure storage volume shall be calculated based on the manure production values found in Table 5 located at iowadnr.gov/afo/rules.

b. Minimum stabilization volume and loading rate.

- (1) For all animal species other than beef cattle, there shall be 1,000 cubic feet minimum design volume for each 5 pounds of volatile solids produced per day if the volatile solids produced per day are 6,000 pounds or fewer and for each 4 pounds if the volatile solids produced per day are more than 6,000 pounds. For beef cattle, there shall be 1,000 cubic feet minimum design volume for each 10 pounds of volatile solids produced per day.
- (2) In Lyon, Sioux, Plymouth, Woodbury, Osceola, Dickinson, Emmet, Kossuth, O’Brien, Clay, Palo Alto, Cherokee, Buena Vista, Pocahontas, Humboldt, Ida, Sac, Calhoun, and Webster Counties for all animal species other than beef there shall be 1,000 cubic feet minimum design volume for each 4.5 pounds of volatile solids per day if the volatile solids produced per day are 6,000 pounds or fewer. However, if a water analysis as required in subparagraph 65.108(9)“c”(2) below indicates that the sulfate level is below 500 milligrams per liter, then the rate is 1,000 cubic feet for each 5.0 pounds of volatile solids per day.
- (3) Credit shall be given for removal of volatile solids from the manure stream prior to discharge to the lagoon. The credit shall be in the form of an adjustment to the volatile solids produced per day. The adjustments shall be at the rate of 0.5 pound for each pound of volatile solids removed. For example, if a swine facility produces 7,000 pounds of volatile solids per day, and if 2,000 pounds of volatile solids per day are removed, the volatile solids produced per day would be reduced by 1,000 pounds, leaving an

adjusted pounds of volatile solids produced per day of 6,000 pounds (for which the loading rate would be 5 pounds according to subparagraph 65.108(9)“b”(1) above).

(4) Credit shall be given for mechanical aeration if the upper one-third of the lagoon volume is mixed by the aeration equipment and if at least 50 percent of the oxygen requirement of the manure is supplied by the aeration equipment. The credit shall be in the form of an increase in the maximum loading rate (which is the equivalent of a decrease in the minimum design volume) in accordance with Table 8 located at iowadnr.gov/afo/rules.

(5) If a credit for solids removal is given in accordance with subparagraph 65.108(9)“b”(3) above, the credit for qualified aeration shall still be given. The applicant shall submit evidence of the five-day biochemical oxygen demand (BOD5) of the manure after the solids removal so that the aeration credit can be calculated based on an adjustment rate of 0.5 pound for each pound of solids removed.

(6) American Society of Agricultural and Biological Engineers standards, “Manure Production and Characteristics,” D384.2, effective March 2005, or Midwest Plan Service-18, Table 2-1, effective January 2004, shall be used in determining the BOD5 production and volatile solid production of various animal species.

c. Water supply.

(1) The source of the dilution water discharged to the anaerobic lagoon shall be identified.

(2) The sulfate concentration of the dilution water to be discharged to the anaerobic lagoon shall be identified. The sulfate concentration shall be determined by standard methods as defined in rule 567—60.2(455B).

(3) A description of available water supplies shall be provided to prove that adequate water is available for dilution. It is recommended that, if the sulfate concentration exceeds 250 mg/l, then an alternate supply of water for dilution should be sought.

d. Initial lagoon loading. Prior to the discharge of any manure to the anaerobic lagoon, the lagoon shall be filled to a minimum of 50 percent of its minimum stabilization volume with fresh water.

e. Lagoon manure and water management during operation. Following initial loading, the manure and water content of the anaerobic lagoon shall be managed according to either of the following:

(1) For single-cell lagoons or multicell lagoons without a site-specific lagoon operation plan. The total volume of fresh water for dilution added to the lagoon annually shall equal one-half the minimum stabilization volume. At all times, the amount of fresh water added to the lagoon shall equal or exceed the amount of manure discharged to the lagoon.

(2) For a two- or three-cell anaerobic lagoon. The manure and water content of the anaerobic lagoon may be managed in accordance with a site-specific lagoon operation plan approved by the department. The lagoon operation plan must describe in detail the operational procedures and monitoring program to be followed to ensure proper operation of the lagoon. Operational procedures shall include identifying the amounts and frequencies of planned additions of manure, fresh water and recycle water, and amount and frequencies of planned removal of solids and liquids. Monitoring information shall include locations and intervals of sampling, specific tests to be performed, and test parameter values used to indicate proper lagoon operation. As a minimum, annual sampling and testing of the first lagoon cell for electrical conductivity and either chemical oxygen demand (COD) or total ammonia (NH₃ + NH₄) shall be required.

f. Manure removal. If the anaerobic lagoon is to be dewatered once a year, manure should be removed to approximate the annual manure volume generated plus the dilution water used. If the anaerobic lagoon is to be dewatered more frequently, the anaerobic lagoon liquid level should be managed to maintain adequate freeboard.

65.108(10) *Concrete standards.*

a. A formed manure storage structure that is constructed of concrete on or after March 24, 2004, and that is part of a confinement feeding operation other than a SAFO shall meet the following minimum design and concrete standards and be designed by either of the two methods listed below:

(1) Design of a formed manure storage structure prepared and sealed by a PE or an NRCS engineer shall be in accordance with the American Concrete Institute (ACI) Building Code ACI 318-19, effective May 3, 2019, ACI 360R-10, effective April 2010, or ACI 350-20, effective November 6, 2020; Portland Cement Association (PCA) publication EB075, effective April 19, 2021, or PCA EB001.16, effective

September 2016; or Midwest Plan Service (MWPS) publication MWPS-36 2nd Edition, effective 2005, or MWPS TR-9, effective 1999, and shall also meet the minimum design and concrete standards in paragraph 65.108(10) "b."

(2) If a formed manure storage structure is not designed by a PE or NRCS engineer, the design and specifications shall be in conformance with MWPS-36 2nd Edition (for a belowground rectangular tank), with MWPS TR-9 (for a circular tank) or in accordance with Appendix C located at iowadnr.gov/afo/rules (for a belowground, laterally braced rectangular tank). A formed manure storage structure with a depth greater than 12 feet shall be designed by a PE or NRCS engineer.

b. Formed manure storage structures used to store liquid manure, dry manure or dry bedded manure shall meet all of the following minimum requirements:

(1) All concrete shall have the following minimum as-placed compressive strengths and shall meet American Society for Testing and Materials (ASTM) standard ASTM C 94-18, effective December 15, 2018:

1. 4,000 pounds per square inch (psi) for walls, floors, beams, columns and pumpouts;
2. 3,000 psi for the footings.

The average concrete strength by testing shall not be below design strength. No single test result shall be more than 500 psi less than the minimum compressive strength.

(2) Cementitious materials shall consist of Portland cement conforming to ASTM C 150, effective July 1, 2022. Aggregates shall conform to ASTM C 33-18, effective March 15, 2018. Blended cements in conformance with ASTM C 595, effective December 15, 2008, are allowed only for concrete placed between March 15 and October 15. Portland-pozzolan cement or Portland blast furnace slag blended cements shall contain at least 75 percent, by mass, of Portland cement.

(3) All concrete placed for walls shall be consolidated or vibrated, by manual or mechanical means, or a combination, in a manner that meets ACI 309R, effective January 2005.

(4) All steel rebar used shall be a minimum of grade 40 steel. All rebar, with the exception of rebar dowels connecting the walls to the floor or footings, shall be secured and tied in place prior to the placing of concrete.

(5) Waterstops shall be installed in all areas where fresh concrete meets hardened concrete. Waterstops shall be made of plastic, rolled bentonite or similar materials approved by the department. Only embedded waterstops are allowed in vertical joints. Adhesive or self-sticking waterstops shall not be used on vertical joints.

(6) The finished subgrade of a formed manure storage structure shall be graded and compacted to provide a uniform and level base and shall be free of vegetation, manure and debris. For the purpose of this subrule, "uniform" means a finished subgrade with similar soils.

(7) When the groundwater table, as determined in paragraph 65.108(6) "c" is above the bottom of the formed manure storage structure, a drain tile shall be installed along the footings to artificially lower the groundwater table pursuant to paragraph 65.108(6) "b." The drain tile shall be placed within three feet of the footings as indicated in Appendix C, Figure C-1, located at iowadnr.gov/afo/rules, and shall be covered with a minimum of two inches of gravel, granular material, fabric or a combination of these materials to prevent plugging the drain tile.

(8) All floor slabs shall be a minimum of five inches thick and have minimum primary reinforcement using one of the following methods:

1. Grade 40 #4 steel rebar, placed at a maximum of 18 inches on center each way in a single mat. Floor slab reinforcement shall be located in the middle of the thickness of the floor slab.

2. Glass fiber-reinforced polymer (GFRP) rebar, fiber-reinforced polymer (FRP) rebar or composite rebar may be used in floor slabs only and shall conform to ACI 440.11.22, effective September 2, 2022, and Table 3 of ASTM 7957, effective February 1, 2022. Supporting documentation shall be submitted for nonsteel rebar demonstrating the equivalency to #4 steel rebar at 18 inches on center each way. GFRP rebar shall not be manufactured using a polyester-based resin system per ASTM D7957 and shall meet the additional following ASTM D7957 parameters:

- Mean Tensile Modulus of Elasticity.....>6,500,000 psi (44,800 MPa)
- Guaranteed Bond Strength.....>1,100 psi (7.6 MPa)

3. Fiber-reinforced concrete (FRC) may be used in floor slabs only and shall conform to the requirements of ASTM C1116/C1116M Type I (steel FRC) and Type III (synthetic FRC), effective September 1, 2023. FRC shall provide a minimum average equivalent strength ratio (Re3) of 30 percent when tested in accordance with ASTM C1812/1812M, effective December 15, 2022.

4. Fiber mesh shall not be substituted for primary reinforcement.

5. Nondestructive methods to verify the floor slab thickness may be required by the department. The results shall indicate that at least 95 percent of the floor slab area meets the minimum required thickness. In no case shall the floor slab thickness be less than four and one-half inches.

(9) The footing or the area where the floor comes in contact with the walls and columns shall have a thickness equal to the wall thickness, but in no case be less than eight inches, and the width shall be at least twice the thickness of the footing. All exterior walls shall have footings below the frostline. Tolerances shall not exceed negative one-half inch of the minimum footing dimensions.

(10) The vertical steel of all walls shall be extended into the footing and be bent at 90° or a separate dowel shall be installed as a #4 rebar that is bent at 90° with at least 20 inches of rebar in the wall and extended into the footing within 3 inches of the bottom of the footing and extended at least 3 inches horizontally, as indicated in Appendix C, Figure C-1, located at iowadnr.gov/afo/rules. As an alternative to the 90° bend, the dowel may be extended at least 12 inches into the footing, with a minimum concrete cover of 3 inches at the bottom. Dowel spacing (bend or extended) shall be the same as the spacing for the vertical rebar. In lieu of dowels, mechanical means or alternate methods may be used as anchorage of interior walls to footings.

(11) All footings, slabs, and walls shall be formed with rigid forming systems and shall not be earth-formed. Form ties shall be nonremovable to provide a liquid-tight structure. No conduits or pipes shall be installed through an outside wall below the maximum liquid level of the structure.

(12) All wall reinforcement shall be placed so as to have a rebar cover of two inches from the inside face of the wall for a belowground manure storage structure. Vertical wall reinforcement should be placed closest to the inside face. Rebar placement shall not exceed tolerances specified in ACI 318-19.

(13) All construction joints in exterior walls shall be constructed to prevent discontinuity of steel and have properly spliced rebar placed through the joint.

(14) All concrete shall be cured for at least seven days after placing, in a manner which meets ACI 308R-16, effective May 2016, by maintaining adequate moisture or preventing evaporation. Proper curing shall be done by ponding, spraying or fogging water; by using a curing compound that meets ASTM C 309, effective August 22, 2019; or by using wet burlap, plastic sheets or similar materials.

(15) Backfilling of the walls shall not start until the floor slabs or permanent bracing has been installed and grouted. Backfilling shall be performed with material free of vegetation, large rocks or debris.

(16) If air temperature is below 40 degrees Fahrenheit, the ACI Standard 306R-16, "Recommended Practice for Cold Weather Concreting," effective September 2016, should be followed. If ready-mix concrete temperature is above 90 degrees Fahrenheit, the ACI Standard 305R-20, "Recommended Practice for Hot Weather Concreting," effective date September 2020, should be followed.

c. Formed manure storage structures constructed of steel or pre-cast concrete shall be designed by a PE and certified by the PE and the manufacturer's representative that the structure was built in accordance with the manufacturer's requirements.

65.108(11) *Secondary containment barriers for manure storage structures.* Secondary containment barriers used to qualify any confinement feeding operation for the exemption provision in subrule 65.107(7) shall be filed with the department according to subrule 65.104(5) and shall meet the following design standards:

a. A secondary containment barrier shall consist of a structure surrounding or downslope of a manure storage structure and shall be designed according to either of the following:

(1) If the manure storage structure is used to store liquid or semiliquid manure, the secondary containment barrier shall be designed to contain 120 percent of the volume of manure stored above the manure storage structure's final grade or 50 percent of the volume of manure stored belowground or partially belowground, whichever is greater. Engineering drawings prepared by a PE licensed in Iowa or an NRCS-qualified staff person must be submitted according to procedures set forth in subrule 65.104(5) and

must show compliance with subrule 65.108(11). If the containment barrier does not surround the manure storage structure, upland drainage must be diverted. For purposes of this subrule only, semiliquid manure means manure that contains a percentage of dry matter that results in manure too solid for pumping but too liquid for stacking.

(2) If the manure storage structure is used for the storage of only dry manure or dry bedded manure, the secondary containment barrier shall be designed to contain at least 10 percent of the volume of manure stored. Detailed drawings prepared by the owner or a representative must be submitted according to procedures set forth in subrule 65.104(5) and must show compliance with subrule 65.108(1). If the containment barrier does not surround the manure storage structure, upland drainage must be diverted. Any dry manure retained by the secondary containment barrier shall be removed and properly disposed of within 14 days.

b. The barrier may be constructed of earth, concrete, or a combination of both. If a relief outlet or valve is installed, the relief outlet or valve shall remain closed. Any accumulated liquid due to an overflow shall be land-applied as stated in the operation's MMP.

c. The base shall slope to a collecting area where storm water can be pumped out. If storm water is contaminated with manure, it shall be land-applied at normal fertilizer application rates in compliance with rule 567—65.101(455B,459,459B).

d. Secondary containment barriers constructed entirely or partially of earth shall comply with the following requirements:

(1) The soil surface, including dike, shall be constructed to prevent downward water movement at rates greater than 1×10^{-6} cm/sec and shall be maintained to prevent downward water movement at rates greater than 1×10^{-5} cm/sec.

(2) Dikes shall not be steeper than 45 degrees and shall be protected against erosion. If the slope is 19 degrees or less, grass can be sufficient protection, provided it does not interfere with the required soil seal.

(3) The top width of the dike shall be no less than three feet.

e. Secondary containment barriers constructed of concrete shall be watertight and comply with the following requirements:

(1) The base of the containment structure shall be designed to support the manure storage structure and its contents.

(2) The concrete shall be routinely inspected for cracks, which shall be repaired with a suitable sealant.

f. Nothing shall be stored within a secondary containment barrier, including but not limited to machinery or feedstock.

65.108(12) Human sanitary waste. Human sanitary waste shall not be discharged to a manure storage structure or egg washwater storage structure.

65.108(13) Requirements for qualified operations. A confinement feeding operation that meets the definition of a qualified operation shall only use an aerobic structure for manure storage and treatment. This requirement does not apply to the following types of confinement feeding operations: (1) one that only handles dry manure; (2) an egg washwater storage structure; (3) a confinement feeding operation that was constructed before May 31, 1995, and does not expand; or (4) a confinement feeding operation that processes manure using an anaerobic digester system.

65.108(14) Aboveground formed manure storage structures with external outlet or inlet below the liquid level. A formed manure storage structure that is constructed to allow the storage of manure wholly or partially above ground and that has an external outlet or inlet below the liquid level shall have all of the following:

a. Two or more shutoff valves on any external outlet or inlet below the liquid level. At least one shutoff valve shall be located inside the structure and be operable if the external valve becomes inoperable or broken off. Alternative options may be considered by the department.

b. All external outlets or inlets below the liquid level shall be barricaded, encased in concrete, or otherwise protected to minimize accidental destruction.

c. Construction shall comply with the manufacturer's requirements.

d. An emergency response plan for retaining manure at the site and cleanup if the manure storage structure fails or there is any other type of accidental discharge. The plan shall consist of telephone numbers to comply with subrule 65.2(1) and a list of contractors, equipment, equipment technical support, and alternative manure storage or land application sites that can be used during inclement weather.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.109(455B,459,459B) Construction certification. A confinement feeding operation that obtains a construction permit after March 20, 1996, shall submit to the department a construction certification according to the following:

65.109(1) For a confinement feeding operation that is below the threshold requirements for an engineer prior to using a permitted confinement feeding operation structure, the person responsible for constructing a formed manure storage structure or the permittee shall submit to the department a construction certification, as specified in the construction permit.

65.109(2) For a confinement feeding operation that uses an unformed manure storage structure or an egg washwater storage structure, or an operation that meets or exceeds the threshold requirements for an engineer, a certification from a licensed PE that the confinement feeding operation structure was:

a. Constructed in accordance with the design plan. Any changes to the approved plans must first be authorized by the department and must include a certification that the proposed changes are consistent with the standards of these rules or statute;

b. Supervised by the licensed PE or a designee of the PE during critical points of the construction. A designee shall not be the permittee, the owner of the confinement feeding operation, a direct employee of the permittee or owner, or the contractor or an employee of the contractor;

c. Inspected by the licensed PE after completion of construction and before commencement of operation; and

d. Constructed in accordance with the drainage tile removal standards of subrule 65.108(1) and including a report of the findings and actions taken to comply with subrule 65.108(1).

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.110(455B,459,459B) Manure management plan (MMP) requirements.

65.110(1) In accordance with Iowa Code section 459.312, the following persons are required to submit MMPs to the department, including an original MMP and an updated MMP, as required by this rule:

a. An applicant for a construction permit for a confinement feeding operation. However, an MMP shall not be required of an applicant for an egg washwater storage structure or for a SAFO.

b. The owner of a confinement feeding operation, other than a SAFO, if one of the following applies:

(1) The confinement feeding operation was constructed or expanded after May 31, 1985, regardless of whether the confinement feeding operation structure was required to have a construction permit.

(2) The owner constructs a manure storage structure, regardless of whether the person is required to be issued a permit for the construction pursuant to Iowa Code section 459.303 or whether the person has submitted a prior MMP. If the new manure storage structure does not result in an increase in manure volume for the confinement feeding operation and there is no change in animal category for determining animal units, then a new MMP is not required to be submitted.

c. A person who applies manure in Iowa that was produced in a confinement feeding operation, other than a small operation, located outside of Iowa.

d. A new owner of a confinement feeding operation may apply manure under the most recent owner's MMP until the new owner develops and submits an original MMP. The new owner must develop and submit an original MMP within 60 days after acquiring the operation.

e. Exceptions.

(1) A research college is exempt from this subrule and the MMP requirements of rule 567—65.111(455B,459,459B) for research activities and experiments performed under the authority of the research college and related to confinement feeding operations.

(2) An AFO otherwise required to submit an updated MMP and pay an annual compliance fee may make an election to be considered a SAFO for purposes of filing updated MMPs and annual compliance fees if the confinement feeding operation maintains an animal unit capacity of 500 or fewer animal units.

The election shall automatically terminate when more than 500 animal units are housed at the confinement feeding operation at any one time. If the confinement feeding operation exceeds more than 500 animal units, an MMP shall be submitted.

65.110(2) The owner of a proposed confinement feeding operation who is not required to obtain a construction permit pursuant to subrule 65.103(1) but who is required to file an MMP pursuant to paragraph 65.110(1)“b” shall file a construction design statement and provide the information required in subrule 65.104(2), including the confinement feeding operation’s MMP, to the department at least 30 days before the construction of an AFO structure begins, as defined in subrules 65.6(1) and 65.6(2).

65.110(3) Scope of MMP; updated plans; annual compliance fee.

a. Each confinement feeding operation required to submit an MMP shall be covered by a separate MMP.

b. The owner of a confinement feeding operation who is required to submit an MMP under this rule shall submit an updated MMP on an annual basis to the department. The updated MMP may be submitted by hard copy or by electronic submittal. The updated plan must reflect all amendments made during the period of time since the previous MMP submission.

(1) If the plan is submitted by hard copy, the submittal process shall be as follows: The owner of the AFO shall also submit the updated MMP on an annual basis to the board of supervisors of each county where the confinement feeding operation is located and to the board of supervisors of each county where manure from the confinement feeding operation is land-applied. If the owner of the AFO has not previously submitted an MMP to the board of supervisors of each county where the confinement feeding operation is located and each county where manure is land-applied, the owner must submit a complete MMP to each required county. The county auditor or other county official or employee designated by the county board of supervisors may accept the updated plan on behalf of the board. The updated plan shall include documentation that the county board of supervisors or other designated county official or employee received the MMP update.

(2) If the plan is submitted electronically, the submittal process shall be as follows: The owner of the AFO shall submit the updated MMP to the department through the department’s electronic web application. Once the submittal has been completed, the department shall provide electronic access of the updated MMP to the board of supervisors of each county where the confinement feeding operation is located and each county where manure is land-applied.

(3) The department will stagger the dates by which the updated MMPs are due and will notify each confinement feeding operation owner of the date on which the updated MMP is due. To satisfy the requirements of an updated MMP, an owner of a confinement feeding operation must submit one of the following:

1. A complete MMP;
2. A department-approved document stating that the MMP submitted in the prior year has not changed; or
3. A department-approved document listing all the changes made since the previous MMP was submitted and approved.

c. An annual compliance fee of \$0.15 per animal unit at the AFO shall accompany an annual MMP update submitted to the department for approval. The annual compliance fee is based on the animal unit capacity of the confinement feeding operation stated in the updated annual MMP submission. If the person submitting the MMP is a contract producer, as provided in Iowa Code chapter 202, the active contractor shall pay the annual compliance fee.

65.110(4) The department shall review and approve or disapprove all complete MMPs within 60 days of the date they are received.

65.110(5) Manure shall not be removed from a manure storage structure which is part of a confinement feeding operation required to submit an MMP until the department has approved the plan. Manure shall be applied in compliance with rule 567—65.100(455B,459,459B).

65.110(6) Manure storage indemnity fee. All persons required to submit an MMP to the department shall also pay to the department an indemnity fee as required in Iowa Code section 459.503 except those operations constructed prior to May 31, 1995, which were not required to obtain a construction permit.

65.110(7) Filing fee. Any person submitting an original MMP must also pay to the department an MMP filing fee of \$250. This fee shall be included with each original MMP being submitted. If the confinement feeding operation is required to obtain a construction permit and to submit an original MMP as part of the construction permit requirements, the applicant must pay the MMP filing fee together with the construction permit application fee, which total \$500.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.111(455B,459,459B) MMP content requirements. All MMPs are to be submitted on forms or electronically as prescribed by the department. The plans shall include all of the information specified in Iowa Code section 459.312 and as described below.

65.111(1) General.

a. A confinement feeding operation that is required to submit an MMP to the department shall not apply manure in excess of the nitrogen use levels necessary to obtain optimum crop yields. A confinement feeding operation shall not apply manure in excess of the rates determined in conjunction with the phosphorus index. Information to complete the required calculations may be obtained from the tables in this chapter, actual testing samples or from other credible sources reviewed and approved by the department including but not limited to Iowa State University, the United States Department of Agriculture (USDA), a licensed PE, or an individual certified as a crop consultant under the American Registry of Certified Professionals in Agronomy, Crops, and Soils program, the Certified Crop Advisors program, or the Registry of Environmental and Agricultural Professionals program.

b. MMPs shall include all of the following:

(1) The name of the owner and the name of the confinement feeding operation, including mailing address and telephone number.

(2) The name of the contact person for the confinement feeding operation, including mailing address and telephone number.

(3) The location of the confinement feeding operation identified by county, township, section, $\frac{1}{4}$ section and, if available, the 911 address.

(4) The animal unit capacity of the confinement feeding operation and, if applicable, the animal weight capacity.

c. A person who submits an MMP shall include a phosphorus index as part of the MMP as required in subrule 65.111(12).

d. A new owner of a confinement feeding operation may apply manure under the most recent owner's MMP until the new owner develops and submits an original MMP. The new owner must develop and submit an original MMP within 60 days after acquiring the confinement feeding operation.

e. A research college is exempt from this subrule for research activities and experiments performed under the authority of the research college and related to confinement feeding operations.

65.111(2) MMP contents. Confinement feeding operations that will not sell all of their manure shall submit the following for that portion of the manure which will not be sold:

a. The name of the owner and the name of the confinement feeding operation, including mailing address and telephone number.

b. The name of the contact person for the confinement feeding operation, including mailing address and telephone number.

c. The location of the confinement feeding operation identified by county, township, section, $\frac{1}{4}$ section and, if available, the 911 address.

d. An estimate of the nitrogen and phosphorus concentration of the manure and estimate of annual manure production.

e. Application rate calculations based on regulations in subrule 65.111(12).

f. The location of manure application.

g. Soil loss calculations using methods specified for Iowa phosphorus index.

h. A phosphorus index of each field in the MMP, as defined in paragraph 65.111(12)“a,” including the factors used in the calculation. A copy of the NRCS phosphorus index detailed report shall satisfy the requirement to include the factors used in the calculation.

65.111(3) *Estimate of manure concentration and production.* An MMP must include an estimate of nitrogen and phosphorus concentration and an estimate of annual manure production by one of the following methods.

- a.* Table values in Table 4 located at iowadnr.gov/afo/rules or other credible sources.
- b.* Actual concentration and production values from the operation or a similar operation. If an actual sample is used to represent the nutrient content of manure, the sample shall be taken in accordance with Iowa State University Extension and Outreach publication AE 3550, "How to Sample Manure for Nutrient Analysis." The department may require documentation of the manure sampling protocol or take a split sample to verify the nutrient content of the operation's manure. If actual nitrogen and phosphorus are used for concentration in the MMP, actual manure production must also be used. Any sample used to estimate the concentration of manure must be less than four years old.

65.111(4) *Optimum crop yield and crop schedule.*

a. To determine the optimum crop yield, the applicant may either exclude the lowest crop yield for the period of the crop schedule in the determination or allow for a crop yield increase of 10 percent. In using these methods, adjustment to update yield averages to current yield levels may be made if it can be shown that the available yield data is not representative of current yields. The optimum crop yield shall be determined using any of the following methods for the cropland where the manure is to be applied:

(1) Soil survey interpretation record. The plan shall include a map showing soil map units for the fields where manure will be applied. The optimum crop yield for each field shall be determined by using the weighted average of the soil interpretation record yields for the soils on the cropland where the manure is to be applied. Soil interpretation records from NRCS shall be used to determine yields based on soil map units.

(2) USDA county crop yields. The plan shall use the county yield data from the USDA Iowa Agricultural Statistics Service.

(3) Proven yield methods. Proven yield methods may only be used if a minimum of the most recent three years of yield data for the crop is used. These yields can be proven on a field-by-field or farm-by-farm basis. To be considered a farm-by-farm basis, the fields must be owned, rented or leased for crop production by the person required to keep records pursuant to subrule 65.111(8) or included in a manure application agreement in that person's MMP. Crop disaster years may be excluded when there is a 30 percent or more reduction in yield for a particular field or farm from the average yield over the most recent five years. Excluded years shall be replaced by the most recent nondisaster years. Proven yield data used to determine application rates shall be maintained with the current MMP. Any of the following proven yield methods may be used:

1. Proven yields for USDA Farm Service Agency. The plan shall use proven yield data or verified yield data for Farm Service Agency programs.

2. Proven yields for multiperil crop insurance. Yields established for the purpose of purchasing multiperil crop insurance shall be used as proven yield data.

3. Proven yields from other methods. The plan shall use the proven yield data and indicate the method used in determining the proven yield.

b. Crop schedule. Crop schedules shall include the name and total acres of the planned crop on a field-by-field or farm-by-farm basis where manure application will be made. A map may be used to indicate crop schedules by field or farm. The planned crop schedule shall name the crop(s) planned to be grown for the length of the crop rotation beginning with the crop planned or actually grown during the year this plan is submitted or the first year manure will be applied. The confinement feeding operation owner shall not be penalized for exceeding the nitrogen or phosphorus application rate for an unplanned crop if crop schedules are altered because of weather, farm program changes, market factor changes, or other unforeseeable circumstances. However, the penalty preclusion in the previous sentence does not apply to a confinement feeding operation owner subject to the NPDES permit program.

65.111(5) *Location of manure application.*

a. The MMP shall identify each field where the manure will be applied, the number of acres that will be available for the application of manure from the confinement feeding operation, and the basis under which the land is available.

b. A copy of each written agreement executed with the owner of the land where manure will be applied shall be maintained with the current MMP. The written agreement shall indicate the number of acres on which manure from the confinement feeding operation may be applied and the length of the agreement. A written agreement is not required if the land is owned or rented for crop production by the owner of the confinement feeding operation. Owners of dry bedded confinement feeding operations required to have an MMP may execute a written agreement with the landowner or the person renting the land for crop production where the dry bedded manure will be applied.

65.111(6) *Soil loss calculations for phosphorus index.* The MMP shall indicate for each field in the plan the crop rotation, tillage practices and supporting practices used to calculate sheet and rill erosion for the phosphorus index. A copy of an NRCS RUSLE2 erosion calculation record shall satisfy this requirement. The plan shall also identify the highly erodible cropland where manure will be applied.

65.111(7) *Current MMP.* The owner of a confinement feeding operation who is required to submit an MMP shall maintain a current MMP at the site of the confinement feeding operation or at a residence or office of the owner or operator of the operation within 30 miles of the site. The MMP may be an electronic or hard copy. The MMP should include completed manure sales forms if the manure is sold. If manure management practices change, a person required to submit an MMP shall make appropriate changes consistent with this chapter. If values other than the standard table values are used for MMP calculations, the source of the values used shall be identified.

65.111(8) *Recordkeeping.* Records shall be maintained by the owner of a confinement feeding operation who is required to submit an MMP. Records shall be maintained for five years following the year of application or for the length of the crop rotation, whichever is greater. Records shall be maintained at the site of the confinement feeding operation or at a residence or office of the owner or operator of the facility within 30 miles of the site. Electronic records are acceptable in lieu of paper records at the facility or the office. Records to demonstrate compliance with the MMP shall include the following:

- a. Factors used to calculate the manure application rate:
 - (1) Optimum yield for the planned crop.
 - (2) Types of nitrogen credits and amounts.
 - (3) Remaining crop nitrogen needed.
 - (4) Nitrogen and phosphorus concentration and first-year nitrogen availability of the manure. If an actual sample is used, documentation shall be provided.
- b. If phosphorus-based application rates are used, the following shall be included:
 - (1) Crop rotation.
 - (2) Phosphorus removed by crop harvest of that crop rotation.
- c. Maximum allowable manure application rate.
- d. Actual manure application information:
 - (1) Methods of application when manure from the confinement feeding operation was applied.
 - (2) Date(s) when the manure from the confinement feeding operation was applied.
 - (3) Location of the field where the manure from the confinement feeding operation was applied, including the number of acres.
 - (4) The manure application rate.
- e. The date(s) and application rate(s) of commercial nitrogen and phosphorus on fields that received manure. However, if the date and application rate information is for fields that are not owned for crop production or that are not rented or leased for crop production by the person required to keep records pursuant to this subrule, an enforcement action for noncompliance with an MMP or the requirements of this subrule shall not be pursued against the person required to keep records pursuant to this subrule or against any other person who relied on the date and application rate in records required to be kept pursuant to this subrule, unless that person knew or should have known that nitrogen or phosphorus would be applied in excess of maximum levels set forth in paragraph 65.111(1)“a.” If manure is applied to fields not owned, rented or leased for crop production by the person required to keep records pursuant to this subrule, that person shall obtain from the person who owns, rents or leases those fields a statement specifying the planned commercial nitrogen and phosphorus fertilizer rates to be applied to each field receiving the manure.

- f. A copy of the current soil test lab results for each field in the MMP.
- g. For sales of manure under paragraph 65.111(15)“b,” recordkeeping requirements of subparagraph 65.111(15)“b”(7) shall be followed.

- h. The name and certification number of the certified manure applicator.

65.111(9) *Record inspection.* The department may inspect a confinement feeding operation at any time during normal working hours and may inspect the MMP and any records required to be maintained. As required in Iowa Code section 459.312(12), Iowa Code chapter 22 shall not apply to the records which shall be kept confidential by the department and its agents and employees. The contents of the records are not subject to disclosure except as follows:

- a. Upon waiver by the owner of the confinement feeding operation.
- b. In an action or administrative proceeding commenced under this chapter. Any hearing related to the action or proceeding shall be closed.
- c. When required by subpoena or court order.

65.111(10) *Enforcement action.* An owner required to provide the department an MMP pursuant to this rule who fails to provide the department an MMP or who is found in violation of the terms and conditions of the MMP shall not be subject to an enforcement action other than assessment of a civil penalty pursuant to Iowa Code section 455B.191.

65.111(11) *Soil sampling requirements for fields where the phosphorus index must be used.* Soil samples shall be obtained from each field in the MMP, and the soil samples shall be four years old or less. Each soil sample shall be analyzed for phosphorus and pH. The soil sampling protocol shall meet all of the following requirements:

- a. Acceptable soil sampling strategies include but are not limited to grid sampling, management zone sampling, and soil type sampling. Procedural details can be taken from Iowa State University Extension and Outreach publication CROP 31-8, “Take a Good Soil Sample to Help Make Good Fertilization Decisions,” NCR-13 Report 348, “Soil Sampling for Variable-Rate Fertilizer and Lime Application,” effective January 1, 2001, or other credible soil sampling publications.
- b. Each soil sample must be a composite of at least ten soil cores from the sampling area, with each core containing soil from the top six inches of the soil profile.
- c. Each soil sample shall represent no more than ten acres. For fields less than or equal to 15 acres, only one soil sample is necessary.
- d. Soil analysis must be performed by a lab enrolled in the Iowa department of agriculture and land stewardship (IDALS) soil testing certification program.
- e. The soil phosphorus test method must be an appropriate method for use with the phosphorus index. If soil pH is greater than or equal to 7.4, soil phosphorus data from the Bray-1 extraction method is not acceptable for use with the phosphorus index.
- f. If manure is applied as phosphorus-based rates within soil sampling periods, each soil sample may represent up to 20 acres for the next required soil sampling.

65.111(12) *Use of the phosphorus index.* Manure application rates shall be determined in conjunction with the use of the Iowa Phosphorus Index as specified by NRCS Iowa Technical Note No. 25 Iowa Phosphorus Index.

- a. When sheet and rill erosion is calculated for the Iowa Phosphorus Index, the soil map unit used for the calculation shall be the predominant soil map unit of the steepest slope class that comprises at least 10 percent of the total field area. For fields less than 25 acres in size, the predominant soil map unit of the steepest slope class that comprises at least 20 percent of the total field area shall be used. In all MMPs submitted to the department for approval, the soil map unit used for the sheet and rill erosion calculation will be consistent with NRCS Iowa Agronomy Technical Note No. 29 Dominant Critical Area. For the calculations of ephemeral gullies, the provisions of NRCS Iowa Technical Note No. 25 Iowa Phosphorus Index with in-field measurement or estimates from review of at least four aerial photographs shall be used. If aerial photographs are used for the evaluation, aerial photography from the spring prior to crop canopy or fall after harvest must be included in the evaluation when available.

- b. When sheet and rill erosion is calculated for the phosphorus index, the soil map unit used for the calculation shall be the predominant highly erodible soil map unit when planning for a highly erodible field

and the predominant non-highly erodible soil map unit when planning for a non-highly erodible field. For the calculations of ephemeral gullies, the provisions of NRCS Iowa Technical Note No. 25 Iowa Phosphorus Index shall be used with: (1) supporting documents and spreadsheets or (2) aerial photographs from at least four separate years, with at least one of the photographs being from the most vulnerable time of the year.

c. The average (arithmetic mean) soil phosphorus concentration of a field shall be used in the phosphorus index.

d. Soil phosphorus concentration data is considered valid for use in the phosphorus index if the data is four years old or less and meets the requirements of subrule 65.111(11).

e. For an original MMP, previous soil sampling data that does not meet the requirements of subrule 65.111(11) may be used in the phosphorus index if the data is four years old or less. In the case of fields for which soil sampling data is used that does not meet the requirements of subrule 65.111(11), the fields must be soil-sampled according to the requirements of subrule 65.111(11) no more than one year after the original MMP is approved and an updated original MMP shall be submitted with the results of the new samples at the time of the next MMP update.

f. The following are the manure application rate requirements for fields that are assigned the phosphorus index site vulnerability ratings below as determined by the NRCS Iowa Technical Note No. 25 Iowa Phosphorus Index to the NRCS 590 standard rounded to the nearest one-hundredth:

(1) Very Low or Low (0-2). Manure shall not be applied in excess of a nitrogen-based rate in accordance with subrule 65.111(13).

(2) Medium (>2-5). Manure shall not be applied (1) in excess of two times the phosphorus removed with crop harvest over the period of the crop rotation or (2) to exceed the nitrogen-based rate of the planned crop receiving the particular manure application.

(3) High or Very High (>5). Manure shall not be applied on a field with a rating greater than 5.

g. Additional commercial fertilizer may be applied as follows on fields receiving manure:

(1) Phosphorus fertilizer may be applied in addition to phosphorus provided by the manure up to amounts recommended by soil tests and Iowa State University Extension and Outreach publication PM 1688, "A General Guide for Crop Nutrient and Limestone Recommendations in Iowa."

(2) Nitrogen fertilizer may be applied in addition to nitrogen provided by the manure to meet the remaining nitrogen need of the crop as calculated in the current MMP. Additional nitrogen fertilizer may be applied up to the amounts indicated by soil test nitrogen results or crop nitrogen test results as necessary to obtain the optimum crop yield.

h. Updating the phosphorus index.

(1) When any inputs to the phosphorus index change, an operation shall recalculate the phosphorus index and adjust the application rates if necessary.

(2) If additional land becomes available for manure application, the phosphorus index shall be calculated to determine the manure application rate before manure is applied.

(3) An operation must submit a complete MMP using a new phosphorus index, including soil sampling as required in subrule 65.111(11), for each field in the MMP a minimum of once every four years.

65.111(13) Requirements for application of a nitrogen-based manure rate to a field.

a. Nitrogen-based application rates shall be based on the total nitrogen content of the manure unless the calculations are submitted to show that nitrogen crop usage rates based on plant-available nitrogen have not been exceeded for the crop schedule submitted.

b. The correction factor for nitrogen losses shall be determined for the method of application by the following or from other credible sources for nitrogen volatilization correction factors.

Knifed in or soil injection of liquids	0.98
Surface-apply liquid or dry with incorporation within 24 hours	0.95
Surface-apply liquid or dry with incorporation after 24 hours	0.80
Surface-apply liquids with no incorporation	0.75
Surface-apply dry with no incorporation	0.70
Irrigated liquids with no incorporation	0.60

c. Nitrogen-based applications rates shall be based on the optimum crop yields as determined in subrule 65.111(4) and crop nitrogen usage rate factor values in Table 4 located at iowadnr.gov/afo/rules or other credible sources. The calculations of manure applied from the facility must account for fertilizer from all other manure and nonmanure sources. Liquid manure applied to land that is currently planted to soybeans or to land where the current crop has been harvested and that will be planted to soybeans the next crop season shall not exceed 100 pounds of available nitrogen per acre. Further, the 100-pounds-per-acre application limitation in the previous sentence does not apply on or after June 1 of each year; in that event, subrule 65.111(4) and Table 4 would apply as provided in the first sentence of this paragraph.

d. A nitrogen-based manure rate shall account for legume production in the year prior to growing corn or other grass crops and shall account for any planned commercial fertilizer application.

65.111(14) *Requirements for application of a phosphorus-based manure rate to a field.*

a. Phosphorus removal by harvest for each crop in the crop schedule shall be determined using the optimum crop yield as determined in subrule 65.111(4) and phosphorus removal rates of the harvested crop from Table 4a located at iowadnr.gov/afo/rules or other credible sources. Phosphorus crop removal shall be determined by multiplying optimum crop yield by the phosphorus removal rate of the harvested crop.

b. Phosphorus removal by the crop schedule shall be determined by summing the phosphorus crop removal values determined in paragraph 65.111(14) "a" for each crop in the crop schedule.

c. The phosphorus applied over the duration of the crop schedule shall be less than or equal to the phosphorus removed with harvest during that crop schedule as calculated in paragraph 65.111(14) "b" unless additional phosphorus is recommended by soil tests and Iowa State University Extension and Outreach publication PM 1688, "A General Guide for Crop Nutrient and Limestone Recommendations in Iowa."

d. Additional requirements for phosphorus-based rates.

(1) No single manure application shall exceed the nitrogen-based rate of the planned crop receiving the particular manure application.

(2) No single manure application shall exceed the rate that applies to the expected amount of phosphorus removed with harvest by the next four anticipated crops in the crop schedule.

e. If the actual crop schedule differs from the planned crop schedule, then any surplus or deficit of phosphorus shall be accounted for in the subsequent manure application.

f. Phosphorus in manure should be considered 100 percent available unless soil phosphorus concentrations are below optimum levels for crop production. If soil phosphorus concentrations are below optimum levels for crop production phosphorus availability, values suggested in Iowa State University Extension and Outreach publication PMR 1003, "Using Manure Nutrients for Crop Production" or other credible sources shall be used.

65.111(15) *MMPs for sales of manure.* Selling manure means the transfer of ownership of the manure for monetary or other valuable consideration. Selling manure does not include a transaction where the consideration is the value of the manure or where an easement, lease or other agreement granting the right to use the land only for manure application is executed.

a. Confinement feeding operations that will sell dry manure as a commercial fertilizer or soil conditioner regulated by IDALS under Iowa Code chapter 200 or bulk dry manure animal nutrient product regulated by IDALS under Iowa Code chapter 200A shall submit a copy of their site-specific IDALS license or documentation that manure will be sold pursuant to Iowa Code chapter 200 or 200A, along with the department-approved MMP form for sales of dry manure. Operations completely covered by this paragraph are not required to meet other MMP requirements in this rule.

b. A confinement feeding operation not fully covered by paragraph 65.111(15) "a" that has an established practice of selling manure, or a confinement feeding operation that contains an animal species for which selling manure is a common practice, shall submit an MMP that includes the following:

(1) An estimate of the number of acres required for manure application calculated by one of the following methods:

1. Dividing the total phosphorus (as P_2O_5) available to be applied from the confinement feeding operation by the corn crop removal of phosphorus. The corn crop removal of phosphorus may be estimated

by using the phosphorus removal rate in Table 4a located at iowadnr.gov/afo/rules and an estimate of the optimum crop yield for the property in the vicinity of the operation.

2. Totaling the quantity of manure that can be applied to each available field based on application rates determined in conjunction with the phosphorus index in accordance with subrule 65.111(12), and ensuring that the total quantity that can be applied is equal to or exceeds the manure annually generated at the operation.

(2) The total nitrogen available to be applied from the confinement feeding operation.

(3) The total phosphorus (as P₂O₅) available to be applied from the confinement feeding operation if the phosphorus index is required in accordance with paragraph 65.111(1)“c.”

(4) An estimate of the annual animal production and manure volume or weight produced.

(5) A manure sales form. If manure will be sold, the manure sales form shall include the following information:

1. A place for the name and address of the buyer of the manure.

2. A place for the quantity of manure purchased.

3. The planned crop schedule and optimum crop yields.

4. A place for the manure application methods and the timing of manure application.

5. A place for the location of the field, including the number of acres where the manure will be applied.

6. A place for the manure application rate.

7. A place for a phosphorus index of each field receiving manure, as defined in paragraph 65.111(12)“a,” including the factors used in the calculation. A copy of the NRCS phosphorus index detailed report shall satisfy the requirement to include the factors used in the calculation.

(6) Statements of intent if the manure will be sold. The number of acres indicated in the statements of intent shall be sufficient according to the MMP to apply the manure from the confinement feeding operation. The permit holder for an existing confinement feeding operation with a construction permit may submit past records of manure sales instead of statements of intent. The statements of intent shall include the following information:

1. The name and address of the person signing the statement.

2. A statement indicating the intent of the person to purchase the confinement feeding operation’s manure.

3. The location of the farm where the manure can be applied, including the total number of acres available for manure application.

4. The signature of the person who may purchase the confinement feeding operation’s manure.

(7) The owner shall maintain in the owner’s records a current MMP and copies of all of the manure sales forms, the sales forms must be completed and signed by each buyer of the manure and the applicant, and the copies must be maintained in the owner’s records for three years after each sale. The owner shall maintain in the owner’s records copies of all of the manure sales forms for five years after each sale. An owner of a confinement feeding operation shall not be required to maintain current statements of intent as part of the MMP.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.112(455B,459,459B) Manure applicators certification.

65.112(1) Certification. A commercial manure service or a commercial manure service representative shall not transport, handle, store or apply dry or liquid manure to land unless the person is certified. A confinement site manure applicator shall not apply dry or liquid manure to land unless the person is certified. A person is not required to be certified as a confinement site manure applicator if the person applies manure that originates from a manure storage structure that is part of a SAFO. Certification of a commercial manure service representative under this rule will also satisfy the commercial license requirement under 567—Chapter 68 only as it applies to manure removal and application. Each person who operates a manure applying vehicle or equipment must be certified individually except as allowed in subrule 65.112(7).

65.112(2) Fees.

a. *Commercial manure service.* The fee for a new or renewed certification of a service is \$200. The commercial manure service shall designate one manager for the service and shall provide the department with documentation of the designation.

b. *Commercial manure service representative.* The fee for a new or renewed representative certification is \$75. The manager of a commercial manure service must be certified as a commercial manure service representative but is exempt from paying the \$75 certification fee.

c. *Confinement site manure applicator.* The fee for a new or renewed certification is \$100. However, the fee is not required if all of the following apply:

(1) The person indicates that the person is a family member as defined in this chapter by submitting a completed form provided by the department;

(2) The person is certified as a confinement site manure applicator within one year of the date another family member was certified or whose certification as a confinement site manure applicator was renewed;

(3) The other family member certified as a confinement site manure applicator has paid the certification fee.

d. *Educational fee.* Commercial manure service representatives, managers and confinement site manure applicators shall pay an educational fee to be determined annually by the department.

e. *Late fee.* Renewal applications received after March 1 require that an additional \$12.50 fee be paid before the certification is renewed. An application is considered to be received on the date it is postmarked.

f. *Duplicate certificate.* The fee for a duplicate certificate is \$15.

65.112(3) Certification requirements. To be certified by the department as a commercial manure service, a commercial manure service representative or a confinement site manure applicator, a person must do all of the following:

a. Apply for certification on a form provided by the department.

b. Pay the required fees set forth in subrule 65.112(2).

c. Pass the examination given by the department or, in lieu of the examination, attend continuing instruction courses as described in subrule 65.112(6).

65.112(4) Certification term, renewal and grace period.

a. *Certification term.* Certification for a commercial manure service and commercial manure service representative shall be for a period of one year and shall expire on March 1 of each year. Certification for a confinement site manure applicator shall be for a period of three years and shall expire on December 31 of the third year.

b. *Renewal.* Application for renewal of a commercial manure service certification or a commercial manure service representative certification must be received by the department no later than March 1 of the year the certification expires. Application for renewal of a confinement site manure applicator certification must be received by the department or postmarked no later than March 1 after the year the certification expires. Application shall be on forms provided by the department and shall include:

(1) Certification renewal and educational fees.

(2) A passing grade on the certification examination or proof of attending the required hours of continuing instructional courses.

c. *Substitution of employees.* If a commercial manure service pays the certification fee for a representative, the service may substitute representatives. The substituted representative must be certified pursuant to subrule 65.112(3). The service shall provide documentation to the department, on forms provided by the department, that the substitution is valid.

d. *Grace period.* Except as provided in this paragraph, a commercial manure service, a commercial manure service representative or a confinement site manure applicator may not continue to apply manure after expiration of a certificate. A confinement site manure applicator may continue to apply manure until March 1 following the year the certification expires, provided a complete renewal application, as provided in paragraph 65.112(4)“b,” is postmarked or received by the department prior to March 1. Commercial manure services and representatives must submit an application for certification renewal by March 1 of each year.

65.112(5) Examinations.

a. A person wishing to take the examination required to become a certified commercial manure service representative or certified confinement site manure applicator may request an appointment. The applicant must have a photo identification card at the time of taking the examination.

b. If a person fails the examination, the person may retake the examination but not on the same business day.

c. Upon written request by an applicant, the director will consider the presentation of an oral examination on an individual basis when the applicant has failed the written examination at least twice and the applicant has shown difficulty in reading or understanding written questions but may be able to respond to oral questioning.

65.112(6) *Continuing instruction courses in lieu of examination.*

a. To establish or maintain certification, between March 1 and March 1 of the next year, a commercial manure service representative must each year either pass an examination or attend three hours of continuing instructional courses.

b. To establish or maintain certification, a confinement site manure applicator must either pass an examination every three years or attend two hours of continuing instructional courses each year. A confinement site manure applicator who chooses to attend instructional courses but fails to attend instructional courses each year must pass an examination as provided in subrule 65.112(5) to maintain certification.

65.112(7) *Exemption from certification.*

a. Certification as a commercial manure service representative is not required of a person who is any of the following:

- (1) Actively engaged in farming and who trades work with another such person.
- (2) Employed by a person actively engaged in farming not solely as a manure applicator but who applies manure as an incidental part of the person's general duties.
- (3) Engaged in applying manure as an incidental part of a custom farming operation.
- (4) Engaged in applying manure as an incidental part of the person's duties.
- (5) Applying, transporting, handling or storing manure within a period of 30 days from the date of initial employment as a commercial manure service representative if the person applying the manure is acting under direct instructions and control of a certified commercial manure service representative who is physically present at the manure application site by being in sight or immediate communication distance of the supervised person where the certified commercial service representative can communicate with the supervised person at all times. If the prospective employee was previously certified for a commercial manure service, the 30-day exemption does not apply.

(6) Employed by a research college to apply manure from AFOs that are part of the research activities or experiments of the research college.

b. Certification as a confinement site manure applicator is not required of a person who is either of the following:

(1) A part-time employee or family member of a confinement site manure applicator and is acting under direct instruction and control of a certified confinement site manure applicator who is physically present at the manure application site by being in sight or hearing distance of the supervised person where the certified confinement site manure applicator can physically observe and communicate with the supervised person at all times.

(2) Employed by a research college to apply manure from an AFO that is part of the research activities or experiments of the research college.

65.112(8) *Obligations.* Certified commercial manure services have the following obligations:

a. Maintain the following records of manure disposal operations for a period of three years:

- (1) A copy of instructions for manure application provided by the owner of the AFO.
- (2) Dates that manure was applied or sold.
- (3) The manure application rate.
- (4) Location of fields where manure was applied.

b. Comply with the provisions of the MMP prepared for the confinement feeding operation and the requirements of rules 567—65.100(455B,459,459B) and 567—65.101(455B,459,459B). If an MMP does

not exist, the requirements of rules 567—65.100(455B,459,459B) and 567—65.101(455B,459,459B) must still be met.

c. Any tanks or equipment used for hauling manure shall not be used for hauling hazardous or toxic wastes, as defined in 567—Chapter 131, or other wastes detrimental to land application and shall not be used in a manner that would contaminate a potable water supply or endanger the food chain or public health.

d. Pumps and associated piping on manure handling equipment shall be installed with watertight connections to prevent leakage.

e. Any vehicle used by a certified commercial manure service or commercial manure service representative to transport manure on a public road shall display the certification number of the commercial manure service with three-inch or larger letters and numbers on the side of the tank or vehicle. The name and address of the certified commercial manure service representative designated as the manager shall also be prominently displayed on the side of the tank or vehicle.

f. Direct connection shall not be made between a potable water source and the tank or equipment on the vehicle.

65.112(9) *Discipline of certified applicators.*

a. Disciplinary action may be taken against a certified commercial manure service, a commercial manure service representative or a confinement site manure applicator on any of the following grounds:

(1) Violation of state law or rules applicable to a certified commercial manure service, a commercial manure service representative, or a confinement site manure applicator or the handling or application of manure.

(2) Failure to maintain required records of manure application or other reports required by this rule.

(3) Knowingly making any false statement, representation, or certification on any application, record, report or document required to be maintained or submitted under any applicable permit or rule of the department.

b. Disciplinary sanctions allowable are:

(1) Revocation of a certificate.

(2) Probation under specified conditions relevant to the specific grounds for disciplinary action. Additional training or reexamination may be required as a condition of probation.

c. The procedure for discipline is as follows:

(1) The director shall initiate disciplinary action.

(2) Written notice shall be given to an applicator against whom disciplinary action is being considered. The notice shall state the informal and formal procedures available for determining the matter. The applicator shall be given 20 days to present any relevant facts and indicate the person's position in the matter and to indicate whether informal resolution of the matter may be reached.

(3) An applicator who receives notice shall communicate verbally or in writing or in person with the director, and efforts shall be made to clarify the respective positions of the applicator and director.

(4) Failure to communicate facts and position relevant to the matter by the required date may be considered when determining appropriate disciplinary action.

(5) If agreement as to appropriate disciplinary sanction, if any, can be reached with the applicator and the director, a written stipulation and settlement between the department and the applicator shall be entered. The stipulation and settlement shall recite the basic facts and violations alleged, any facts brought forth by the applicator, and the reasons for the particular sanctions imposed.

(6) If an agreement as to appropriate disciplinary action, if any, cannot be reached, the director may initiate formal hearing procedures. Notice and formal hearing shall be in accordance with 561—Chapter 7 related to contested and certain other cases pertaining to license discipline.

65.112(10) *Revocation of certificates.*

a. Upon revocation of a certificate, application for commercial manure service representative or confinement site applicator certification may be allowed after two years from the date of revocation. Any such applicant must successfully complete an examination and be certified in the same manner as a new applicant.

b. Upon revocation of a certificate, application for a commercial manure service certification may be allowed after three years from the date of revocation. Any such applicant must successfully complete an examination and be certified in the same manner as a new applicant.

65.112(11) *Record inspection.* The department may inspect, with reasonable notice, the records maintained by a commercial manure service. If the records are for an operation required to maintain records to demonstrate compliance with an MMP, the confidentiality provisions of subrule 65.111(9) and Iowa Code section 459.312 shall extend to the records maintained by the commercial manure service.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.113(455B,459,459B) Livestock remediation fund. The livestock remediation fund created in Iowa Code section 459.501 will be administered by the department. Moneys in the fund shall be used for the exclusive purpose of administration of the fund and the cleanup of eligible facilities at confinement feeding operation sites.

65.113(1) *Eligible facility site.* The site of a confinement feeding operation that contains one or more AFO structures is an eligible site for reimbursement of cleanup costs if one of the following conditions exists:

a. A county has acquired title to real estate containing the confinement feeding operation following nonpayment of taxes and the site includes a manure storage structure that contains stored manure or site contamination originating from the confinement feeding operation.

b. A county or the department determines that the confinement feeding operation has caused a clear, present and impending danger to the public health or environment.

65.113(2) *Site cleanup.* Site cleanup includes the removal and land application or disposal of manure from an eligible facility site according to manure management procedures approved by the department. Cleanup may include remediation of documented contamination that originates from the confinement feeding operation. Cleanup may also include demolishing and disposing of AFO structures if their existence or further use would contribute to further environmental contamination and their removal is included in a cleanup plan approved by the department. Buildings and equipment must be demolished or disposed of according to rules adopted by the department in 567—Chapter 101 that apply to the disposal of farm buildings or equipment by an individual or business organization.

65.113(3) *Claims against the fund.* Claims for cleanup costs may be made by a county that has acquired real estate containing an eligible facility site pursuant to a tax deed. A county claim shall be signed by the chairperson of the county board of supervisors. Cleanup may be initiated by the department or may be authorized by the department based on a claim by a county.

a. *Advance notice of claim.* Prior to or after acquiring a tax deed to an eligible facility site, a county shall notify the department in writing of the existence of the facility and the title acquisition. The county shall request in this notice that the department evaluate the site to determine whether the department will order or initiate cleanup pursuant to its authority under Iowa Code chapter 455B.

b. *Emergency cleanup condition.* If a county determines that there exists at a confinement feeding operation site a clear, present and impending danger to the public health or environment, the county shall notify the department of the condition. The danger should be documented as to its presence and the necessity to avoid delay due to its increasing threat. If no cleanup action is initiated by the department within 24 hours after being notified of an emergency condition requiring cleanup, the county may provide cleanup and submit a claim against the fund.

65.113(4) *Contents of a claim against the fund.*

a. A county claim against the fund for an eligible site acquired by a county following nonpayment of taxes shall be submitted to the department for approval prior to the cleanup action and shall contain the following information:

(1) A copy of the advance notice of claim as described in paragraph 65.113(3)“a.”

(2) A copy of a bid by a qualified person, other than a governmental entity, to perform a site cleanup. The bid shall include a summary of the qualifications of the bidder including but not limited to prior experience in removal of hazardous substances or manure, experience in construction of confinement feeding operation facilities or manure storage structures, equipment available for conducting the cleanup, or any other qualifications bearing on the ability of the bidder to remove manure from a site. The bid must

reference complying with a cleanup plan. The bid shall include a certification that the bidder has liability insurance in an amount not less than \$1 million.

(3) A copy of the tax deed to the real estate containing the eligible facility site.

(4) Name and address, if known, of the former owner(s) of the site. The claim shall also include a description of any efforts to contact the former owner regarding the removal of manure and any other necessary cleanup at the site.

(5) A response to the request in the advance notice described in paragraph 65.113(3)“a” that the department will not initiate cleanup action at the site, or that 60 days have passed from the advance notice and request.

(6) A proposed cleanup plan describing all necessary activity including manure to be removed, application rates and sites, any planned remediation of site contamination, and any structure demolition and justification.

b. A county claim against the fund for an emergency cleanup condition may be submitted following the cleanup and shall contain the following information:

(1) A copy of a bid as described in subparagraph 65.113(4)“a”(2).

(2) Name and address of the owner(s), or former owner(s), of the site or any other person who may be liable for causing the condition.

(3) Information on the response from the department to the notice given as described in paragraph 65.113(3)“b,” or, if none was received, documentation of the time notice was given to the department.

(4) A cleanup plan or description of the cleanup activities performed.

65.113(5) *Department processing of claims against the fund.*

a. Processing of claims. The department will process claims in the order they are received.

b. The cleanup plan will be reviewed for acceptability to accomplish necessary actions according to subrule 65.113(2).

c. Review of bid. Upon receipt of a claim, the department will review the bid accompanying the claim. The department may consult with any person in reviewing the bid. Consideration will be given to the experience of the bidder, the bid amount, and the work required to perform the cleanup plan. If the department is satisfied that the bidder is qualified to perform the cleanup and costs are reasonable, the department will provide written approval to the county within 60 days from the date of receipt of the claim.

d. Obtaining a lower bid. If the department determines that it should seek a lower bid to perform the cleanup, it may obtain the names of qualified persons who may be eligible to perform the cleanup. One or more of those persons will be contacted and invited to view the site and submit a bid for the cleanup. If a lower bid is not received, the original bid may be accepted. If a bid is lower than the original bid submitted by the county, the department will notify the county that it should proceed to contract with that bidder to perform the cleanup.

65.113(6) *Certificate of completion.* Upon completion of the cleanup, the county shall submit a certificate of completion to the department. The certificate of completion shall indicate that the manure has been properly land-applied according to the cleanup plan and that any site contamination identified in the approved cleanup plan has been remediated and any approved structure demolition has been performed.

65.113(7) *Payment of claims.* Upon receipt of the certificate of completion, the department shall promptly authorize payment of the claim as previously approved. Payments will be made for claims in the order of receipt of certificates of completion.

65.113(8) *Subrogation.* The fund is subrogated to all county rights regarding any claim submitted or paid as provided in Iowa Code section 459.505.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.114(455B,459,459B) Validity of rules. If any part of these rules is declared unconstitutional or invalid for any reason, the remainder of said rules shall not be affected thereby and shall remain in full force and effect, and to that end, these rules are declared to be severable.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.115 to 65.199 Reserved.

DIVISION III
OPEN FEEDLOT OPERATIONS

567—65.200(455B,459A) Minimum open feedlot effluent control requirements. An open feedlot operation shall provide for the management of manure, process wastewater, settled open feedlot effluent, settleable solids, scraped solids, and open feedlot effluent by using an open feedlot control method as provided in subrules 65.200(1) through 65.200(8). A release shall be reported to the department as provided in subrule 65.2(1).

65.200(1) All settleable solids from open feedlot effluent shall be removed prior to discharge into a water of the state.

a. The settleable solids shall be removed by use of a solids settling facility. The construction of a solids settling facility is not required where existing site conditions provide for removal of settleable solids prior to discharge into a water of the state.

b. The removal of settleable solids shall be deemed to have occurred when the velocity of flow of the open feedlot effluent has been reduced to less than one-half foot per second for a minimum of five minutes. A solids settling facility shall have sufficient capacity to store settleable solids between periods of land application and to provide required flow-velocity reduction for open feedlot effluent flow volumes resulting from a precipitation event of less intensity than a ten-year, one-hour frequency event. A solids settling facility that receives open feedlot effluent shall provide a minimum of one square foot of surface area for each eight cubic feet of open feedlot effluent per hour resulting from a ten-year, one-hour frequency precipitation event.

65.200(2) This subrule shall apply to an open feedlot operation which has obtained an NPDES permit pursuant to rule 567—65.3(455B,459,459A,459B) or 567—65.201(455B,459A).

a. An open feedlot operation may discharge manure, process wastewater, settled open feedlot effluent, settleable solids, or open feedlot effluent into any waters of the United States due to a precipitation event, if the open feedlot operation is designed, constructed, operated, and maintained to comply with the requirements of subrule 62.4(12) and 40 CFR Part 412.

b. If the open feedlot operation is designed, constructed, and operated in accordance with the requirements of subrule 2.4(12) and in accordance with any of the manure control alternatives listed in Appendix A located at iowadnr.gov/afo/rules or the AT system requirements in rule 567—65.207(455B,459A), the operation shall be considered to be in compliance with this rule, unless a discharge from the operation causes a violation of state water quality standards. If water quality standards violations occur, the department may impose additional open feedlot effluent control requirements upon the operation, as specified in subrule 65.200(3).

65.200(3) An open feedlot operation that has an animal unit capacity of 1,000 animal units or more, or an open feedlot operation that is a large CAFO, a medium CAFO, or a designated CAFO, shall not discharge manure, process wastewater, settled open feedlot effluent, settleable solids or open feedlot effluent from an open feedlot operation structure or production area into any waters of the United States, unless the discharge is pursuant to an NPDES permit. The control of manure, process wastewater, settled open feedlot effluent, settleable solids or open feedlot effluent originating from the open feedlot operation may be accomplished by the use of a solids settling facility, settled open feedlot effluent basin, AT system, or any other open feedlot effluent control structure or practice approved by the department. The department may require the diversion of surface drainage prior to contact with an open feedlot operation structure. Settleable solids shall be settled from open feedlot effluent before the effluent enters a settled open feedlot effluent basin or AT system.

65.200(4) Alternative control practices. If, because of topography or other factors related to the site of an open feedlot operation, it is economically or physically impractical to comply with open feedlot effluent control requirements using an open feedlot control method in subrule 65.200(4), the department shall allow an open feedlot operation covered by the NPDES permit application requirements of rule 567—65.3(455B,459,459A,459B) or 567—65.201(455B,459A) to use other open feedlot effluent control practices, provided the open feedlot operation satisfactorily demonstrates by appropriate methods that those

practices will provide an equivalent level of open feedlot effluent control. Demonstration of equivalent performance must include the submission of computer modeling results that compares the predicted performance of the proposed system with that of a conventional runoff containment system over the same period. The specific requirements that must be met for an open feedlot operation to qualify for use of an AT system and the information that must be submitted to the department are outlined in rule 567—65.207(455B,459A). Design requirements have been established for a stand-alone VTA. If other AT systems are developed that meet the equivalent performance standard established under EPA's CAFO rules, the department will consider their acceptance on a case-by-case basis.

65.200(5) No direct discharge of open feedlot effluent shall be allowed from an open feedlot operation into a publicly owned lake, a known sinkhole, or an agricultural drainage well.

65.200(6) Land application.

a. General requirements. Open feedlot effluent shall be land-applied in a manner that will not cause pollution of surface water or groundwater. Application in accordance with the provisions of state law and the rules in this chapter shall be deemed as compliance with this requirement.

b. Designated areas. A person shall not apply manure on land within 200 feet from a designated area or, in the case of a high-quality water resource, within 800 feet, unless one of the following applies:

(1) The manure is land-applied by injection or incorporation on the same date as the manure was land-applied.

(2) An area of permanent vegetation cover, including filter strips and riparian forest buffers, exists for 50 feet surrounding the designated area other than an unplugged agricultural drainage well or surface intake to an unplugged agricultural drainage well, and the area of permanent vegetation cover is not subject to manure application.

c. CAFOs.

(1) Land application discharges from a CAFO are subject to NPDES permit requirements. The discharge of manure, process wastewater, settled open feedlot effluent, settleable solids and open feedlot effluent to waters of the United States from a CAFO as a result of the application of that manure, process wastewater, settled open feedlot effluent, settleable solids and open feedlot effluent by the CAFO to land areas under its control is a discharge from that CAFO subject to NPDES permit requirements, except where the discharge is an agricultural storm water discharge as provided in 33 U.S.C. 1362(14). For the purpose of this paragraph, where the manure, process wastewater, settled open feedlot effluent, settleable solids or open feedlot effluent has been applied in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, process wastewater, settled open feedlot effluent, settleable solids and open feedlot effluent as specified in subrule 65.209(8), a precipitation-related discharge of manure, process wastewater, settled open feedlot effluent, settleable solids and open feedlot effluent from land areas under the control of a CAFO is an agricultural storm water discharge.

(2) Setback requirements for open feedlot operations with NPDES permits. For open feedlot operations with NPDES permits, the following is adopted by reference: 40 CFR 412.4(a), (b) and (c)(5).

65.200(7) The owner of an open feedlot operation who discontinues the use of the operation shall remove and land-apply in accordance with state law all manure, process wastewater and open feedlot effluent from the open feedlot operation structures as soon as practical but not later than six months following the date the open feedlot operation is discontinued. The owner of a CAFO shall maintain compliance with all requirements in the CAFO's NPDES permit until all manure, process wastewater and open feedlot effluent has been removed and land applied pursuant to the CAFO's NMP, and the NPDES permit has been terminated in accordance with subrule 65.202(9).

65.200(8) Stockpiling of scraped solids and settleable solids. Stockpiles of solids scraped from open feedlot operations and stockpiles of settleable solids shall comply with the following requirements:

a. Stockpiles must be land-applied in accordance with subrule 65.200(6) as soon as possible but not later than six months after they are established.

b. Stockpiles shall not be located within 400 feet from a designated area or, in the case of a high-quality water resource, within 800 feet.

c. Stockpiles shall not be located in grassed waterways or areas where water ponds or has concentrated flow.

d. Stockpiles shall not be located within 200 feet of a terrace tile inlet or surface tile inlet or known sinkhole unless the stockpile is located so that any runoff from the stockpile will not reach the inlet or sinkhole.

e. Stockpiles shall not be located on land having a slope of more than 3 percent unless methods, structures or practices are implemented to contain the stockpiled solids, including but not limited to hay bales, silt fences, temporary earthen berms, or other effective measures, and to prevent or diminish precipitation-induced runoff from the stockpiled solids.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.201(455B,459A) Departmental evaluation; CAFO designation; remedial actions.

65.201(1) The department may evaluate any AFO that is not defined as a large or medium CAFO, and designate it as a CAFO if, after an on-site inspection, it is determined to be a significant contributor of manure or process wastewater to waters of the United States. In making this determination, the department shall consider the following factors:

- a. The size of the operation and the amount of manure or process wastewater reaching waters of the United States;
- b. The location of the operation relative to waters of the United States;
- c. The means of conveyance of manure or process wastewater to waters of the United States;
- d. The slope, vegetation, rainfall, and other factors affecting the likelihood or frequency of discharge of manure or process wastewater into waters of the United States; and
- e. Other relevant factors.

65.201(2) No AFO with an animal capacity less than that specified for a medium CAFO shall be designated as a CAFO unless manure or process wastewater from the operation is discharged into a water of the United States:

- a. Through a manmade ditch, flushing system, or other similar manmade device; or
- b. That originates outside of and passes over, across or through the facility or otherwise comes into direct contact with animals confined in the operation.

65.201(3) The owner or operator of a designated CAFO shall apply for an NPDES permit no later than 90 days after receiving written notice of the designation.

65.201(4) If departmental evaluation determines that any of the conditions listed in paragraph 65.201(4) “a,” “b,” or “c” exist, the open feedlot operation shall institute necessary remedial actions within a time specified by the department to eliminate the conditions warranting the determination, if the operation receives a written notification from the department of the need to correct the conditions.

- a. Settled open feedlot effluent, settleable solids from the open feedlot operation, or open feedlot effluent is being discharged into a water of the state and the operation is not providing the applicable minimum level of manure control as specified in rule 567—65.200(455B,459A);
- b. Settled open feedlot effluent, settleable solids from the open feedlot operation, or open feedlot effluent is causing or may reasonably be expected to cause pollution of a water of the state; or
- c. Settled open feedlot effluent, settleable solids from the open feedlot operation, or open feedlot effluent is causing or may reasonably be expected to cause a violation of state water quality standards.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.202(455B,459A) NPDES permits.

65.202(1) *Existing AFOs not holding an NPDES permit.* AFOs in existence prior to April 14, 2003, that were defined as CAFOs under rules that were in effect prior to April 14, 2003, but that have not obtained a permit, should have applied for an NPDES permit by April 14, 2003. AFOs in existence on April 14, 2003, that were not defined as CAFOs under rules that were in effect prior to April 14, 2003, shall apply for an NPDES permit no later than July 31, 2007.

65.202(2) *Expansion or modification of existing AFOs.* A person intending to expand or modify an existing AFO that, upon completion of the expansion or modification, will be defined as a CAFO and if the operation discharges pollutants to waters of the United States shall apply for an NPDES permit at least 90 days prior to the scheduled expansion or modification. Operation of the expanded portion of the facility shall not begin until an NPDES permit has been issued.

65.202(3) *New AFOs.* A person intending to construct a new AFO after July 22, 1987, or resuming a discontinued operation after 24 months or more, upon resumption or completion, will be defined as a CAFO and if the operation discharges pollutants to waters of the United States shall apply for an NPDES permit at least 180 days prior to the date operation of the animal feeding facility is scheduled. Operation of the facility shall not begin until an NPDES permit has been issued.

65.202(4) *Permits required as a result of departmental designation.* An AFO that is required to apply for an NPDES permit as a result of departmental designation (in accordance with the provisions of rule 567—65.201(455B,459A)) shall apply for an NPDES permit within 90 days of receiving written notification of the need to obtain a permit. Once application has been made, the AFO is authorized to continue to operate without a permit until the application has either been approved or disapproved by the department, provided that the owner or operator has submitted all requested information and promptly taken all steps necessary to obtain coverage.

65.202(5) *Application forms and requirements.* An application for an NPDES permit shall be made on a form provided by the department. The application shall be complete and shall contain information required by the department. Applications shall include an NMP as required in rule 567—65.209(455B,459A). Applications involving AT systems shall include results of predictive computer modeling as required by subrule 65.207(6). The application shall be signed and certified by the person who is legally responsible for the AFO and its associated manure or process wastewater control system.

65.202(6) *Compliance schedule.* When necessary to comply with a standard that must be met at a future date, an NPDES permit shall include a schedule for modification of the permitted facility to meet the standard. The schedule shall not relieve the permittee of the duty to obtain a construction permit pursuant to rule 567—65.203(455B,459A).

65.202(7) *Permit conditions.* NPDES permits shall contain conditions required by 40 CFR 122.41, monitoring conditions required by 40 CFR 122.48, and conditions considered necessary by the department to ensure compliance with all applicable rules of the department; to ensure that the production area and land application areas are operated and maintained as required by Iowa law; to protect the public health and beneficial uses of waters of the United States; and to prevent water pollution from manure storage or application operations. Any more stringent conditions of Iowa Code chapter 459A, subrule 62.4(12), and this chapter that apply to AFOs shall govern. For CAFOs that maintain cattle, swine, or poultry, the following applicable conditions shall be included:

a. NMP. Open feedlot CAFOs shall comply with the requirements of rule 567—65.209(455B,459A) and any additional NMP requirements for CAFOs in these rules. CAFOs that seek to obtain coverage under an NPDES permit shall have an NMP developed and implemented upon the date of permit coverage.

b. Inspections and recordkeeping.

(1) Visual inspections. Routine visual inspections of the CAFO production area must be conducted, and at a minimum, the following must be included:

1. Weekly inspections of all storm water diversion, runoff diversion structures, and devices channeling contaminated storm water to the open feedlot operation structure.

2. Daily inspection of water lines, including drinking water or cooling water lines.

(2) Corrective actions. Any deficiencies found as a result of the inspections required in subparagraph 65.202(7)“b”(1) or as a result of the liquid level reporting required in paragraph 65.202(7)“e” must be corrected as soon as possible.

(3) The following records must be maintained on site for a period of five years from the date they are created and must be made available to the department upon request:

1. Records documenting the inspections required in subparagraph 65.202(7)“b”(1).

2. Records of weekly liquid level observations as required in paragraph 65.202(7)“e.”

3. Records documenting any actions taken to correct deficiencies as required in subparagraph 65.202(7)“b”(2).

c. Transfer of manure, process wastewater, settled open feedlot effluent, settleable solids, or open feedlot effluent. Prior to transferring manure, process wastewater, settled open feedlot effluent, settleable solids or open feedlot effluent to other persons, a CAFO must provide the recipient of the manure, process wastewater, settled open feedlot effluent, settleable solids or open feedlot effluent with the most current

nutrient analysis. A CAFO must retain for five years records of the date, recipient name and address, nutrient analysis and approximate amount of manure, process wastewater, settled open feedlot effluent, settleable solids or open feedlot effluent transferred to another person.

d. Minimum monitoring requirements for AT systems. Monitoring is required for the entire operational life of the AT system. The department may reduce or revise monitoring requirements after the first five years of system operation. During the first five years of operation of an AT system, the following minimum monitoring will be required:

(1) Discharge monitoring. An effluent collection point must be established at the outlet of the AT system, and the flow volume recorded and an effluent sample collected on each day a discharge from the AT system occurs. Discharge samples must be submitted to a certified laboratory and analyzed for: total Kjeldahl N, NH₄ N, total P, COD, total suspended solids, and chloride.

(2) Discharge monitoring—tile lines. If the AT system includes a perforated tile system installed under any VTA berms to enhance infiltration within the VTA, water samples shall be collected from a sampling point located downgradient of the VTA on each individual tile line or combination of tile lines on the following schedule: one sample shall be taken from each sampling point in March or April of each year when the tile system is flowing and the level of flow in the tile system recorded at the time of sampling. If there is no discharge from the tile line at a time that meets these requirements, documentation on appropriate department forms can be substituted for the sample and analysis. Collected samples shall be submitted to a certified laboratory and analyzed for Ortho-phosphate as P.

(3) Groundwater monitoring. A minimum of two groundwater monitoring wells or piezometers (one upgradient and one downgradient) must be established at each AT system. Additional wells or piezometers may be required if the department determines they are necessary to adequately assess the impacts the AT system is having on groundwater. Samples must be collected from these wells in March or April of each year and analyzed for NH₄ N, NO₃ N, Ortho phosphate as P, and chloride.

(4) Soil sampling. Both shallow and deep soil sampling is required in the VTAs of an AT system.

1. Shallow soil sampling shall be conducted prior to initial discharge of open feedlot effluent into the AT system and repeated annually. Within the VTA, a minimum of three sampling locations shall be established at the entrance to each VTA to be sampled. The three sampling locations shall be spread evenly across the entrances to adequately monitor the effluent application onto the VTAs. Samples shall be collected in the spring. Each sample shall be taken to a depth of six inches and analyzed for pH and P using the Mehlich-3 method.

2. Deep soil sampling shall be conducted prior to initial discharge of open feedlot effluent into the AT system and repeated every five years prior to the submission of an application for an NPDES permit renewal. A minimum of two sampling sites shall be established within each VTA to be sampled, one located where runoff enters the VTA, generally the same location as the shallow soil sampling location, and one where runoff is discharged from the VTA. Soil samples shall be taken from these sites to a depth of four feet, with separate samples taken to represent the 0 to 6-inch depth, the 6- to 12-inch depth, and in one-foot increments thereafter. All samples shall be analyzed for NO₃ N, NH₄ N, pH, and P by the Mehlich-3 method.

If the length of effluent flow through the VTA exceeds 400 feet, an additional soil sample representing the zero to six-inch depth should be taken for each additional 200 feet of VTA length. Samples shall be analyzed for NO₃ N, NH₄ N, pH, and P by the Mehlich-3 method.

e. Quarterly reporting requirements for large CAFOs with outside liquid impoundments. A permittee with outside liquid impoundments must submit quarterly reports by April 10, July 10, October 10, and January 10, following the respective calendar quarters; documenting daily precipitation; weekly impoundment liquid levels; volume of liquid removed from the impoundments; and the date, time, duration, and estimated volume of any overflow. Liquid levels must be obtained by observing a depth marker that clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation of the 25-year, 24-hour precipitation event.

f. Annual reporting requirements for all CAFOs with systems other than AT systems. Permittees with systems other than an AT system must submit an annual report to the department by January 10 of the following year. The annual report must include:

- (1) The number and type of animals in the open feedlot operation;
- (2) Estimated amount of manure, process wastewater, settled open feedlot effluent, settleable solids, or open feedlot effluent generated by the CAFO in the previous 12 months (tons/gallons);
- (3) Estimated amount of total manure transferred to other persons by the CAFO in the previous 12 months (tons/gallons);
- (4) Total number of acres for land application covered by the NMP and the total number of acres under control of the CAFO that were used for land application of manure in the previous 12 months;
- (5) Summary of all manure, process wastewater, settled open feedlot effluent, settleable solids, or open feedlot effluent discharges from the production area that have occurred in the previous 12 months, including date, time, and approximate volume;
- (6) A statement indicating whether the current version of the CAFO's NMP was developed or approved by a certified nutrient management planner;
- (7) Actual crops planted and actual yield for the preceding 12 months; and
- (8) Results of all samples of manure, litter and process wastewater for nitrogen and phosphorus content for manure, litter and process wastewater that was land-applied.

g. Quarterly reporting requirements for CAFOs with AT systems. A permittee with an AT system must submit quarterly reports by April 10, July 10, October 10, and January 10, following the respective calendar quarters. The quarterly reports shall provide all of the following information:

- (1) Daily precipitation.
- (2) Dates on which manure, process wastewater, settled open feedlot effluent, open feedlot effluent, or settleable solids were removed from the production area and estimated amounts of manure, process wastewater, settled open feedlot effluent, settleable solids, or open feedlot effluent removed (tons/gallons).
- (3) Dates on which discharges from the production area or the AT system occurred and the estimated duration and volume of discharge on each discharge date.
- (4) Results of laboratory analyses of discharge samples for each date a discharge from the production area or the AT system occurred. If the results of laboratory analyses are not available by the due date of the quarterly report, the results shall be provided with the following quarter's report.

h. Annual reporting requirements for CAFOs with AT systems. A permittee shall submit an annual report by January 10 of the following year. The annual report must include all of the following:

- (1) The number and type of animals in the open feedlot operation.
- (2) Estimated amount of total manure, process wastewater, settled open feedlot effluent, settleable solids, or open feedlot effluent generated by the CAFO in the previous 12 months (tons/gallons).
- (3) Estimated amount of total manure, process wastewater, settled open feedlot effluent, settleable solids, or open feedlot effluent transferred to other persons by the CAFO in the previous 12 months (tons/gallons).
- (4) Total number of acres for land application covered by the NMP and the total number of acres under control of the CAFO that were used for land application of manure, process wastewater, settled open feedlot effluent, settleable solids, or open feedlot effluent in the previous 12 months.
- (5) Summary of all manure, process wastewater, settled open feedlot effluent, settleable solids, or open feedlot effluent discharges from the production area or AT system that have occurred in the previous 12 months, including date, time, and approximate volume.
- (6) Harvest dates and estimated amounts of forage removed from the AT system during the previous 12 months.
- (7) Results of soil and groundwater monitoring well sampling within the AT system during the previous 12 months.
- (8) A statement indicating whether the current version of the CAFO's NMP was developed or approved by a certified nutrient management planner.

65.202(8) NPDES permit renewal.

a. General requirements. An NPDES permit may be granted for any period of time not to exceed five years. An application for renewal of an NPDES permit must be submitted to the department at least 180 days prior to the date the permit expires. Each permit to be renewed shall be subject to the rules of the department in effect at the time of renewal. A permitted AFO that ceases to be a CAFO will be exempted

from the need to retain an NPDES permit if the permittee can demonstrate to the satisfaction of the department that there is no remaining potential for a discharge of manure that was generated while the operation was a CAFO, other than agricultural storm water from land application areas.

b. Permits involving use of AT systems.

(1) Renewal of a permit involving use of an AT system is contingent upon proper operation and maintenance of the AT system, submittal of all required records and reports, and demonstration that the AT system is providing an equivalent level of performance to that achieved by a containment system that is designed and operated as required by statute, subrule 62.4(12) and this division of this chapter.

(2) If departmental review of an AT system indicates the system is not meeting the equivalent performance standard, the permittee may either be required to make needed system modifications to enable compliance with this standard or be required to install a conventional runoff containment system. Open feedlot operations found to be in compliance with the equivalent performance standard will be issued a five-year NPDES permit that allows continued use of the AT system.

65.202(9) Permit amendment, revocation, and reissuance or termination. The department may amend, revoke and reissue or terminate in whole or part any NPDES permit for cause, either at the request of any interested person, including the permittee, or upon the director's initiative. Any more stringent requirement pursuant to 40 CFR 122.62, 122.63 or 122.64 shall control. All requests shall be in writing and shall contain reasons for the request. Cause for permit amendment, revocation and reissuance, or termination may include but is not limited to the following:

- a.* Violation of any term or condition of the permit.
- b.* Obtaining a permit by misrepresentation of fact or failure to disclose fully all material facts.
- c.* A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.
- d.* Failure to retain, make available, or submit the records and information that the department requires in order to ensure compliance with the operation and discharge conditions of the permit.
- e.* Failure to provide all required application material or appropriate fees.
- f.* A determination by the department that the continued operation of a CAFO constitutes a clear, present and impending danger to public health or the environment.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.203(455B,459A) Construction permits.

65.203(1) Open feedlot operations required to obtain a construction permit. An open feedlot operation must obtain a construction permit prior to any of the following:

- a.* Constructing or expanding a settled open feedlot effluent basin or AT system or installing a settled open feedlot effluent transfer piping system if the open feedlot operation is required to be issued an NPDES permit.
- b.* Increasing the animal unit capacity of the open feedlot operation to more than the animal unit capacity approved by the department in a previous construction permit.
- c.* Increasing the volume of settled open feedlot effluent, settleable solids or open feedlot effluent stored at the open feedlot operation to more than the volume approved by the department in a previous construction permit.
- d.* Repopulating the open feedlot operation if it was discontinued for 24 months or more and the animal unit capacity will be 1,000 animal units or more.

65.203(2) When a construction permit is not required.

a. Research colleges. A construction permit is not required for construction of a settled open feedlot effluent basin or AT system if the basin or system is part of an open feedlot operation that is owned by a research college conducting research activities as provided in Iowa Code section 459A.105.

b. Solids settling facilities. If only solids settling facilities are being constructed, a construction permit is not required. If solids settling facilities are proposed as part of a project that includes facilities that require a construction permit, then the proposed solids settling facilities are subject to a construction permit.

65.203(3) Applications that cannot be approved. The department shall not approve an application for a construction permit unless the applicant submits all of the following:

- a. An NMP as provided in rule 567—65.209(455B,459A).
- b. An engineering report, construction plans, and specifications prepared by a PE or an NRCS-qualified staff person certifying that the design of the settled open feedlot effluent basin or AT system complies with the construction design standards required in this division.

65.203(4) *Plan review criteria; time for approval or disapproval.*

a. *Plan review criteria.* Review of plans and specifications shall be conducted by the department to determine the potential of the settled open feedlot effluent basin or AT system to achieve the level of control being required of the open feedlot operation. Applicable criteria contained in federal law, state law, these rules, NRCS design standards and specifications, unless inconsistent with federal or state law or these rules, and United States Department of Commerce precipitation data will be used in the review of large CAFOs. If the proposed facility plans are not adequately covered by these criteria, applicable criteria contained in current technical literature shall be used. Medium CAFOs and designated CAFOs shall be evaluated using the department's professional judgment.

b. *Time for approval or disapproval.* The department shall approve or disapprove an application for a construction permit within 60 days after receiving the permit application. However, the applicant may deliver a notice requesting a continuance. Upon receipt of a notice, the time required for the department to act upon the application shall be suspended for the period provided in the notice but for not more than 30 days after the department's receipt of the notice. The applicant may submit more than one notice. If review of the application is delayed because the application is incomplete, and the applicant fails to supply requested information within a reasonable time prior to the deadline for action on the application, the permit may be denied and a new application will be required if the applicant wishes to proceed. The department may also provide for a continuance when it considers the application. The department shall provide notice to the applicant of the continuance. The time required for the department to act upon the application shall be suspended for the period provided in the notice but for not more than 30 days. However, the department shall not provide for more than one continuance.

65.203(5) *Expiration of construction permits.* The construction permit shall expire if construction, as defined in rule 567—65.6(455B,459,459A,459B), is not begun within one year and completed within three years of the date of issuance. The director may grant an extension of time to begin or complete construction if it is necessary or justified, upon showing of such necessity or justification to the director.

65.203(6) *Revocation of construction permits.* The department may suspend or revoke a construction permit, modify the terms or conditions of a construction permit, or refuse to renew a permit expiring according to subrule 65.203(5) if it determines that the operation of the open feedlot operation constitutes a clear, present and impending danger to public health or the environment.

65.203(7) *Permit prior to construction.* An applicant for a construction permit shall notify the department prior to the start of construction for any open feedlot operation structure not required to be covered by a construction permit. The applicant shall not begin construction of a settled open feedlot effluent basin or AT system, or begin installation of a settled open feedlot effluent transfer piping system, until the person has been granted a permit for the construction by the department.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.204(455B,459A) Construction permit application. An open feedlot operation required to obtain a construction permit in accordance with the provisions of subrule 65.203(1) shall apply for a construction permit at least 90 days before the date that construction, installation, or modification is scheduled to start.

65.204(1) *Conceptual design.* Prior to submitting an application for a construction permit, the applicant may submit a conceptual design and site investigation report to the department for review and comment.

65.204(2) *Application for a construction permit for an open feedlot operation shall be made on a form provided by the department. The application shall include all of the information necessary to enable the department to determine the potential of the proposed settled open feedlot effluent basin or AT system to achieve the level of control required of the open feedlot operation. A construction permit application shall include the following:*

- a. The name of the owner of the open feedlot operation and the name of the open feedlot operation, including the owner's mailing address and telephone number.

- b. The name of the contact person for the open feedlot operation, including the person's mailing address and telephone number.
- c. The location of the open feedlot operation.
- d. A statement providing that the application is for any of the following:
 - (1) The construction or expansion of a settled open feedlot effluent basin or AT system for an existing open feedlot operation that is not expanding;
 - (2) The construction or expansion of a settled open feedlot effluent basin or AT system for an existing open feedlot operation that is expanding;
 - (3) The construction of a settled open feedlot effluent basin or AT system for a proposed new open feedlot operation.
- e. The animal unit capacity for each animal species in the open feedlot operation before and after the proposed construction.
- f. An engineering report, construction plans and specifications prepared by a PE or by an NRCS-qualified staff person for the settled open feedlot effluent basin or AT system.
- g. A report on the soil and hydrogeologic information for the site, as described in subrules 65.206(2) and 65.207(4).
- h. Information including but not limited to maps, drawings and aerial photos that clearly show the location of all the following:
 - (1) The open feedlot operation and all existing and proposed settled open feedlot effluent basins or AT systems, clean water diversions, and other pertinent features or structures.
 - (2) Any other open feedlot operation under common ownership or common management and located within 1,250 feet of the open feedlot operation.
 - (3) Any public water supply system as defined in Iowa Code section 455B.171 or drinking water well that is located less than the distance from the open feedlot operation required by rule 567—65.205(455B,459A). Information shall also be provided as to whether the proposed settled open feedlot effluent basin or AT system will meet all applicable separation distances.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.205(455B,459A) Water well separation distances for open feedlot operations.

65.205(1) *Unformed settled open feedlot effluent basins.* Unformed settled open feedlot effluent basins shall be separated from water wells as follows:

- a. *Public wells.* 1,000 feet from shallow wells and 400 feet from deep wells;
- b. *Private wells.* 400 feet from both shallow wells and deep wells.

65.205(2) *Open feedlots, solids settling facilities, formed settled open feedlot effluent basins, feed storage runoff control structures and AT systems.* Open feedlots, solids settling facilities, formed settled open feedlot effluent basins, feed storage runoff control structures and AT systems shall be separated from water wells as follows: for both public wells and private wells, 200 feet from shallow wells and 100 feet from deep wells.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.206(455B,459A) Settled open feedlot effluent basins—investigation, design and construction requirements. A settled open feedlot effluent basin required to be constructed pursuant to a construction permit issued pursuant to Iowa Code section 459A.205 shall meet the design and construction requirements set forth in this rule.

65.206(1) *Drainage tile investigation and removal.* Prior to constructing a settled open feedlot effluent basin, the site for the basin shall be investigated for drainage tile lines as provided in this subrule. All applicable records of known drainage tiles shall be examined for the existence of drainage tile lines. Prior to the excavation for an unformed manure storage structure, an inspection trench of at least ten inches wide shall be dug around the structure to a depth of at least 6 feet below the original grade and within 25 feet of the proposed outside of the toe of the berm. Drainage tile lines discovered during the tile inspection of a settled open feedlot effluent basin shall be removed and rerouted in the inspection trench or in an area outside of the inspection trench. All tiles within the inspection trench perimeter shall be removed or completely plugged with concrete, grout or similar materials. Drainage tile lines installed at the time of

construction to lower the groundwater may remain in place as long as they are outside of the proposed toe of the berm.

65.206(2) *Soils and hydrogeologic report.* A settled open feedlot effluent basin required to be constructed pursuant to a construction permit issued pursuant to rule 567—65.203(455B,459A) shall meet design standards as required by a soils and hydrogeologic report. The report shall be submitted with the construction permit application as provided in rule 567—65.204(455B,459A). The report shall include all of the following:

a. A description of the steps taken to determine the soils and hydrogeologic conditions at the proposed construction site, a description of the geologic units encountered, and a description of the effects of the soil and groundwater elevation and direction of flow on the construction and operation of the basin.

b. The subsurface soil classification of the site. A subsurface soil classification shall be based on ASTM international designation D 2487-06 or D 2488-06.

c. The results of a soils investigation conducted at a minimum of three locations within the area of the basin reflecting the continuous soil profile existing within the area of the basin. The soils investigation results shall be used in determining subsurface soil characteristics and groundwater elevation and direction of flow at the proposed site. The soils investigation shall be conducted and utilized as follows:

(1) By a qualified person ordinarily engaged in the practice of performing soils investigations.

(2) At locations that reflect the continuous soil profile conditions existing within the area of the proposed basin, including conditions found near the corners and the deepest point of the proposed basin. The soils investigation shall be conducted to a minimum depth of ten feet below the proposed bottom elevation of the basin.

(3) By methods that identify the continuous soil profile and do not result in mixing of soil layers. Soil corings using hollow stem augers and other suitable methods that do not result in soil layer mixing may be used.

(4) Soil corings may be used to determine current groundwater levels by completing the corings as temporary monitoring wells as provided in subparagraph 65.206(3)“a”(1) and measuring the water levels in these wells no earlier than seven days after installation as provided in subparagraph 65.206(3)“a”(2).

(5) Upon abandonment of soil core holes, all soil core holes including those developed as temporary water level monitoring wells shall be plugged with concrete, Portland cement concrete grout, bentonite, or similar materials.

(6) If excavation methods are used in conducting the soils investigation, upon closure these excavations must be filled with suitable materials and adequately compacted to ensure they will not compromise the integrity of the basin liner.

65.206(3) *Hydrology.*

a. For purposes of this rule, groundwater table is the seasonal high-water table determined by a PE, a groundwater professional certified pursuant to 567—Chapter 134, or qualified staff from the department or NRCS. If a construction permit is required, the department must approve the groundwater table determination.

(1) Current groundwater levels shall be measured as provided in this subparagraph for either a formed settled open feedlot effluent basin or an unformed settled open feedlot effluent basin. Three temporary monitoring wells shall be developed according to paragraph 65.108(6)“c.” The top of the well screen shall be within five feet of the ground surface. Each well shall be extended to at least two feet below the proposed top of the liner of an unformed settled open feedlot effluent basin, or to at least two feet below the proposed bottom of the footings of a formed settled open feedlot effluent basin. In addition, the wells must be installed as follows:

1. Unformed basins. For an unformed settled open feedlot effluent basin, the monitoring wells may be installed in the soil core holes developed as part of conducting the soils investigation required in paragraph 65.206(2)“c.”

2. Formed basins. For a formed settled open feedlot effluent basin, at least three temporary monitoring wells shall be installed as close as possible to three corners of the structure, with one of the wells close to the corner of deepest excavation. If the formed settled open feedlot effluent basin is circular,

the three monitoring wells shall be equally spaced and one well shall be placed at the point of deepest excavation.

(2) The seasonal high-water table shall be determined by considering all relevant data, including the groundwater levels measured in the temporary monitoring wells not earlier than seven days following installation, NRCS soil survey information, soil characteristics such as color and mottling, other existing water table data, and other pertinent information. If a drainage system for artificially lowering the groundwater table will be installed in accordance with the requirements of paragraph 65.206(3) "c," the level to which the groundwater table will be lowered will be considered to represent the seasonal high-water table.

b. The settled open feedlot effluent basin shall be constructed with a minimum separation of two feet between the top of the liner of the basin and the seasonal high-water table.

c. If a drainage tile line around the perimeter of the basin is installed a minimum of two feet below the top of the basin liner to artificially lower the seasonal high-water table, the top of the basin's liner may be a maximum of four feet below the seasonal high-water table which existed prior to installation of the perimeter tile system. The seasonal high-water table may be artificially lowered by gravity flow tile lines or other similar system. However, the following shall apply:

(1) Except as provided in subparagraph 65.206(3) "b"(2), an open feedlot operation shall not use a nongravity mechanical system that uses pumping equipment.

(2) If the open feedlot operation was constructed before July 1, 2005, the operation may continue to use its existing nongravity mechanical system that uses pumping equipment or it may construct a new nongravity mechanical system that uses pumping equipment. However, an open feedlot operation that expands the area of its open feedlot on or after April 1, 2011, shall not use a nongravity mechanical system that uses pumping equipment.

(3) Drainage tile lines may be installed to artificially lower the seasonal high-water table at a settled open feedlot effluent basin, if all of the following conditions are satisfied:

1. A device to allow monitoring of the water in the drainage tile lines and a device to allow shutoff of the flow in the drainage tile lines are installed, if the drainage tile lines do not have a surface outlet accessible on the property where the settled open feedlot effluent basin is located.

2. Drainage tile lines are installed horizontally within 25 feet away from the outside toe of the berm of the settled open feedlot effluent basin. Drainage tile lines shall be placed in a vertical trench and encased in granular material that extends upward to the level of the seasonal high-water table which existed prior to installation of the perimeter tile system.

d. Open feedlot operation structures exceeding storage capacity or dam height thresholds may be required to obtain department permits, as specified in rule 567—71.3(455B) and 567—Chapter 73.

65.206(4) *Liner design and construction.* The liner of a settled open feedlot effluent basin shall comply with all of the following:

a. The liner shall be constructed to have a percolation rate that shall not exceed one-sixteenth inch per day at the design depth of the basin as determined by percolation tests conducted by the PE. If a clay soil liner is used, the liner shall be constructed with a minimum thickness of 12 inches or the minimum thickness necessary to comply with the percolation rate in this paragraph, whichever is greater.

b. The liner shall be constructed to have a percolation rate that shall not exceed one-sixteenth inch per day at the design depth of the basin. The design of the liner will specify a moisture content, compaction requirement, and liner thickness that will comply with the maximum allowable percolation requirement, and will be based on moisture content and percentage of maximum density as determined by a standard 5-point proctor test performed in accordance with ASTM D698 (Method A), effective November 11, 1991. The liner thickness will be based on laboratory tests of the compacted material, with a minimum liner thickness of 12 inches. Appropriate field or laboratory testing during construction shall be provided to verify the design requirements are met.

65.206(5) *Berm erosion inspection and repair.* The owner of an open feedlot operation using a settled open feedlot effluent basin shall inspect the berms of the basin at least semiannually for evidence of erosion. If the inspection reveals erosion which may impact the basin's structural stability or the integrity of the basin's liner, the owner shall repair the berms.

65.206(6) *Unformed basins containing confinement manure and open feedlot effluent.* Unformed basins containing confinement manure and open feedlot effluent shall meet the confinement construction standards and separation distance requirements provided in Division II of this chapter. The unformed basin design shall ensure adequate storage for the annual manure generation of confinement animals, the annual runoff from the open feedlot portion, including the basin surface area, and the open feedlot runoff resulting from the 25-year, 24-hour precipitation event below the two-foot freeboard level.

65.206(7) *Settled open feedlot effluent basin (SOFEB) design and operation requirements.*

- a. All SOFEBs shall have a minimum ten-foot wide top of dike.
- b. All SOFEBs shall have a minimum three-foot horizontal to one-foot vertical interior and exterior side slopes.
- c. All SOFEBs shall have depth markers installed labeling each foot of depth and critical pumping depths noted according to the designed operating system.
- d. All SOFEBs shall be designed using the latest available NOAA Atlas 14 Volume 8 Version 2, effective 2013, rainfall data for the county where the SOFEB is located. NOAA data can be obtained from the National Weather Service website.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.207(455B,459A) AT systems—design requirements.

65.207(1) *Containment volume.*

a. Adequate capacity must be provided within the AT system or within the solids settling facility for the open feedlot operation to contain expected open feedlot effluent from November 1 to March 30 or to hold the precipitation event as required by paragraph 65.200(2)“a,” whichever is greater. Controls on the solids settling facility or the AT system shall prevent release of collected open feedlot effluent to waters of the United States during the period from November 1 to March 30.

b. If the containment volume required in paragraph 65.207(1)“a” is provided in an open feedlot operation structure whose primary purpose is to remove settleable solids from open feedlot effluent prior to discharge into an AT system, the basin shall not be required to comply with the liner design and construction requirements of subrule 65.206(4), provided the basin does not retain collected open feedlot effluent for more than seven consecutive days following a precipitation event during the period from March 30 to November 1.

65.207(2) *Solids settling.* Settleable solids shall be removed from open feedlot effluent prior to discharge of the effluent into an AT system. Solids settling shall be conducted in conformance with the requirements of paragraph 65.200(1)“b.”

65.207(3) *Drainage tile investigation and removal.* Prior to constructing an AT system, the owner of the open feedlot operation shall investigate the site for the AT system for drainage tile lines. The investigation shall be made by digging a core trench to a depth of at least six feet from ground level at the projected center of the berm of the AT system. A written record of the investigation shall be submitted as part of the construction certification required in rule 567—65.208(455B,459A). If a drainage tile line is discovered, one of the following solutions shall be implemented:

a. The drainage tile line shall be rerouted around the perimeter of the AT system at a distance of least 25 feet horizontally separated from the toe of the outside berm of the AT system. For an area of the system where there is not a berm, the drainage tile line shall be rerouted at least 50 feet horizontally separated from the edge of the system.

b. The drainage tile line shall be replaced with a nonperforated tile line under the AT system. The nonperforated tile line shall be continuous and without connecting joints. There must be a minimum of three feet of separation between the nonperforated tile line and the soil surface of the AT system.

65.207(4) *Soils and hydrogeologic report.* An AT system constructed pursuant to a construction permit issued pursuant to rule 567—65.203(455B,459A) shall meet design standards as required by a soils and hydrogeologic report. The report shall be submitted with the construction permit application as provided in rule 567—65.204(455B, 459A). The report shall include all of the following:

a. A description of the steps taken to determine the soils and hydrogeologic conditions at the proposed construction site, a description of the geologic units encountered, and a description of the effects

of the soil and groundwater elevation and direction of flow on the construction and operation of the AT system.

b. Subsurface soil classification of the site. A subsurface soil classification shall be based on ASTM international designation D 2487-06 or D 2488-06.

c. The results of a soils investigation conducted at a minimum of three locations within the area of the proposed AT system for AT systems of five acres or less, with one additional soils investigation site utilized for each additional three acres of surface area or fraction thereof. The soils investigation results shall be used in determining subsurface soil characteristics and groundwater elevation and direction of flow at the proposed AT system site. The soils investigation shall be conducted and utilized as follows:

(1) By a qualified person ordinarily engaged in the practice of performing soils investigations.

(2) At locations that reflect the continuous soil profile conditions existing within the area of the proposed AT system. The soils investigation shall be conducted to a minimum depth of ten feet below the elevation of the soil surface of the proposed AT system.

(3) By methods that identify the continuous soil profile and do not result in mixing of soil layers. Investigation methods may include soil corings using hollow stem augers, soil test pits, or other suitable methods that do not result in soil layer mixing.

(4) Soil core holes may be used to determine current groundwater levels by completing the core holes as temporary monitoring wells and measuring the water levels in these wells not earlier than seven days after installation.

(5) Upon abandonment of the soil core holes, all soil core holes, including those developed as temporary water level monitoring wells, shall be plugged with concrete, Portland cement concrete grout, bentonite, or similar materials.

(6) If soil test pits or other excavation methods are used in conducting the soils investigation, upon closure these excavations must be filled with suitable materials and adequately compacted to ensure they will not compromise the integrity of the AT system.

65.207(5) Hydrology—groundwater table. For purposes of this rule, groundwater table is the seasonal high-water table determined by a PE, a groundwater professional certified pursuant to 567—Chapter 134, or qualified staff from the department or NRCS. If a construction permit is required, the department must approve the groundwater table determination.

a. *Groundwater level measurements.* Groundwater levels shall be measured using at least one of the following methods:

(1) Temporary monitoring wells. Three temporary monitoring wells shall be developed to a minimum of ten feet below the surface of the proposed AT system and constructed in accordance with requirements of paragraph 65.109(6) "c." The top of the well screen shall be within five feet of the ground surface. These monitoring wells may be installed in the soil core holes developed as part of conducting the soils investigation required in paragraph 65.207(4) "c."

(2) Test pits. Test pits may be used in lieu of temporary monitoring wells to determine the seasonal high-water table or prior to the construction of an AT system to ensure the required separation distance to the seasonal high-water table is being met. The bottom of each pit shall be a minimum of five feet below the proposed surface of the AT system. However, if the test pit is also being used to conduct the soils investigation required in paragraph 65.207(4) "c," the bottom of the pit shall be a minimum of ten feet below the surface of the proposed AT system. Each pit shall be allowed to remain open and unaltered for a minimum of seven days for viewing by the department or an NRCS-qualified staff person. Adequate protection (temporary berms and covers) shall be provided to prevent surface runoff from entering the test pits. Test pits shall be located as needed to provide an accurate assessment of soil materials and seasonal high groundwater levels throughout the area of the proposed AT system. A description of the materials present in the test pit shall be documented by all of the following:

1. Digital photos;

2. Description of soils including mottling;

3. Weather conditions both prior to and during the period in which test pits are open.

b. *Determination of seasonal high-water table.* The seasonal high-water table shall be determined by considering all relevant data, including the groundwater levels measured in the temporary monitoring wells

or test pits not earlier than seven days following installation, NRCS soil survey information, soil characteristics such as color and mottling found in soil cores and test pits, other existing water table data, and other pertinent information. If a drainage system for artificially lowering the groundwater table will be installed, the level to which the groundwater table will be lowered will be considered to represent the seasonal high-water table.

c. *Seasonal high-water table.* The seasonal high-water table shall be a minimum of four feet below the finished grade of a VTA.

65.207(6) *Stand-alone VTA.*

a. *Computer modeling.* Results of predictive computer modeling for the proposed alternative technology system shall be used to determine suitability of the proposed site for the system and to predict performance of the alternative technology system as compared to the use of a 25-year, 24-hour runoff containment system, over a 25-year period. A summary of the computer modeling results shall be approved and provided to the department.

b. *Size.* The computer model used to determine whether the proposed AT system will meet the equivalent performance standard shall also be used to establish the minimum required size of the VTA. However, in no case shall the size of the VTA be less than the following:

(1) 100 percent of the total drainage area (feedlot and other) served if the soil permeability is from six-tenths of an inch to two inches per hour.

(2) 200 percent of the total drainage area (feedlot and other) served if the soil permeability is from two-tenths to six-tenths of an inch per hour.

c. *Slope.* The constructed VTA shall be level in one dimension and have a slight slope (maximum of 5 percent) in the other dimension.

d. *Berming.* The VTA must be bermed to prevent inflow of surface water from outside areas.

e. *Spreaders.* Settled open feedlot effluent must be discharged evenly across the top width of the VTA and allowed to slowly flow downslope through the VTA. Level spreaders, at a maximum six inches tall, or other practices may be required to maintain uniform flow of settled open feedlot effluent across the width of the VTA as flow moves downslope through the VTA.

f. *Soil permeability.* Soil permeability within the VTA must be from two-tenths to two inches per hour throughout the soil profile to a depth of five feet. Soil permeability must be verified by conducting on-site or laboratory soil permeability testing.

g. *Groundwater lowering system.* The seasonal high-water table within the VTA must be capable of being lowered to a depth of four to five feet with a perimeter tile system installed outside of the VTA. Design information must be provided that demonstrates the adequacy of the proposed groundwater lowering system. The tile system must satisfy the following requirements:

(1) If the tile system does not have a surface outlet accessible on the property where the AT system is located, a device to allow monitoring of the water in the tile system and a device to allow shutoff of the flow in the tile system must be installed.

(2) Tile lines in the system must be installed horizontally at least 25 feet away from the outside toe of the berm of the VTA.

h. *Tile system to enhance infiltration within the VTA.* A tile system may be installed at the perimeter of the VTA cells to enhance infiltration within the VTA. The tile system must satisfy the following requirements:

(1) Tile lines shall be installed at the centerline of the berms of the VTA cells.

(2) The tile lines shall be constructed such that no settled open feedlot effluent can enter the lines except through infiltration through the soil profile.

(3) A shutoff valve and sampling point located downslope of the VTA cell shall be provided for each individual tile line. However, if multiple tile lines are brought together into a common tile line, a single shutoff valve and sampling point may be utilized.

(4) Monitoring of the tile lines must be conducted in accordance with the requirements of subparagraph 65.202(7)“d”(2).

i. *Depth to sands, gravels, or glacial outwash.* A VTA is not allowed if the depth to sands, gravels, or glacial outwash is less than six feet. A soils investigation that documents sands found are in isolated

sand lenses that will not have a significant impact on subsurface water flow or groundwater quality shall not prohibit use of the site.

j. Depth to bedrock. A minimum of ten feet of overburden or loose material must exist between the surface of the constructed VTA and underground bedrock.

k. Flooding. The VTA must be constructed in areas that are not subject to flooding more frequently than once in 25 years.

l. Distance to water bodies. The following distances, measured along the path of water flow, shall be provided between the point of discharge from the VTA and the receiving water body.

(1) Designated use streams referenced in 567—subrule 61.3(5). A minimum distance of 500 feet or ½ foot distance per animal unit capacity of the feedlot area which drains to the VTA, whichever is greater, shall be provided.

(2) All other uncrossable intermittent streams. A minimum distance of 200 feet shall be provided.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.208(455B,459A) Construction certification.

65.208(1) The owner of an open feedlot operation who is issued a construction permit for a settled open feedlot effluent basin or AT system as provided in rule 567—65.203(455B,459A) shall submit to the department a construction certification from a PE certifying all of the following:

a. The settled open feedlot effluent basin or AT system was constructed in accordance with the design plans submitted to the department as part of an application for a construction permit pursuant to rule 567—65.204(455B,459A). If the actual construction deviates from the approved design plans, the construction certification shall identify all changes and certify that the changes were consistent with all applicable standards of these rules.

b. The settled open feedlot effluent basin or AT system was inspected by the PE after completion of construction and before commencement of operation.

65.208(2) A written record of an investigation for drainage tile lines, including the findings of the investigation and actions taken to comply with subrules 65.206(1) and 65.207(3), shall be submitted as part of the construction certification.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.209(455B,459A) NMP requirements.

65.209(1) The owner of an open feedlot operation that has an animal unit capacity of 1,000 animal units or more or that is required to be issued an NPDES permit shall develop and implement an NMP meeting the requirements of this rule. The owner of an open feedlot operation who seeks to obtain or is required to be issued an NPDES permit shall develop and implement an NMP meeting the requirements of this rule no later than the date on which the NPDES permit becomes effective. For the purpose of this rule, requirements pertaining to open feedlot effluent also apply to settled open feedlot effluent and settleable solids.

65.209(2) Not more than one open feedlot operation shall be covered by a single NMP. For an open feedlot operation that is required to have an NPDES permit and the AFO includes an open feedlot operation and a confinement feeding operation, the NMP must include both the open feedlot operation and the confinement feeding operation if the confinement feeding operation does not have an MMP. If the confinement feeding operation portion of the AFO does have an MMP as required in rules 567—65.110(455B,459,459B) and 567—65.111(455B,459,459B), the confinement feeding operation portion shall not be included in the NMP; however, in that event, the MMP must be amended to include the information specified in paragraph 65.209(8) “e.”

65.209(3) A person shall not remove manure, process wastewater or open feedlot effluent from an open feedlot operation structure that is part of an open feedlot operation for which an NMP is required under this rule, unless the department approves an NMP as required in this rule.

65.209(4) The department shall not approve an application for a permit to construct a settled open feedlot effluent basin or AT system unless the owner of the open feedlot operation applying for approval submits an NMP together with the application for the construction permit as provided in rule

567—65.203(455B,459A). The owner shall also submit proof that the owner has published a notice for public comment as provided in subrule 65.209(7).

65.209(5) If a construction permit is required as provided in rule 567—65.203(455B,459A), the department shall approve or disapprove the NMP as part of the construction permit application. If a construction permit is not required, the department shall approve or disapprove the NMP within 60 days from the date that the department receives the NMP.

65.209(6) Prior to approving or disapproving an NMP as required in this rule, the department may receive comments exclusively to determine whether the NMP is submitted according to procedures required by the department and that the NMP complies with the provisions of this rule.

65.209(7) Public notice.

a. The owner of the open feedlot operation shall publish a notice for public comment in a newspaper having a general circulation in the county where the open feedlot operation is or is proposed to be located and in the county where manure, process wastewater, or open feedlot effluent that originates from the open feedlot operation may be applied under the terms and conditions of the NMP.

b. The notice for public comment shall include all of the following:

(1) The name of the owner of the open feedlot operation submitting the NMP.

(2) The name of the township where the open feedlot operation is or is proposed to be located and the name of the township where manure, process wastewater, or open feedlot effluent originating from the open feedlot operation may be applied.

(3) The animal unit capacity of the open feedlot operation.

(4) The time when and the place where the NMP may be examined as provided in Iowa Code section 22.2.

(5) Procedures for providing public comment to the department. The notice shall also include procedures for requesting a public hearing conducted by the department. The department is not required to conduct a public hearing if it does not receive a request for the public hearing within ten days after the first publication of the notice for public comment as provided in this subrule. If such a request is received, the public hearing must be conducted within 30 days after the first date that the notice for public comment was published.

(6) A statement that a person may acquire information relevant to making comments under this subrule by accessing the department's Internet website. The notice for public comment shall include the address of the department's Internet website as required by the department.

65.209(8) Except as provided in paragraph 65.209(8)“f,” an NMP shall include all of the following:

a. An estimate of the nitrogen and phosphorus concentration of manure, process wastewater and open feedlot effluent and an estimate of the manure, process wastewater, and open feedlot volume or weight produced by the open feedlot operation, in accordance with subrule 65.111(3).

b. Application rate calculations consistent with the requirements of subrule 65.111(12). The 100 pounds of available nitrogen per acre limitation specified in paragraph 65.111(13)“c” (applicable to open feedlot operations and combined open feedlot operations and confinement operations with an NPDES permit because of requirements in subrule 65.111(4)) pertaining to liquid manure applied to land currently planted to soybeans or to land where a soybean crop is planned applies only to liquid manure, process wastewater or settled open feedlot effluent.

c. The location of manure application. If the application is on land other than land owned or rented for crop production by the owner of the open feedlot operation, the plan shall include a copy of each written agreement executed by the owner of the open feedlot operation and the landowner or the person renting the land for crop production where the manure, process wastewater or open feedlot effluent may be applied. The written agreement shall indicate the number of acres on which the manure, process wastewater or effluent may be applied and the length of the agreement.

d. A phosphorus index of each field in the nutrient management plan, as defined in paragraph 65.111(12)“a,” including the factors used in the calculation. A copy of the NRCS phosphorus index detailed report shall satisfy the requirement to include the factors used in the calculation.

e. Information that shows all of the following:

(1) There is adequate storage for manure, process wastewater, stockpiled manure and open feedlot effluent, including procedures to ensure proper operation and maintenance of the storage structures.

(2) The proper management of animal mortalities to prevent discharge of pollutants to surface water and to ensure that animals are not disposed of in an open feedlot operation structure or a treatment system that is not specifically designed to treat animal mortalities.

(3) Surface drainage prior to contact with an open feedlot structure is diverted, as appropriate, from the open feedlot operation.

(4) Animals kept in the open feedlot operation do not have direct contact with any waters of the United States.

(5) Chemicals or other contaminants handled on site are not disposed of in manure, process wastewater, an open feedlot operation structure or a treatment system that is not specifically designed to treat such chemicals or contaminants.

(6) Equipment used for the land application of manure, process wastewater or open feedlot effluent must be periodically inspected for leaks.

(7) Appropriate site-specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States.

(8) Protocols for appropriate testing of manure, process wastewater, open feedlot effluent and soil.

(9) Protocols to land-apply manure, process wastewater or open feedlot effluent in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, process wastewater or open feedlot effluent.

(10) Identification of specific records that will be maintained to document the implementation and management of the requirements in this subrule.

f. Sales of scraped solids or settleable solids licensed by IDALS. Open feedlot operations that will sell scraped solids or settleable solids as a commercial fertilizer or soil conditioner regulated by IDALS under Iowa Code chapter 200 or bulk dry animal nutrient product under Iowa Code chapter 200A shall submit a copy of their site-specific IDALS license or documentation that manure will be sold pursuant to Iowa Code chapter 200 or 200A as regulated by IDALS and may, in lieu of complying with this subrule for that portion of open feedlot effluent, submit to the department a copy of the operation's site-specific IDALS license or documentation for any scraped solids or settleable solids that will be sold pursuant to Iowa Code chapter 200 or 200A, along with the department-approved NMP form for sales of scraped solids or settleable solids.

g. An open feedlot operation must submit a complete NMP using a new phosphorus index, including soil sampling as required in subrule 65.111(11), for each field in the NMP a minimum of once every five years, submitting the plan with the NPDES permit renewal application if the open feedlot operation has an NPDES permit.

65.209(9) If an open feedlot operation uses an alternative technology system as provided in rule 567—65.207(455B,459A), the NMP is not required to provide for settled open feedlot effluent that enters the AT system.

65.209(10) Current NMP; recordkeeping; record inspections.

a. Current NMP. The owner of an open feedlot operation who is required to submit an NMP shall maintain a current NMP at the site of the open feedlot operation and shall make the current NMP available to the department upon request. If nutrient management practices change, a person required to submit an NMP shall make appropriate changes consistent with this rule. If values other than the standard table values are used for NMP calculations, the source of the values used shall be identified.

b. Recordkeeping. Records shall be maintained by the owner of an open feedlot operation who is required to submit an NMP. This recorded information shall be maintained for five years following the year of application or for the length of the crop rotation, whichever is greater. Records shall be maintained at the site of the open feedlot operation and shall be made available to the department upon request. Records to demonstrate compliance with the NMP shall include the requirements of rule 567—65.111(455B,459,459B) and the following:

(1) Weather conditions at time of application and for 24 hours prior to and following the application.

(2) Date(s) when application equipment was inspected.

(3) All applicable records identified in paragraph 65.209(8) “e.”

c. Record inspection. The department may inspect an open feedlot operation at any time during normal working hours and may inspect the NMP and any records required to be maintained.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.210 to 65.299 Reserved.

DIVISION IV
ANIMAL TRUCK WASH FACILITIES

567—65.300(455B,459A) Minimum animal truck wash effluent control requirements. An animal truck wash facility shall provide for the management of manure, process wastewater, settleable solids, scraped solids, and animal truck wash effluent by using the control method as provided in subrules 65.300(1) through 65.300(4). A release shall be reported to the department as provided in subrule 65.2(1).

65.300(1) No direct discharge of animal truck wash effluent shall be allowed from an animal truck wash facility into a publicly owned lake, a known sinkhole, or an agricultural drainage well.

65.300(2) Land application.

a. General requirements. Animal truck wash effluent shall be land-applied in a manner which will not cause pollution of surface water or groundwater. Land application of animal truck wash effluent shall not exceed one inch per hour, and land application shall cease immediately if runoff occurs. Land application of animal truck wash effluent shall be conducted on days when weather and soil conditions are suitable. Weather and soil conditions are normally considered suitable for animal truck wash effluent application if (1) land application areas are not frozen or snow-covered, (2) temperatures during application are greater than 32 degrees Fahrenheit, and (3) precipitation has not exceeded the water holding capacity of the soil to accept the effluent application without the possibility of runoff. Application in accordance with the provisions of state law and the rules in this chapter shall be deemed as compliance with this requirement.

b. Separation distances. A person shall not apply animal truck wash effluent on land located within 750 feet from a residence not owned by the titleholder of the land, unless one of the following applies:

(1) The animal truck wash effluent is land-applied by injection or incorporation on the same date as the animal truck wash effluent was land-applied.

(2) The titleholder of the land benefiting from the separation distance requirement executes a written waiver with the titleholder of the land where the animal truck wash effluent is land-applied.

(3) The animal truck wash effluent is from a small animal truck wash facility or an animal truck wash facility that is part of a SAFO.

65.300(3) The owner of an animal truck wash facility who discontinues the use of the facility shall remove and land-apply in accordance with state law all manure, process wastewater and animal truck wash effluent from the animal truck wash effluent structures as soon as practical but not later than six months following the date the animal truck wash facility is discontinued.

65.300(4) Stockpiling of scraped solids and settleable solids. Stockpiles of solids scraped from animal truck wash facilities and stockpiles of settleable solids shall comply with the following requirements:

a. Stockpiles must be land-applied in accordance with subrule 65.300(2) as soon as possible but not later than six months after they are established.

b. Stockpiles shall not be located within 400 feet from a designated area or, in the case of a high-quality water, within 800 feet.

c. Stockpiles shall not be located in grassed waterways or areas where water ponds or has concentrated flow.

d. Stockpiles shall not be located within 200 feet of a terrace tile inlet or surface tile inlet or known sinkhole unless the stockpile is located so that any runoff from the stockpile will not reach the inlet or sinkhole.

e. Stockpiles shall not be located on land having a slope of more than 3 percent unless methods, structures or practices are implemented to contain the stockpiled solids, including but not limited to hay

bales, silt fences, temporary earthen berms, or other effective measures, and to prevent or diminish precipitation-induced runoff from the stockpiled solids.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.301(455B,459,459A) Construction permits.

65.301(1) *Animal truck wash facilities required to obtain a construction permit.* An animal truck wash facility must obtain a construction permit as follows:

a. Prior to construction or expansion of an animal truck wash effluent structure.

b. When the department has previously issued the animal truck wash facility a construction permit and the volume of the animal truck wash effluent would be more than the volume approved by the department in the previous construction permit.

c. When the animal truck wash facility is part of a confinement feeding operation and all of the following apply:

(1) The department has issued a construction permit or an NPDES permit for the confinement feeding operation or a letter approving a construction design statement for the confinement feeding operation in lieu of a construction permit.

(2) The animal truck wash effluent will be added to an existing manure storage structure resulting in a total stored volume greater than that approved in the construction permit or the construction design statement approval letter.

d. When the animal truck wash facility is part of an open feedlot operation and all of the following apply:

(1) The department has issued a construction permit or an NPDES permit for an open feedlot operation.

(2) The animal truck wash effluent will be added to an existing settled open feedlot effluent basin resulting in a total stored volume greater than that approved in the construction permit or NPDES permit.

e. When an animal truck wash facility is constructed or expanded as part of a SAFO that includes a manure storage structure and the animal truck wash effluent will be added to the manure storage structure.

65.301(2) *Construction permit not required.* A construction permit is not required in the following situations:

a. When a small animal truck wash facility is constructed or expanded and remains a small animal truck wash facility.

b. When a small animal truck wash facility is part of a SAFO and the animal truck wash effluent is added to the manure storage structure.

65.301(3) *Construction permit applications that cannot be approved.* The department shall not approve an application for a construction permit unless the applicant submits all of the following:

a. An NMP as provided in rule 567—65.306(455B,459A).

b. An engineering report, construction plans, and specifications prepared by a PE or an NRCS-qualified staff person certifying that the design of the animal truck wash effluent structure complies with the construction design standards required in Division III of this chapter.

65.301(4) *Plan review criteria; time for approval or disapproval.*

a. *Plan review criteria.* Review of plans and specifications shall be conducted by the department to determine the potential of the animal truck wash effluent structure to achieve the level of control being required of the animal truck wash facility. Applicable criteria contained in federal law, state law, these rules, NRCS design standards and specifications unless inconsistent with federal or state law or these rules will be used in this review. If the proposed facility plans are not adequately covered by these criteria, applicable criteria contained in current technical literature shall be used.

b. *Time for approval or disapproval.* The department shall approve or disapprove an application for a construction permit within 60 days after receiving the permit application. However, the applicant may deliver a notice requesting a continuance. Upon receipt of a notice, the time required for the department to act upon the application shall be suspended for the period provided in the notice but for not more than 30 days after the department's receipt of the notice. The applicant may submit more than one notice. If review of the application is delayed because the application is incomplete, and the applicant fails to supply requested information within a reasonable time prior to the deadline for action on the application, the

permit may be denied and a new application will be required if the applicant wishes to proceed. The department may also provide for a continuance when it considers the application. The department shall provide notice to the applicant of the continuance. The time required for the department to act upon the application shall be suspended for the period provided in the notice but for not more than 30 days. However, the department shall not provide for more than one continuance.

65.301(5) *Expiration of construction permits.* The construction permit shall expire if construction, as defined in rule 567—65.6(455B,459,459A,459B), is not begun within one year and completed within three years of the date of issuance. The director may grant an extension of time to begin or complete construction if it is necessary or justified, upon showing of such necessity or justification to the director.

65.301(6) *Revocation of construction permits.* The department may suspend or revoke a construction permit, modify the terms or conditions of a construction permit, or refuse to renew a construction permit expiring according to subrule 65.301(5) if it determines that the operation of the animal truck wash facility constitutes a clear, present and impending danger to public health or the environment.

65.301(7) *Permit prior to construction.* An applicant for a construction permit shall notify the department prior to the start of construction for any animal truck wash facility. The applicant shall not begin construction of an animal truck wash facility until the person has been granted a permit for the construction by the department.

65.301(8) *Materials used in animal truck wash.* A facility that performs acid washing, aluminum brightening, or other such processes that significantly increase the metals concentration of the effluent is not considered an animal truck wash facility for purposes of this provision. Use of disinfectant materials to control and prevent animal diseases is allowed.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.302(455B,459,459A) Separation distances.

65.302(1) *Separation distances for the construction or expansion of an animal truck wash effluent structure.*

a. An animal truck wash effluent structure shall not be constructed or expanded within 1,250 feet from a residence not owned by the titleholder of the animal truck wash facility, a commercial enterprise, a bona fide religious institution, an educational institution, or a public use area.

b. An animal truck wash effluent structure shall not be constructed or expanded within 100 feet from a public thoroughfare.

c. Any separation distance required for a confinement feeding operation structure and a location or object specified in Table 6 for “Water Wells” and “Other Distances” located at iowadnr.gov/afo/rules shall also apply to the animal truck wash effluent structure and that same location or object.

d. An animal truck wash effluent structure shall not be constructed or expanded on land that is part of a one hundred year floodplain.

65.302(2) *Exemptions to separation distances for the construction or expansion of an animal truck wash effluent structure.*

a. Paragraph 65.302(1)“a” does not apply if a residence, educational institution, bona fide religious institution, or commercial enterprise was constructed or expanded, or if the boundaries of a public use area were expanded, after the date that the animal truck wash facility was established. The date the animal truck wash facility was established is the date on which the animal truck wash facility commenced operating. A change in ownership or expansion of an animal truck wash facility shall not change the date of operation.

b. Paragraphs 65.302(1)“a” and “b” do not apply if the titleholder of the land benefiting from the separation distance requirement, including a person authorized by the titleholder, executes a written waiver with the owner of the animal truck wash effluent structure. The structure shall be constructed or expanded under such terms and conditions that the parties negotiate. The state or a political subdivision constructing or maintaining the public thoroughfare benefiting from the separation distance requirement may execute a written waiver with the titleholder of the land where the structure is located. The structure shall be constructed or expanded under such terms and conditions that the parties negotiate. The waiver shall be specific to the construction or expansion project for which it is submitted. The waiver may include specific language to include future projects or expansions.

c. Paragraphs 65.302(1)“a” and “b” shall not apply to small animal truck wash facilities.

d. Exemptions to separation distance requirements from water sources, major water sources, known sinkholes, agricultural drainage wells and designated wetlands and secondary containment. As specified in Iowa Code section 459.310(3), the separation distance required from surface intakes, wellheads or cisterns of agricultural drainage wells, known sinkholes, water sources, major water sources and designated wetlands, specified in Iowa Code section 459.310 and summarized in Tables 6 to 6d located at iowadnr.gov/afo/rules, shall not apply to a farm pond or privately owned lake as defined in Iowa Code section 462A.2 or to an animal truck wash effluent structure constructed with a secondary containment barrier according to subrule 65.108(11). To qualify for this separation distance exemption, the design of the secondary containment barrier shall be filed in accordance with subrule 65.104(5) prior to beginning construction of the animal truck wash facility.

e. Paragraphs 65.302(1) “c” and “d” shall not apply to the replacement of an unformed animal truck wash effluent structure constructed prior to April 28, 2003, with a formed animal truck wash effluent structure. The capacity of a replacement animal truck wash effluent structure shall not exceed the amount required to store animal truck wash effluent for any 18-month period.

65.302(3) *Unformed animal truck wash effluent structures.* Unformed animal truck wash effluent structures shall be separated from water wells as follows:

- a. *Public wells.* 1,000 feet from shallow wells and 400 feet from deep wells;
- b. *Private wells.* 400 feet from both shallow wells and deep wells.

65.302(4) *Formed animal truck wash effluent structures.* Formed animal truck wash effluent structures shall be separated from water wells as follows: for both public wells and private wells, 200 feet from shallow wells and 100 feet from deep wells.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.303(455B,459A) Construction permit application.

65.303(1) An animal truck wash facility required to obtain a construction permit in accordance with the provisions of subrule 65.301(1) shall apply for the construction permit at least 90 days before the date that construction, installation, or modification is scheduled to start.

65.303(2) Application for a construction permit for an animal truck wash facility shall be made on a form provided by the department. The application shall include all of the information necessary to enable the department to determine the potential of the proposed animal truck wash effluent structure to achieve the level of control required of the animal truck wash facility. A construction permit application shall include the following:

- a. The name of the animal truck wash facility and the name of the owner of the animal truck wash facility, including the owner’s mailing address and telephone number.
- b. The name of the contact person for the animal truck wash facility, including the person’s mailing address and telephone number.
- c. The location of the animal truck wash facility.
- d. A statement providing that the application is for any of the following:
 - (1) The construction or expansion of an animal truck wash effluent structure for an existing animal truck wash facility that is not expanding;
 - (2) The construction or expansion of an animal truck wash effluent structure for an existing animal truck wash facility that is expanding;
 - (3) The construction of an animal truck wash effluent structure for a proposed new animal truck wash facility.
- e. An engineering report, construction plans, and specifications prepared by a PE or by an NRCS-qualified staff person. The engineering report must demonstrate that the storage capacity of the animal truck wash effluent structure is equal to or greater than the amount of effluent to be stored for any six-month period, in addition to two feet of freeboard for an unformed animal truck wash effluent structure or one foot of freeboard for a formed animal truck wash effluent structure.
- f. A report on the soil and hydrogeologic information for the site, as described in subrule 65.304(2).
- g. Information including but not limited to maps, drawings and aerial photos that clearly show the location of all the following:
 - (1) The animal truck wash facility and all existing and proposed animal truck wash effluent structures.

(2) Any animal truck wash facility under common ownership or common management and located within 1,250 feet of the animal truck wash facility.

(3) Any public water supply system as defined in Iowa Code section 455B.171 or drinking water well that is located less than the distance from the animal truck wash facility required by subrules 65.302(3) and 65.302(4). Information shall also be provided as to whether the proposed animal truck wash effluent structure will meet all applicable separation distances.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.304(455B,459A) Unformed animal truck wash effluent structure—investigation; design; construction requirements. An unformed animal truck wash effluent structure required to be constructed pursuant to a construction permit issued pursuant to Iowa Code section 459A.205 shall meet the design and construction requirements set forth in this rule.

65.304(1) Drainage tile investigation and removal. Prior to constructing an unformed truck wash effluent basin, the site for the basin shall be investigated for drainage tile lines as provided in this subrule. All applicable records of known drainage tiles shall be examined for the existence of drainage tile lines.

a. Prior to excavation for an unformed manure storage structure, an inspection trench of at least ten inches wide shall be dug around the structure to a depth of at least 6 feet below the original grade and within 25 feet of the proposed outside of the toe of the berm.

b. Drainage tile lines discovered during the tile inspection of an unformed manure storage structure shall be removed and rerouted in the inspection trench or in an area outside of the inspection trench. All tiles within the inspection trench perimeter shall be removed or completely plugged with concrete, grout or similar materials. Drainage tile lines installed at the time of construction to lower the groundwater may remain in place as long as they are outside of the proposed toe of berm.

65.304(2) Soils and hydrogeologic report. An unformed animal truck wash effluent structure required to be constructed pursuant to a construction permit issued pursuant to rule 567—65.301(455B,459,459A) shall meet design standards as required by a soils and hydrogeologic report. The report shall be submitted with the construction permit application as provided in rule 567—65.303(455B,459A). The report shall include all of the following:

a. A description of the steps taken to determine the soils and hydrogeologic conditions at the proposed construction site, a description of the geologic units encountered, and a description of the effects of the soil and groundwater elevation and direction of flow on the construction and operation of the unformed animal truck wash effluent structure.

b. The subsurface soil classification of the site. A subsurface soil classification shall be based on ASTM international designation D 2487-06 or D 2488-06.

c. The results of a soils investigation conducted at a minimum of three locations within the area of the unformed animal truck wash effluent structure reflecting the continuous soil profile existing within the area of the unformed animal truck wash effluent structure. The soils investigation results shall be used in determining subsurface soil characteristics and groundwater elevation and direction of flow at the proposed site. The soils investigation shall be conducted and utilized as follows:

(1) By a qualified person ordinarily engaged in the practice of performing soils investigations.

(2) At locations that reflect the continuous soil profile conditions existing within the area of the proposed unformed animal truck wash effluent structure, including conditions found near the corners and the deepest point of the proposed unformed animal truck wash effluent structure. The soils investigation shall be conducted to a minimum depth of ten feet below the proposed bottom elevation of the unformed animal truck wash effluent structure.

(3) By methods that identify the continuous soil profile and do not result in mixing of soil layers. Soil corings using hollow-stem augers and other suitable methods may be used.

(4) Soil corings may be used to determine current groundwater levels by completing the corings as temporary monitoring wells as provided in subparagraph 65.304(3)“a”(1) and measuring the water levels in these wells no earlier than seven days after installation as provided in subparagraph 65.304(3)“a”(1).

(5) Upon abandonment of soil core holes, all soil core holes, including those developed as temporary water level monitoring wells, shall be plugged with concrete, Portland cement concrete grout, bentonite, or similar materials.

(6) If excavation methods are used in conducting the soils investigation, upon closure these excavations must be filled with suitable materials and adequately compacted to ensure they will not compromise the integrity of the unformed animal truck wash effluent structure liner.

65.304(3) Hydrology.

a. Determination of groundwater table. For purposes of this rule, the groundwater table is the seasonal high-water table determined by a PE, a groundwater professional certified pursuant to 567—Chapter 134, or qualified staff from the department or NRCS. If a construction permit is required, the department must approve the groundwater table determination.

(1) Current groundwater levels shall be measured as provided in this subparagraph for an unformed animal truck wash effluent structure. Three temporary monitoring wells shall be installed. The top of the well screen shall be within five feet of the ground surface. Each well shall be extended to at least two feet below the proposed top of the liner of an unformed animal truck wash effluent structure or to at least two feet below the proposed bottom of the footings of a formed animal truck wash effluent structure. In addition, the wells must be installed as follows:

1. Unformed animal truck wash effluent structure. For an unformed animal truck wash effluent structure, the monitoring wells may be installed in the soil core holes developed as part of conducting the soils investigation required in paragraph 65.304(2) “c.”

2. Formed animal truck wash effluent structure. For a formed animal truck wash effluent structure, at least three temporary monitoring wells shall be installed as close as possible to three corners of the structure, with one of the wells close to the corner of deepest excavation. If the formed animal truck wash effluent structure is circular, the three monitoring wells shall be equally spaced and one well shall be placed at the point of deepest excavation.

(2) The seasonal high-water table shall be determined by considering all relevant data, including the groundwater levels measured in the temporary monitoring wells not earlier than seven days following installation, NRCS soil survey information, soil characteristics such as color and mottling, other existing water table data, and other pertinent information. If a drainage system for artificially lowering the groundwater table will be installed in accordance with the requirements of paragraph 65.304(3) “c,” the level to which the groundwater table will be lowered will be considered to represent the seasonal high-water table.

b. The unformed animal truck wash effluent structure shall be constructed with a minimum separation of two feet between the top of the liner of the unformed animal truck wash effluent structure and the seasonal high-water table.

c. If a drainage tile line around the perimeter of the basin is installed a minimum of two feet below the top of the unformed animal truck wash effluent structure liner to artificially lower the seasonal high-water table, the top of the unformed animal truck wash effluent structure’s liner may be a maximum of four feet below the seasonal high-water table which existed prior to installation of the perimeter tile system. The seasonal high-water table may be artificially lowered by gravity flow tile lines or other similar system. However, the following shall apply:

(1) Except as provided in subparagraph 65.304(3) “c”(2), an animal truck wash facility shall not use a nongravity mechanical system that uses pumping equipment.

(2) If the animal truck wash facility was constructed before July 1, 2005, the operation may continue to use its existing nongravity mechanical system that uses pumping equipment or it may construct a new nongravity mechanical system that uses pumping equipment. However, an animal truck wash facility that expands the area of its animal truck wash facility on or after April 1, 2011, shall not use a nongravity mechanical system that uses pumping equipment.

(3) Drainage tile lines may be installed to artificially lower the seasonal high-water table at an unformed animal truck wash effluent structure, if all of the following conditions are satisfied:

1. A device to allow monitoring of the water in the drainage tile lines and a device to allow shutoff of the flow in the drainage tile lines are installed, if the drainage tile lines do not have a surface outlet accessible on the property where the unformed animal truck wash effluent structure is located.

2. Drainage tile lines are installed horizontally no greater than 25 feet away from the outside toe of the berm of the unformed animal truck wash effluent structure. Drainage tile lines shall be placed in a

vertical trench and encased in granular material which extends upward to the level of the seasonal high-water table which existed prior to installation of the perimeter tile system.

65.304(4) *Liner design and construction.* The liner of an unformed animal truck wash effluent structure shall comply with all of the following:

a. The liner shall comply with any of the following permeability standards:

(1) The liner shall be constructed to have a percolation rate that shall not exceed one-sixteenth inch per day at the design depth of the unformed animal truck wash effluent structure as determined by percolation tests conducted by the PE. If a clay soil liner is used, the liner shall be constructed with a minimum thickness of 12 inches or the minimum thickness necessary to comply with the percolation rate in this subparagraph, whichever is greater.

(2) The liner shall be constructed to have a percolation rate that shall not exceed one-sixteenth inch per day at the design depth of the unformed animal truck wash effluent structure. The design of the liner will specify a moisture content, compaction requirement, and liner thickness that will comply with the maximum allowable percolation requirement and will be based on moisture content and percentage of maximum density as determined by a standard 5-point proctor test performed in accordance with ASTM D698 (Method A), effective date November 11, 1991. The liner thickness will be based on laboratory tests of the compacted material, with a minimum liner thickness of 12 inches. Appropriate field or laboratory testing during construction shall be provided to verify the design requirements are met.

b. If a synthetic liner is used, the liner shall be installed to comply with the percolation rate required in subparagraph 65.304(4)“a”(1).

65.304(5) *Berm erosion inspection and repair.* The owner of an animal truck wash facility using an unformed animal truck wash effluent structure shall inspect the berms of the unformed animal truck wash effluent structure at least semiannually for evidence of erosion. If the inspection reveals erosion that may impact the unformed animal truck wash effluent structure’s structural stability or the integrity of the unformed animal truck wash effluent structure’s liner, the owner shall repair the berms.

65.304(6) *Basins containing confinement manure and animal truck wash effluent.* Basins containing confinement manure and animal truck wash effluent shall meet the confinement construction standards and separation distance requirements provided in Division II of this chapter. The basin design shall ensure adequate storage including two feet of freeboard for an unformed animal truck wash effluent structure or one foot of freeboard for a formed animal truck wash effluent structure. The basin shall contain the annual manure generated from all confinement animals.

65.304(7) *Formed animal truck wash effluent structures.* An animal truck wash facility electing to use a formed animal truck wash effluent structure may submit, in lieu of an engineering report, a construction design statement that meets the requirements in subrule 65.104(3).

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.305(455B,459A) Construction certification.

65.305(1) The owner of an animal truck wash facility who is issued a construction permit for an animal truck wash effluent structure as provided in rule 567—65.301(455B,459,459A) shall submit to the department a construction certification on a form provided by the department from a PE certifying all of the following:

a. The animal truck wash effluent structure was constructed in accordance with the design plans submitted to the department as part of an application for a construction permit pursuant to rule 567—65.303(455B,459A). If the actual construction deviates from the approved design plans, the construction certification shall identify all changes and certify that the changes were consistent with all applicable standards of these rules.

b. The animal truck wash effluent structure was inspected by the PE after completion of construction and before commencement of operation.

65.305(2) A written record of an investigation for drainage tile lines, including the findings of the investigation and actions taken to comply with subrule 65.304(1), shall be submitted as part of the construction certification.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

567—65.306(455B,459A) NMP requirements.

65.306(1) The owner of an animal truck wash facility, other than a small animal truck wash facility, that has an animal truck wash effluent structure shall develop and implement an NMP meeting the requirements of this rule. However, an animal truck wash facility that is part of a confinement feeding operation, in lieu of submitting an NMP, may submit an original MMP and an updated MMP to the department.

65.306(2) A person shall not remove animal truck wash effluent from an animal truck wash facility for which an NMP is required under this rule, unless the department approves an NMP as required in this rule.

65.306(3) The department shall not approve an application for a permit to construct an animal truck wash effluent structure unless the owner of the animal truck wash facility applying for approval submits an NMP together with the application for the construction permit as provided in rule 567—65.301(455B,459,459A).

65.306(4) If a construction permit is required as provided in rule 567—65.301(455B,459,459A), the department shall approve or disapprove the NMP as part of the construction permit application. If a construction permit is not required, the department shall approve or disapprove the NMP within 60 days from the date that the department receives the NMP.

65.306(5) An NMP shall include all of the following:

a. Restrictions on the application of animal truck wash effluent based on all of the following:

(1) A phosphorus index of each field in the NMP, as required in subrule 65.111(12), including the factors used in the calculation. A copy of the NRCS phosphorus index detailed report shall satisfy the requirement to include the factors used in the calculation. In addition, total phosphorus (as P_2O_5) available to be applied from the animal truck wash facility shall be included.

(2) Calculations necessary to determine the land area required for the application of animal truck wash effluent from an animal truck wash facility based on nitrogen or phosphorus use levels (as determined by the phosphorus index) in order to obtain optimum crop yields according to a crop schedule specified in the NMP and according to requirements specified in subrule 67.111(4).

b. Information relating to the application of the animal truck wash effluent, including application methods, the timing of the application, and the location of the land where the application occurs.

c. If the application is on land other than land owned or rented for crop production by the owner of the animal truck wash facility, the plan shall include a copy of each written agreement executed by the owner and the landowner or the person renting the land for crop production where the animal truck wash effluent may be applied. The written agreement shall indicate the number of acres on which the animal truck wash effluent may be applied and the length of the agreement.

d. An estimate of the animal truck wash effluent volume or weight produced by the animal truck wash facility.

e. Information that shows all of the following:

(1) There is adequate storage for animal truck wash effluent, including procedures to ensure proper operation and maintenance of the storage structures.

(2) Surface drainage is diverted from the animal truck wash facility.

(3) Chemicals or other contaminants handled on site are not disposed of in an animal truck wash facility that is not specifically designed to store such chemicals or contaminants.

(4) Equipment used for the land application of animal truck wash effluent must be periodically inspected for leaks.

(5) Appropriate site-specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States.

(6) Protocols for appropriate testing of animal truck wash effluent and soil.

(7) Protocols to land-apply animal truck wash effluent in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the animal truck wash effluent.

(8) Identification of specific records that will be maintained to document the implementation and management of the requirements in this subrule.

65.306(6) Current NMP; recordkeeping; record inspections.

a. Current NMP. The owner of an animal truck wash facility who is required to submit an NMP shall maintain a current NMP at the site of the animal truck wash facility and shall make the current NMP available to the department upon request. If nutrient management practices change, a person required to submit an NMP shall make appropriate changes consistent with this rule. If values other than the standard table values are used for NMP calculations, the source of the values used shall be identified.

b. Recordkeeping. Records shall be maintained by the owner of an animal truck wash facility who is required to submit an NMP. This recorded information shall be maintained for five years following the year of application or for the length of the crop rotation, whichever is greater. Records shall be maintained at the site of the animal truck wash facility, either as a hard copy or electronically, and shall be made available to the department upon request. Records to demonstrate compliance with the NMP shall include requirements of rule 567—65.111(455B,459,459B) and the following:

- (1) Weather conditions at time of application and for 24 hours prior to and following the application.
- (2) For animal truck wash facilities, the soil test analysis must include phosphorus.
- (3) Dates when application equipment was inspected.
- (4) All applicable records identified in paragraph 65.306(5) “e.”

c. Record inspection. The department may inspect an animal truck wash facility at any time during normal working hours and may inspect the NMP and any records required to be maintained.

[ARC 7965C, IAB 5/15/24, effective 6/19/24]

These rules are intended to implement Iowa Code sections 455B.103, 455B.134, and 455B.171 and chapters 459, 459A, and 459B.

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² Effective date of 65.17(13) “e” delayed 70 days by the Administrative Rules Review Committee at its meeting held August 11, 2004.

CHAPTER 66
PESTICIDE APPLICATION TO WATERS
Rescinded **ARC 9203C**, IAB 5/14/25, effective 6/18/25

CHAPTER 67
STANDARDS FOR THE LAND APPLICATION OF SEWAGE SLUDGE

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—67.1(455B) Purpose and scope.

67.1(1) This chapter establishes standards for the land application of sewage sludge generated during the treatment of domestic sewage in a treatment works. This chapter applies to any generator, applicator, or both, and to sewage sludge applied to the land.

a. In areas that are not specifically addressed in this chapter or in 567—Chapter 68, but which are addressed in federal regulations for sewage sludge applied to land at 40 CFR Part 503, the federal regulations shall apply under this rule and are hereby adopted by reference under this chapter.

b. On a case-by-case basis, the department may impose requirements for the land application of sewage sludge in addition to or more stringent than the requirements in this chapter when necessary to protect public health and the environment from any adverse effect of a pollutant in the sewage sludge.

67.1(2) Sewage sludge generators shall ensure that the applicable requirements in this chapter are met when sewage sludge is land applied. If a sewage sludge generator determines that a person being supplied sewage sludge for land application is not complying with applicable requirements of the land application program, the generator shall work with the applicator to obtain compliance with the requirements. If subsequent compliance cannot be achieved, the generator shall not supply additional sewage sludge to the applicator.

67.1(3) Exclusions. In accordance with 40 CFR §503.6, this chapter does not establish requirements for the land application of sludge generated at an industrial facility, hazardous sewage sludge, sewage sludge with a polychlorinated biphenyl (PCB) concentration of 50 mg/kg or higher, incinerator ash, grit and screenings, or drinking water treatment sludge.

[ARC 9206C, IAB 5/14/25, effective 6/18/25]

567—67.2(455B) Sampling and analysis.

67.2(1) Any sewage sludge generator who intends to land apply sewage sludge shall:

a. Sample and analyze the waste to determine whether it meets the criteria for sewage sludge for Class I, II, or III; and

b. Analyze the waste to determine if any sources exist which may contribute significant quantities of potentially hazardous chemicals or other toxic substances. If any are found, the generator shall inform the department of their presence and shall analyze the waste for chemicals or substances in accordance with department guidelines.

67.2(2) Unless rules for specific programs under EPA or department authority provide otherwise, or unless other methods are approved by the department for a specific situation, samples taken and analyses made to document contamination under this chapter shall be conducted in accordance with the methods described in 567—67.9(455B).

[ARC 9206C, IAB 5/14/25, effective 6/18/25]

567—67.3(455B) Land application plan. All sewage sludge generators wishing to land apply sewage sludge shall establish and maintain in writing a long-range plan for land application of sewage sludge. A copy of this plan shall be available at the facility for department inspection.

67.3(1) The long-range plan shall be:

a. Developed for a minimum period of five years;

b. Updated annually; and

c. Designed to ensure that land application can be conducted in accordance with the requirements of this chapter.

67.3(2) At a minimum, the long-term plan shall contain the following information in detail for the next calendar year and in general terms for the following four years:

a. An outline of the sewage sludge sampling schedule and procedures that will be followed;

b. A determination of the amount of land required for proper land application of the sewage sludge;

- c. Identification of the land areas and appropriate land application methods that will be used;
- d. For each land application area, the names of the landowners and the applicators, an identification of any legal arrangements related to the use of an area, and an outline of any restrictions or special conditions that exist regarding the use of an area for the land application of sewage sludge;
- e. An overall land application schedule, including the areas being used, the time of year that land application will occur on each area, and the estimated application rate for each area; and
- f. A determination of all of the following:
 - (1) The types and capacities of the required application equipment, including an outline of how the equipment will be made available and who will be responsible for conducting land application operations;
 - (2) The types and capacities of necessary sludge storage and handling structures;
 - (3) Whether any additional sludge storage or handling facilities are needed; and
 - (4) A timeline to construct or obtain any required additional sludge storage, handling, or application facilities or equipment.

[ARC 9206C, IAB 5/14/25, effective 6/18/25]

567—67.4(455B) Special definitions.

67.4(1) *Definitions in the Iowa Code.* “Sewage sludge” is defined in Iowa Code section 455B.171(34). For the purposes of this chapter, the term includes materials derived from sewage sludge.

67.4(2) *Definitions in the CFR.* The following terms applicable to this chapter are defined in the referenced locations:

- a. 40 CFR §503.9: “dry weight basis,” “food crops,” and “person who prepares sewage sludge.”
- b. 40 CFR §503.11: “agronomic rate,” “annual whole sludge application rate,” “bulk sewage sludge,” and “cumulative pollutant loading rate.”
- c. 40 CFR §503.31: “land with a high potential for public exposure” and “land with a low potential for public exposure.”

67.4(3) The following definitions apply to this chapter:

“Applicator” or “sewage sludge applicator” means any person who applies sewage sludge to the land.

“Class I sewage sludge” means sewage sludge that meets the criteria under 67.6(1).

“Class II sewage sludge” means sewage sludge that meets the criteria under 67.7(1).

“Class III sewage sludge” means any sewage sludge that cannot meet either Class I sewage sludge criteria or Class II sewage sludge criteria.

“Generator” or “sewage sludge generator” means any person who generates sewage sludge, who derives a material from sewage sludge, or both.

[ARC 9206C, IAB 5/14/25, effective 6/18/25]

567—67.5(455B) Permit requirements. Prior to any land application of sewage sludge, a permit must be obtained by the sewage sludge generator in accordance with the following requirements:

67.5(1) The permit for the land application of sewage sludge produced by a wastewater treatment facility that has been issued a construction permit from the department will be issued concurrently and as part of an operation permit or NPDES permit. The issuance process and permit terms will be the same as those specified for NPDES permits in 567—Chapter 60.

67.5(2) The department will review, on a case-by-case basis, requests for a permit to land apply sewage sludge or any material derived from sewage sludge if the sewage sludge is produced outside of the state of Iowa or produced by a wastewater treatment plant that has not been issued a construction permit from the department.

[ARC 9206C, IAB 5/14/25, effective 6/18/25]

567—67.6(455B) Land application requirements for Class I sewage sludge.

67.6(1) *Class I criteria.* Class I sewage sludge is sewage sludge that meets the pollutant concentrations in 67.6(1)“a,” the Class A pathogen reduction requirements in 67.6(1)“b,” and the vector attraction reduction (VAR) requirements in 67.6(1)“c.”

a. *Class I pollutant concentrations.* The concentration of each pollutant in the sewage sludge shall not exceed the concentration for the pollutant in Table 1.

TABLE 1—POLLUTANT CONCENTRATIONS

Pollutant	Monthly average concentration in mg per kg, dry weight basis
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

b. *Class I pathogen requirements (Class A).* The sewage sludge shall comply with 67.6(1)“b”(1) and “b”(2).

(1) The sewage sludge shall comply with one of the following monitoring processes. Compliance with pathogen density shall not be based on an average value. Each individual sample result shall meet the numerical pathogen standards.

1. The fecal coliform density in the sewage sludge shall be less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight basis), or
2. The *Salmonella* sp. bacteria density in the sewage sludge shall be less than three MPN per four grams of total solids (dry weight basis).

(2) The sewage sludge shall comply with one of the following analytical and treatment processes:

1. The sewage sludge temperature shall be maintained at a specific value for a period of time using one of the procedures detailed below.

- When the percent solids of the sewage sludge is 7 percent or higher, the sewage sludge temperature shall be 50 degrees Celsius (°C) or higher; the time period shall be 20 minutes or longer; and the temperature and time period shall be determined using Equation 1, except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

- When the percent solids of the sewage sludge is 7 percent or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the sewage sludge temperature shall be 50°C or higher; the time period shall be 15 seconds or longer; and the temperature and time period shall be determined using Equation 1.

- When the percent solids of the sewage sludge is less than 7 percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period shall be determined using Equation 1.

$$\text{Equation 1: } D = 131,700,000/10^{0.1400t}$$

Where D = time in days; t = temperature in °C

- When the percent solids of the sewage sludge is less than 7 percent, the sewage sludge temperature is 50°C or higher, and the time period is 30 minutes or longer, the temperature and time period shall be determined using Equation 2.

$$\text{Equation 2: } D = 50,070,000/10^{0.1400t}$$

Where D = time in days; t = temperature in °C

2. The sewage sludge shall meet all of the following requirements:

- The sludge pH shall be raised to above 12 and shall remain above 12 for 72 hours;
- The sludge temperature shall be above 52°C for 12 hours or longer during the period that the sludge pH is above 12; and
- At the end of the 72-hour period during which the sludge pH is above 12, the sludge shall be air dried to achieve a percent solids in the sludge greater than 50 percent.

3. Sewage sludge treated in other known processes shall be analyzed prior to pathogen treatment to determine whether it contains enteric viruses and viable helminth ova. After pathogen treatment, the density of enteric viruses in the sewage sludge shall be less than one plaque-forming unit per four grams of total solids (dry weight basis), and the density of viable helminth ova shall be less than one per four grams

of total solids (dry weight basis). Once the process has been demonstrated to achieve the required pathogen reduction, the process must be operated under the same conditions that were used during the demonstration.

4. Sewage sludge treated by unknown processes or by processes operating at conditions less stringent than the operating conditions at which the sewage sludge could qualify as Class I under other alternatives shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses and viable helminth ova. The density of enteric viruses in the sewage sludge shall be less than one plaque-forming unit per four grams of total solids (dry weight basis), and the density of viable helminth ova shall be less than one per four grams of total solids (dry weight basis).

5. Sewage sludge shall be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 67.10(2).

6. Sewage sludge shall be treated in a process that is equivalent to a PFRP, as determined by the department.

c. *Class I VAR requirements.* The sewage sludge shall meet one of the following VAR requirements.

(1) The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.

(2) A portion of the previously anaerobically digested sewage sludge shall be digested anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30°C and 37°C. If, at the end of the 40 days, the volatile solids in the sludge at the beginning of that period are reduced by less than 17 percent, VAR is achieved.

(3) A portion of the previously aerobically digested sewage sludge that has 2 percent solids or less shall be digested aerobically in the laboratory in a bench-scale unit for 30 additional days at 20°C. If, at the end of the 30 days, the volatile solids in the sludge at the beginning of that period is reduced by less than 15 percent, VAR is achieved.

(4) The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams (mg) of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20°C.

(5) Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the sewage sludge temperature shall be higher than 40°C and the average sewage sludge temperature shall be higher than 45°C.

(6) The sewage sludge pH shall be raised to 12 or higher, measured at 25°C, by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.

(7) The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.

(8) The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

(9) Sewage sludge shall be injected below the land surface, and no significant amount of the sludge shall be present on the land surface within one hour after injection.

(10) Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

67.6(2) *Class I management practices.* Class I sewage sludge may be land applied in conformance with the following rules:

a. Class I sewage sludge may be applied to a lawn or a home garden.

b. Class I sewage sludge shall be applied to the land at an annual whole sludge application rate that is equal to or less than the agronomic nitrogen uptake rate, unless otherwise specified by the department.

c. An information sheet shall be provided to a person who receives Class I sewage sludge that is sold or given away in a container for land application. The information sheet shall contain:

(1) The name and address of the sewage sludge generator;

(2) A statement that land application of the sewage sludge is prohibited except in accordance with the instructions on the information sheet; and

(3) The annual application rate for the sewage sludge.

67.6(3) *Class I monitoring frequency.*

a. The pollutants listed in Table 1, the pathogen density requirements, and the VAR requirements shall be monitored at the frequency stated in Table 2.

TABLE 2—MONITORING FREQUENCY

Amount of sewage sludge per 365-day period, dry weight basis	Monitoring Frequency
Greater than 0 but less than 290 metric tons (mt) (or 320 English tons)	once per year
Equal to or greater than 290 but less than 1,500 mt (320 to 1,653 English tons)	once per quarter (4 times per year)
Equal to or greater than 1,500 but less than 15,000 mt (1,653 to 16,535 English tons)	once per 60 days (6 times per year)
Equal to or greater than 15,000 mt (or 16,535 English tons)	once per month (12 times per year)

b. After the sewage sludge has been monitored for two years, the department may reduce the monitoring frequency, but in no case shall the monitoring frequency be less than once per year when sewage sludge is land applied.

67.6(4) *Class I recordkeeping.*

a. Both the generator and bulk sludge applicator of Class I sewage sludge shall develop the following information and retain it for five years:

- (1) The concentration of each pollutant listed in Table 1 in the sewage sludge.
- (2) The following certification statement: “I certify, under penalty of law, that the Class I sewage sludge requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”
- (3) Descriptions of how the PFRP are met, how one of the VAR requirements is met, and how the management practices are met for each site.

b. Treatment works with a design flow rate of 1 million gallons per day (mgd) or greater and treatment works that serve 10,000 people or more shall submit the above information to EPA, using EPA’s NPDES eReporting Tool (NeT), by February 19 of each year for the previous calendar year.

[ARC 9206C, IAB 5/14/25, effective 6/18/25]

567—67.7(455B) Land application requirements for Class II sewage sludge.

67.7(1) *Class II criteria.* Class II sewage sludge is sewage sludge that meets the pollutant concentrations in 67.7(1)“a,” the pathogen reduction requirements in 67.7(1)“b,” and the VAR requirements in 67.7(1)“c.”

a. *Class II pollutant concentrations.* The concentration of any pollutant in Class II sewage sludge shall not exceed the ceiling concentration for the pollutant in Table 3.

TABLE 3—CEILING CONCENTRATIONS

Pollutant	Ceiling concentration in mg per kg, dry weight basis
Arsenic	75
Cadmium	85
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

b. Class II pathogen reduction requirements. Class II sewage sludge shall meet one of the following three alternatives:

(1) Seven samples of the sewage sludge shall be collected at the time of disposal, and the geometric mean of the fecal coliform density shall be less than 2,000,000 MPN per gram of total solids (dry weight basis);

(2) Sewage sludge shall be treated in a PSRP described in 67.10(1); or

(3) Sewage sludge shall be treated in a process that is equivalent to a PSRP, as determined by the department.

c. Class II VAR requirements. The Class II VAR requirements are the same as those for Class I sewage sludge in 67.6(1)“c.”

67.7(2) Class II management practices. Class II sewage sludge may be land applied in conformance with the following:

a. Class II sewage sludge shall not be land applied:

(1) To a lawn or a home garden; or

(2) If it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act, 16 U.S.C. 1533, effective December 27, 2022, or the species’ designated critical habitat.

b. Land application sites accepting Class II sewage sludge not meeting pollutant concentrations listed in Table 1 in 67.6(1) are subject to the cumulative pollutant loading rates listed in Table 4.

TABLE 4—CUMULATIVE POLLUTANT LOADING RATES

Pollutant	Cumulative Pollutant Loading Rate	
	kg per hectare	pounds per acre
Arsenic	41	36
Cadmium	39	34
Copper	1500	1335
Lead	300	267
Mercury	17	15
Nickel	420	373
Selenium	100	89
Zinc	2800	2490

c. Class II sewage sludge shall be land applied:

(1) At an annual whole sludge application rate that is equal to or less than the agronomic nitrogen uptake rate, unless otherwise specified by the department; and

(2) Only to soils classified as acceptable throughout the top five feet of soil profile. Sewage sludge shall not be applied to soils classified as sand, loamy sand, or silt. The acceptability of a soil shall be determined using the USDA soil classifications.

d. Land application sites shall have soil pH maintained above 6.0, unless

(1) Crops prefer soils with lower pH conditions;

(2) The sludge meets the pollution concentrations contained in Table 1; or

(3) The site does not exceed calcium carbonate equivalent levels according to sound farm management practices.

If the soil pH is below 6.0, agricultural lime can be used to increase the pH to an acceptable level.

e. If sewage sludge is applied to land on which the soil loss exceeds the soil loss limits established by the county soil conservation district, the sludge shall be injected on the contour or shall be applied to the surface and mechanically incorporated into soil within 48 hours of application. Sewage sludge shall not be applied to ground having greater than 9 percent slope unless approved by the department.

f. Sewage sludge application on frozen or snow-covered ground should be avoided unless special precautions are taken, such as proven farm management practices to avoid runoff. If application on frozen

or snow-covered ground is necessary, it shall be limited to land areas of less than 5 percent slope unless otherwise approved by the department.

g. In accordance with Table I in 567—paragraph 60.2(2)“c,” sewage sludge shall not be applied to land that is 35 feet or less from an open waterway. If sewage sludge is applied within 200 feet upgradient of a stream, lake, sinkhole, or tile line surface intake, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application unless otherwise approved by the department.

h. If sewage sludge is applied to land subject to flooding more frequently than once in ten years, the sludge shall be injected or shall be applied to the surface and mechanically incorporated into the soil within 48 hours. Information on which land is subject to flooding more frequently than once in ten years is available from the department.

i. Sewage sludge shall not be applied within 200 feet of an occupied residence or any well. Distances may be reduced to a minimum of 35 feet with the written agreement of both the well or residence owner and, in the case of residences, the occupant and an approved farm management plan that addresses soil erodibility, harvest residuals, buffer strips, and other sound farm management practices. The farm management plan shall be approved by the local soil conservation district in accordance with rules implementing Iowa Code sections 161A.42 through 161A.51.

j. After the land application of sewage sludge, all of the following restrictions shall apply:

(1) Food crops with harvested parts that touch the sewage sludge/soil mixture and that are totally above the land surface shall not be harvested for 14 months;

(2) Food crops, feed crops, and fiber crops shall not be harvested for 30 days;

(3) Animals shall not be allowed to graze on the land for 30 days;

(4) Turf grown on land where sewage sludge is applied shall not be harvested for one year after application when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the department;

(5) Public access to land with a high potential for public exposure shall be restricted for one year; and

(6) Public access to land with a low potential for public exposure shall be restricted for 30 days.

k. When required by the director, groundwater monitoring wells and surface monitoring points shall be installed and a monitoring program implemented. Samples must be analyzed by a laboratory that is equipped and competent to perform the required tests. The results shall be forwarded to the department on a stipulated schedule.

l. The sewage sludge generator shall provide information necessary to comply with the requirements of this chapter to the sewage sludge applicator and landowner.

m. The sewage sludge applicator shall provide written notice to the department prior to the initial application of sewage sludge. The notice shall include:

(1) The location, by legal description, of the land application site, and

(2) The name, address, telephone number, and NPDES permit number (if appropriate) of the landowner, sewage sludge generator, and applicator.

67.7(3) Class II monitoring frequency.

a. The pollutants listed in Table 3, the pathogen density requirements, and the VAR requirements shall be monitored at the frequency stated in Table 2.

b. After the Class II sewage sludge has been monitored for two years, the department may reduce the monitoring frequency, but in no case shall the monitoring frequency be less than once per year when sewage sludge is land applied.

67.7(4) Class II recordkeeping.

a. Both the generator and applicator of Class II sewage sludge shall develop all of the following information and retain it for five years:

(1) The concentration of each pollutant listed in Table 3 in the sewage sludge.

(2) The following certification statement: “I certify, under penalty of law, that the Class II sewage sludge requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

(3) A description of how the PSRP and VAR requirements are met.

- (4) A description of how the management practices for Class II sewage sludge are met for each site.
 - (5) The location and surface area of each site.
 - (6) The date and time of sewage sludge application at each site.
 - (7) If subjected to cumulative loading limits, the amount and cumulative amount of each pollutant listed in Table 4 of 67.7(2) “b” in the sewage sludge applied to each site.
 - (8) The amount of sewage sludge (i.e., metric tons) applied to each site.
- b. Treatment works with a design flow rate of 1 mgd or greater and treatment works that serve 10,000 people or more shall submit the above information to EPA, using EPA’s NPDES eReporting Tool (NeT), by February 19 of each year for the previous calendar year. In addition, a supplemental sewage sludge report that includes the land application information listed in 67.7(4) “a”(6) through “a”(9) shall be submitted to the department by the same due date.
- [ARC 9206C, IAB 5/14/25, effective 6/18/25]

567—67.8(455B) Class III sewage sludge.

67.8(1) Class III sewage sludge is any sewage sludge that cannot meet either Class I or Class II sewage sludge criteria.

67.8(2) Class III sewage sludge shall not be utilized for beneficial use for land application as specified in the chapter.

67.8(3) Class III sewage sludge shall be disposed according to 40 CFR Part 503, Subpart C, “Surface Disposal,” or according to 40 CFR Part 503, Subpart E, “Incineration.”

[ARC 9206C, IAB 5/14/25, effective 6/18/25]

567—67.9(455B) Sampling and analytical methods.

67.9(1) General. Representative samples of sewage sludge that are applied to the land shall be collected and analyzed. The methods and calculation procedures listed below shall be used to analyze samples and to calculate the percent of volatile solids reduction.

67.9(2) Enteric viruses. 40 CFR §503.8(b)(1) is adopted by reference.

67.9(3) Fecal coliform.

a. 40 CFR §503.8(b)(2) is adopted by reference.

b. EPA Method 1680: Fecal Coliforms in Sewage Sludge (Biosolids) by Multiple-Tube Fermentation using Lauryl Tryptose Broth (LBT) and EC Medium, EPA-821-R-14-009, September 2014.

c. EPA Method 1681: Fecal Coliforms in Sewage Sludge (Biosolids) by Multiple-Tube Fermentation using A-1 medium, EPA-821-R-06-013, July 2006.

67.9(4) Helminth ova. 40 CFR §503.8(b)(3) is adopted by reference.

67.9(5) Inorganic pollutants.

a. *Metals.* 40 CFR §503.8(b)(4) is adopted by reference.

b. *Nonmetals.* For nonmetals not identified elsewhere in this chapter, methods listed in 567—paragraph 83.5(1) “c.”

67.9(6) Salmonella sp. bacteria.

a. 40 CFR §503.8(b)(5) is adopted by reference.

b. EPA Method 1682: *Salmonella* in Sewage Sludge (Biosolids) by Modified Semisolid Rappaport-Vassiliadis (MSRV) Medium, EPA-821-R-06-14, July 2006.

67.9(7) Specific oxygen uptake rate. 40 CFR §503.8(b)(6) is adopted by reference.

67.9(8) Total, fixed, and volatile solids. 40 CFR §503.8(b)(7) is adopted by reference.

67.9(9) Percent volatile solids reduction calculation. “Environmental Regulations and Technology - Control of Pathogens and Vectors in Sewage Sludge,” EPA-625/R-92/013, July 2003.

[ARC 9206C, IAB 5/14/25, effective 6/18/25]

567—67.10(455B) Pathogen treatment processes.

67.10(1) 40 CFR Part 503, Appendix B, section A, Processes to Significantly Reduce Pathogens (PSRP), is adopted by reference.

67.10(2) 40 CFR Part 503, Appendix B, section B, Processes to Further Reduce Pathogens (PFRP), is adopted by reference.

[ARC 9206C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code section 455B.174.

[Filed 7/29/94, Notice 3/16/94—published 8/17/94, effective 9/21/94]

[Filed 3/8/07, Notice 1/3/07—published 3/28/07, effective 5/2/07]

[Filed ARC 2482C (Notice ARC 2353C, IAB 1/6/16), IAB 4/13/16, effective 5/18/16]

[Filed ARC 6192C (Notice ARC 6038C, IAB 11/17/21), IAB 2/9/22, effective 3/16/22]

[Filed ARC 9206C (Notice ARC 8638C, IAB 1/8/25), IAB 5/14/25, effective 6/18/25]

CHAPTER 68
COMMERCIAL SEPTIC TANK CLEANERS

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—68.1(455B) Purpose, applicability, and definitions.

68.1(1) The purpose of this chapter is to implement Iowa Code sections 455B.172(5), 455B.172(6), and 455B.172A by providing standards for the commercial cleaning and disposal of waste from private sewage disposal systems (PSDSs) and toilet units and wastewater from on-farm food processing operations and by providing licensing requirements and procedures.

68.1(2) Definitions. For purposes of this chapter, the following definitions apply:

“*Cleaning*” means removal of waste from PSDSs and other actions incidental to that removal.

“*Commercial septic tank cleaner*” means a person or firm engaged in the business of cleaning and disposing of waste from PSDSs, including a person or firm that owns and rents or leases portable toilets.

“*Food commodity*” is defined in Iowa Code section 455B.171(8).

“*Holding tank for waste*” is defined in 567—subrule 69.1(2).

“*On-farm processing operation*” is defined in Iowa Code section 455B.171(18). “On-farm processing operation” does not include food commodities processed by a person exclusively for use by the person and members of the person’s household or the person’s nonpaying guests and employees.

“*Tank*” means any container that is placed on a vehicle to transport waste removed from a private waste facility.

“*Toilet unit*” is defined in Iowa Code section 455B.171(37).

“*Vehicle*” means a device used to transport a tank, including a trailer.

“*Waste*” means human or animal excreta, water, scum, sludge, septage, and grease solids from PSDSs or toilet units.

[ARC 9207C, IAB 5/14/25, effective 6/18/25]

567—68.2(455B) Commercial septic tank and toilet unit cleaner licensing requirements and procedures.

68.2(1) *General.* Commercial septic tank and toilet unit cleaners must annually apply for and obtain a license from the department before engaging in the commercial cleaning of and disposal of septage from any PSDS or the commercial cleaning and disposal of wastes from any toilet unit in the state of Iowa. The license period will run from July 1 to June 30 of the following year. Owners of a septic tank may clean their own tank without being licensed if all other requirements of this chapter are met.

68.2(2) *Application for license.* A commercial septic tank or toilet unit cleaner must apply for a license by completing a department form and submitting it to the department with an annual septage disposal management plan (SDMP) and license fee. In the case of a commercial septic tank cleaner that is a corporation, partnership, association, or any other business entity, the entity itself must apply as provided in this rule. The entity shall designate a person with requisite authority to act as its representative when applying for a license. Individuals employed by a commercial septic tank or toilet unit cleaner business are not required to be licensed, but each cleaning unit (vehicle or tank) must display the business license number (except for the year).

68.2(3) *Septage disposal management plan (SDMP).* An applicant must submit an SDMP with a license application using a department form. Applicants must also submit the SDMP to the county board of health in each county where septage is to be land applied.

a. An SDMP shall include:

- (1) A list of vehicles to be registered for use by the licensee.
- (2) The volume of septage expected to be collected from PSDSs or toilet units.
- (3) For disposal to another system, including a publicly owned treatment works (POTW), a different permitted wastewater disposal system (DS), a permitted septage lagoon or septage drying bed, or a permitted sanitary landfill:
 1. The volume of septage or waste to be taken to each system; and

2. A letter of acceptance from the owner of each system where septage or waste is proposed to be disposed.

(4) For septage disposal by land application:

1. The location and area of all sites where septage is to be land applied;
2. The anticipated volume of septage applied to each site;
3. The type of crop to be planted on each site and the date when planting will occur; and
4. The type of land application to be used at each site.

b. Allowance may be made in an SDMP for septage application on the property of the owner of the tank being pumped as long as the disposal standards of this chapter are met.

c. A license will be issued only after department approval of the SDMP. If the SDMP is not approved by the department, it must be modified and resubmitted.

68.2(4) *SDMP alteration.* An amended SDMP must be submitted to the department and the county before septage is land applied to any new property not listed in the existing SDMP, or septage is taken to a system not listed in the SDMP.

68.2(5) *License fees.*

a. *Renewal fees.* The renewal application fee is \$150 per year for the first registered vehicle and \$50 for each additional vehicle. If an applicant intends to land apply any septage during the year, there will be an additional application fee of \$7 per 1,000 gallons of septage to be land applied per year. Land application fees shall be based on the previous year's records.

b. *New license fees.* New license applicants will be charged the following fees:

(1) Applicants who propose to land apply shall pay a prorated \$300 annual fee until the next June 30.

(2) Applicants will be charged fees of \$150 for the first registered vehicle and \$50 for each additional vehicle.

68.2(6) *License renewal.* In order to remain valid, a license must be renewed by June 30 of each year. Renewal applications must meet the requirements of this rule and be received by the department at least 30 days prior to the expiration date.

68.2(7) *Ownership change.* Within 30 days of a change in ownership of any commercial septic tank or toilet unit cleaner, the new owner shall furnish the department with the following information:

- a. Business name and license number;
- b. Name, address, email address, and telephone number of the new owner;
- c. Date of the ownership change; and
- d. Any change in the SDMP.

The license will transfer with the ownership with no additional fee.

68.2(8) *Address change.* Within 30 days of any change in the address or location of a commercial septic tank or toilet unit cleaning business, information regarding such change must be reported to the department.

[ARC 9207C, IAB 5/14/25, effective 6/18/25]

567—68.3(455B) License suspension, revocation and denial.

68.3(1) *Basis for suspension, revocation, and denial.* The department may suspend, revoke, or deny a commercial septic tank or toilet unit cleaner license for any of the following reasons:

- a. A material misstatement of facts in a license application.
- b. Failure to provide the license fee.
- c. Failure to provide and adhere to an approved SDMP.
- d. Failure to satisfy the requirements of this chapter.
- e. Failure to pay any fines assessed under 68.3(2).

68.3(2) *Civil penalties.* The department may assess civil penalties pursuant to Iowa Code section 455B.172.

68.3(3) *Appeal.* A commercial septic tank or toilet unit cleaner may appeal the suspension, revocation, or denial of a license under the provisions of 567—Chapter 7.

68.3(4) *Reinstatement.* In the case of a denial, revocation, or suspension pursuant to 68.3(1) “b” or “e,” the department may immediately reinstate or issue a license after receipt of the requisite fee or fine and confirmation that the commercial septic tank or toilet unit cleaner is fulfilling the requirements of

567—68.4(455B) and 567—68.6(455B). In case of a denial, revocation or suspension pursuant to 68.3(1) “a,” “c,” or “d,” the department may reinstate or issue a license no sooner than 60 days after the action if the department is satisfied that the commercial septic tank or toilet unit cleaner has corrected the deficiency and will comply with department rules in the future.

[ARC 9207C, IAB 5/14/25, effective 6/18/25]

567—68.4(455B) Licensee and county obligations.

68.4(1) Licensee obligations. A licensee shall:

- a. Supervise the removal and disposal of septage from PSDSs or waste from toilet units;
- b. Meet the standards established in this chapter for the cleaning of and disposal of septage from PSDSs or waste from toilet units; and
- c. Record the location of all cleaned PSDSs or toilet units, the method of septage or waste disposal, and the volume of septage or waste disposed of for each trip. Such records shall be maintained for five years and shall be made readily available upon request by an administrative authority.

68.4(2) County obligations. The county boards of health shall enforce the standards and licensing requirements in this chapter and other referenced rules.

[ARC 9207C, IAB 5/14/25, effective 6/18/25]

567—68.5(455B) Application sites and equipment inspections. All land application sites specified on an SDMP shall be inspected annually by a department-approved agent to ensure that the sites meet the requirements for septage disposal and are properly managed. All vehicles, tanks, and related storage and handling facilities for septage shall be inspected annually to ensure compliance with these rules. The department may contract with other entities, such as the county boards of health, to carry out inspections. However, the department shall retain concurrent authority to determine inspection requirements.

[ARC 9207C, IAB 5/14/25, effective 6/18/25]

567—68.6(455B) Standards for commercial cleaning of PSDSs and toilet units.

68.6(1) Vehicles, tanks, and equipment. For all vehicles, tanks, and equipment used in the commercial cleaning of PSDSs and toilet units, the licensee shall:

- a. Prevent the dripping, falling, spilling, leaking, or discharging of septage or waste onto roads, rights-of-way, or other public properties;
- b. Provide the necessary equipment to properly clean PSDSs or toilet units and to sufficiently agitate and disperse solids, sludge, and scum into the liquid for cleaning;
- c. Install pumps and associated piping with watertight connections to prevent leakage;
- d. Ensure that equipment can easily be cleaned and is maintained in an essentially rust-free and sanitary condition;
- e. If septage is to be land applied, provide a mechanism for properly mixing lime with the septage or a means to incorporate or inject the septage; and
- f. Prominently display the license number and name of the commercial septic tank or toilet unit cleaner on the side of all vehicles or tanks in letters and numbers at least three inches high.

68.6(2) Miscellaneous.

- a. Any tanks or equipment used for hauling septage or waste shall not be:
 - (1) Used to haul hazardous or toxic wastes as defined in 567—Chapter 131;
 - (2) Used to haul wastes detrimental to land application or wastewater treatment plants;
 - (3) Used in a manner that would contaminate a potable water supply; or
 - (4) Used in a manner that would endanger the food chain or public health.
- b. A direct connection shall not be made between a potable water source and a tank or equipment on a vehicle.

[ARC 9207C, IAB 5/14/25, effective 6/18/25]

567—68.7(455B) Standards for septage and waste disposal. Septage from PSDSs and on-farm processing operations and waste from toilet units and holding tanks shall be disposed of in accordance with this rule.

68.7(1) Waste from toilet units and holding tanks shall be disposed of by discharge, with owner approval, to a POTW or other department-permitted wastewater disposal system. Land application of wastes from toilet units or holding tanks is prohibited.

68.7(2) Septage from septic tanks or other types of PSDSs that normally discharge effluent for further treatment shall be disposed of by one or more of the following methods:

a. Septage may be discharged, with system owner approval, to any of the following systems:

- (1) To a POTW or other department-permitted wastewater disposal system.
- (2) To permitted septage lagoons or septage drying beds.
- (3) To a permitted sanitary landfill in accordance with 567—Chapters 102 and 103 and the following requirements:

1. Septage shall be stabilized by adding and thoroughly mixing sufficient lime to produce a mixture with a pH of 12.

2. A minimum of 30 minutes of contact time shall be provided after mixing the lime with the septage prior to discharging to the landfill.

b. Septage from PSDSs and on-farm processing operations may be land applied when such applications are conducted in accordance with the following requirements:

(1) Land application rate. The maximum application rate is 30,000 gallons of septage per acre of cropland per 365-day period. The nitrogen application rate shall be no more than is utilized by the crop. A crop capable of using the nitrogen applied must be grown and harvested from the site after application of the maximum annual allocation or, at a minimum, every third year.

(2) Land application site restrictions.

1. Sites shall have soil pH maintained above 6.0 unless crops prefer soils with lower pH conditions. If the soil pH is below 6.0, agricultural lime may be used to increase the pH to an acceptable level. Soil pH shall be measured and reported in the annual SDMP.

2. If application on frozen or snow-covered ground is necessary, it shall be limited to land areas of less than 5 percent slope and application rates of less than 2,500 gallons per acre per day.

3. If septage is land applied to land in a floodplain with a ten-year magnitude, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours. Information on which land is in a floodplain with a ten-year magnitude is available from the department.

4. Septage shall be land applied in accordance with the separation distances in Table I in 567—paragraph 60.2(2)“c.” If septage is land applied within 200 feet upgradient of a stream, lake, sinkhole, or tile line surface intake, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application.

5. Septage shall not be applied to any of the following:

- To a lawn or a home garden;
- To ground that has a slope greater than 9 percent; or
- To land where there is a bedrock layer or seasonal high water table within three feet of the soil surface, as noted in the county USDA soil surveys.

(3) Land application crop harvesting restrictions. After a septage application:

1. Food crops with harvested parts that touch the septage/soil mixture and are totally above ground shall not be harvested for 14 months.

2. Food crops with harvested parts below the land surface shall not be harvested for 38 months.

3. Animal feed, fiber, and those food crops with harvested parts that do not touch the soil surface shall not be harvested for 30 days.

4. Animals shall not be allowed to graze on the land for 30 days.

(4) Land application vector attraction reduction (VAR). One of the following VAR requirements shall be met when septage is land applied:

1. Septage may be injected below the surface of the land. No significant amount of septage shall be present on the land surface within one hour of septage injection.

2. Septage may be incorporated into the soil within six hours after application to or placement on the land.

3. Septage may be stabilized by adding and thoroughly mixing sufficient alkaline material (such as hydrated or quick lime) to produce a mixture with a pH of 12. A minimum of 30 minutes of contact time shall be provided after mixing the alkaline material with the septage prior to land application. Each container of treated septage shall be monitored for compliance by testing two representative samples taken a minimum of 30 minutes apart to verify that the pH remains at 12 or greater for the minimum 30-minute time period.

4. Other stabilization methods may be acceptable if shown to be equivalent to one or more of the methods described in this subparagraph.

(5) Land application records. Persons who land apply septage shall document the following information and retain the records at their residence or business for five years:

1. The location, by either street address or latitude and longitude, of each septage application site;
2. The number of acres and precise application area in each septage application site;
3. The gallons of septage applied to each site for each application;
4. The rate, in gallons per acre, of septage application at each site;
5. The total gallons of septage applied at each site to date for the year;
6. The date and time of septage application at each site; and
7. A description of how the VAR requirements are met (injection, incorporation, or stabilization).

The following certification statement shall be provided with the records when the records are submitted to or requested by the department:

“I certify, under penalty of law, that the pathogen requirements and the vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

[ARC 9207C, IAB 5/14/25, effective 6/18/25]

567—68.8(455B) Standards for disposal of wastewater from on-farm food processing operations. On-farm food processing wastewater shall be disposed of pursuant to Iowa Code section 455B.172A. On-farm food processing operations that meet the requirements for land application in Iowa Code section 455B.172A and 567—68.7(455B) shall not be required to obtain an operation permit as prescribed in 567—60.3(455B).

[ARC 9207C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.172 and 455B.172A.

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CHAPTER 69
PRIVATE SEWAGE DISPOSAL SYSTEMS

[Prior to 7/1/83, Health Dept. Ch 12]
[Prior to 11/19/86, Water, Air and Waste Management[900] Ch 69]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—69.1(455B) General.

69.1(1) *Applicability.* These rules are applicable only to private sewage disposal systems.

69.1(2) *Definitions.*

“Administrative authority” means the department and the local board of health as authorized by Iowa Code section 455B.172 and Iowa Code chapter 137.

“Aerobic treatment unit” means a disposal system employing bacterial action which is maintained by the utilization of air or oxygen and includes the aeration plant and equipment and the method of final effluent disposal.

“Approved” means accepted or acceptable under an applicable specification stated or cited in these rules or accepted by the administrative authority as suitable for the proposed use.

“Area drain” means a drain installed to collect surface or storm water from an open area of a building or property.

“Building drain” means that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of any building and conveys the same to the building sewer.

“Building sewer” means that part of the horizontal piping from the building wall to its connection with the main sewer or the primary treatment portion of a private sewage disposal system conveying the drainage of a building site.

“Chamber system” means a buried structure, typically with a domed or arched top, providing at least a 6-inch height of sidewall soil exposure below the invert of the inlet and creating a covered open space above a buried soil infiltrative surface.

“Conventional,” when used in reference to sewage treatment, means a soil absorption system involving a series of 2- to 3-foot-wide trenches filled with gravel 1 foot deep, containing a 4-inch-diameter rigid pipe or other alternative trench technologies to convey the sewage effluent.

“Distribution box” means a structure designed to accomplish the equal distribution of wastewater to two or more soil absorption trenches.

“Domestic sewage” or *“domestic wastewater”* means the water-carried waste products from residences, public buildings, institutions, or other buildings, including bodily discharges from human beings together with groundwater infiltration and surface water as may be present.

“Drip irrigation” means a form of subsurface soil absorption using shallow pressure distribution with low-pressure drip emitters.

“Drop box” means a structure used to divert wastewater flow into a soil absorption trench. When the trench is filled to a set level, the drop box then allows any additional wastewater not absorbed by that trench to flow to the next drop box or soil absorption trench.

“Dwelling” means any house or place used or intended to be used by humans as a place of residence.

“Expanded polystyrene (EPS) aggregate systems” means cylinders comprised of expanded polystyrene (EPS) synthetic aggregate contained in high-strength polyethylene netting. The cylinders are 12 inches in diameter and are produced both with and without a distribution pipe. Cylinders may be configured in a trench, bed, at-grade and mound applications to obtain the desired width, height and length. Cylinders containing a distribution pipe shall be connected end-to-end with an internal coupling device.

“Fill soil” means clean soil, free of debris or large organic material, which has been mechanically moved onto a site and has been in place for less than one year.

“Foundation drain” means that portion of a building drainage system which is provided to drain groundwater, not including any wastewater, from the outside of the foundation or over or under the basement floor and which is not connected to the building drain.

“Free access filter” means an intermittent sand filter constructed within the natural soil or above the ground surface, with access to the distributor pipes and top of the filter media for maintenance and media replacement.

“Gravel” means stone screened from river sand or quarried and washed free of clay and clay coatings. Concrete aggregate designated as Class II by the department of transportation is acceptable.

“Gravelless pipe system” means a soil absorption system comprised of 10-inch-diameter corrugated plastic pipe, perforated with holes on a 120-degree arc centered on the bottom, wrapped in a sheath of geotextile filter wrap, and installed level in a trench without gravel bedding or cover.

“Grease interceptor” means a watertight device designed to intercept and retain or remove grease and fatty substances. The device may be located inside (grease separator) or outside (grease tank or grease trap) a facility.

“Intermittent sand filter” means a bed of granular materials 24 to 36 inches deep underlain by graded gravel and collecting tile. Wastewater is applied intermittently to the surface of the bed through distribution pipes, and the bed is underdrained to collect and discharge the final effluent. Uniform distribution is normally obtained by dosing so as to utilize the entire surface of the bed. Filters may be designed to provide free access (open filters) or may be buried in the ground (buried filters or subsurface sand filters).

“Lake” means a natural or man-made impoundment of water with more than one acre of water surface area at the high water level.

“Limiting layer” means bedrock, seasonally high groundwater level, or any layer of soil with a stabilized percolation rate exceeding 60 minutes for the water to fall one inch.

“Mound system” means an aboveground soil absorption system used to disperse effluent from septic tanks in cases in which a seasonally high water table, high bedrock conditions, slowly permeable soils, or limited land areas prevent conventional subsurface soil absorption systems.

“Packed bed media filter” means a watertight structure filled with uniformly sized media that is normally placed over an underdrain system. The wastewater is dosed onto the surface of the media through a distribution network and is allowed to percolate through the media to the underdrain system. The underdrain collects the filtrate and discharges the final effluent.

“Percolation test” means a falling water level procedure used to determine the ability of soils to absorb primary treated wastewater. (See Appendix B.)

“Pond” means a natural or man-made impoundment of water with a water surface area of one acre or less at the high water level.

“Pretreated effluent” means septic tank effluent treated through aeration or other methods that, upon laboratory analysis, meets or exceeds a monthly average for biochemical oxygen demand (BOD) of 30 mg/L and total suspended solids (TSS) of 30 mg/L.

“Primary treatment unit” means a unit or system used to separate the floating and settleable solids from the wastewater before the partially treated effluent is discharged for secondary treatment.

“Private sewage disposal system” means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than 16 individuals on a continuing basis, including domestic waste, whether residential or nonresidential, but not including industrial waste of any flow rate except as provided for in 567—68.11(455B). “Private sewage disposal system” includes, but is not limited to, septic tanks, holding tanks for waste, chemical toilets, impervious vault toilets and portable toilets.

“Professional soil analysis” means an alternative to the percolation test which depends upon a knowledgeable person evaluating the soil characteristics, such as color, texture, and structure, in order to determine an equivalent percolation or loading rate. A person performing a professional soil analysis shall demonstrate training and experience in soil morphology, such as testing absorption qualities of soil by the physical examination of the soil’s color, mottling, texture, structure, topography, and hillslope position.

“Qualified sampler,” for the purposes of collecting compliance effluent samples required under NPDES General Permit No. 4, means one of the following persons: a city or county environmental health staff person; an Iowa-certified wastewater treatment operator; or an individual who has received training approved by the department to conduct effluent sampling.

“Roof drain” means a drain installed to receive water collecting on the surface of a roof and discharging into an area or storm drain system.

“Secondary treatment system” means a system which provides biological treatment of the effluent from septic tanks or other primary treatment units to meet minimum effluent standards as required in these rules and NPDES General Permit No.4. Examples include soil absorption systems, media filters, aerobic treatment units, or other systems providing equivalent treatment.

“Septage” means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or from a holding tank, when the system is cleaned or maintained.

“Septic tank” means a watertight structure into which wastewater is discharged for solids separation and digestion (referred to as part of the closed portion of the treatment system).

“Sewage sludge” means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. *“Sewage sludge”* includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum septage, portable toilet pumpings, Type III marine device pumpings as defined in 33 CFR Part 159, and sewage sludge products. *“Sewage sludge”* does not include grit, screenings, or ash generated during the incineration of sewage sludge.

“Stream” means any watercourse listed as a “designated use segment” in rule 567—61.3(455B) which includes any watercourse that maintains flow throughout the year or contains sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community.

“Subsurface sand filter” means a system in which the effluent from the primary treatment unit is discharged into perforated pipes, filtered through a layer of sand, and collected by lower perforated pipes for discharge to the surface or to a subsurface soil absorption system. A subsurface sand filter is an intermittent sand filter that is placed within the ground and provided with a natural topsoil cover over the crown of the distribution pipes.

“Subsurface soil absorption system” means a system of perforated conduits connected to a distribution system, forming a series of subsurface, water-carrying channels into which the primary treated effluent is discharged for direct absorption into the soil (referred to as part of the open portion of the treatment system).

69.1(3) General regulations.

a. Connections to approved sewer system.

(1) No private sewage disposal system shall be installed, repaired, or rehabilitated where a publicly owned treatment works (POTW) is available or where a local ordinance requires connection to a POTW. The POTW may be considered as unavailable when such POTW, or any building or any exterior drainage facility connected thereto, is located more than 200 feet from any proposed building or exterior drainage facility on any lot or premises which abuts and is served by such POTW. Final determination of availability shall be made by the administrative authority.

(2) When a POTW becomes available within 200 feet, any building then served by a private sewage disposal system shall be connected to said POTW within a time frame or under conditions set by the administrative authority.

(3) When a POTW is not available, every building wherein persons reside, congregate, or are employed shall be provided with an approved private sewage disposal system.

(4) If a building is to be connected to an existing private sewage disposal system, that existing system shall meet the standards of these rules and be appropriately sized.

b. Discharge restrictions. It is prohibited to discharge any wastewater from private sewage disposal systems (except as permitted in this chapter) to any ditch, stream, pond, lake, natural or artificial waterway, county drain tile, surface water drain tile, or land drain tile, to the groundwater, or to the surface of the ground. Under no conditions shall effluent from private sewage disposal systems be discharged to any abandoned well, agricultural drainage well or sinkhole. Existing discharges to any of the above-listed locations or structures shall be eliminated by the construction of a system in compliance with the requirements of these rules.

c. Construction or alteration. All private sewage disposal systems constructed or altered after March 18, 2009, shall comply with this chapter. Alteration includes any changes that affect the treatment or

disposal of the waste. Repair of existing components that does not change the treatment or disposal of the waste is exempt. However, the discharge restrictions in paragraph “b” above apply.

d. Abandonment. Private sewage disposal systems that are abandoned shall have the septic tank pumped, the tank lid crushed into the tank, and the tank filled with sand or soil.

69.1(4) Construction permit required. No private sewage disposal system shall be installed or altered as described in paragraph 69.1(3)“c” unless a construction permit issued by the administrative authority has been obtained. The installation shall be in accordance with these rules.

69.1(5) Permit by rule. This chapter is intended to act as a permit by rule for private sewage disposal systems. Activities in compliance with this chapter are permitted by the director for purposes of compliance with sections 455B.183 and 455B.186 of the Code of Iowa.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.2(455B) Time of transfer inspections.

69.2(1) Inspections required. Prior to any transfer of ownership of a building where a person resides, congregates, or is employed that is served by a private sewage disposal system, the sewage disposal system serving the building shall be inspected. In the event that weather or other temporary physical conditions prevent the certified inspection from being conducted, the buyer shall execute and submit a binding agreement with the county board of health to conduct a certified inspection of the private sewage disposal system at the earliest practicable time and to be responsible for any required modifications to the private sewage disposal system as identified by the certified inspection. In the event that all parties agree the existing private sewage disposal system will not pass inspection, the buyer may forego the inspection and execute a binding agreement with the local board of health to install a private sewage disposal system compliant with this rule at a time specified by the administrative authority. The inspection requirement applies to all types of ownership transfers not specifically exempted, including when a seller-financed real estate contract is signed.

a. Inspection exemptions. The following types of real estate transactions are exempt from the inspection requirement. However, the discharge restrictions in paragraph 69.1(3)“b” shall always apply.

(1) A transfer made pursuant to a court order, including but not limited to a transfer under Iowa Code chapter 633 or 633A, the execution of a judgment, the foreclosure of a real estate mortgage pursuant to Iowa Code chapter 654, the forfeiture of a real estate contract under Iowa Code chapter 656, a transfer by a trustee in bankruptcy, a transfer by eminent domain, or a transfer resulting from a decree for specific performance.

(2) A transfer to a mortgagee by a mortgagor or successor in interest who is in default, a transfer by a mortgagee who has acquired real property as a result of a deed in lieu of foreclosure or has acquired real property under Iowa Code chapter 654 or 655A, or a transfer back to a mortgagor exercising a right of first refusal pursuant to Iowa Code section 654.16A.

(3) A transfer by a fiduciary in the course of the administration of a decedent’s estate, guardianship, conservatorship, or trust.

(4) A transfer between joint tenants or tenants in common.

(5) A transfer made to a spouse or to a person in the lineal line of consanguinity of a person making the transfer.

(6) A transfer between spouses resulting from a decree of dissolution of marriage, a decree of legal separation, or a property settlement agreement which is incidental to the decree, including a decree ordered pursuant to Iowa Code chapter 598.

(7) A transfer in which the transferee intends to demolish or raze the building.

(8) A transfer of property with a system that was installed not more than two years prior to the date of the transfer.

(9) A deed arising from a partition proceeding.

(10) A tax sale deed issued by the county treasurer.

(11) A transfer for which consideration is \$500 or less.

(12) A deed between a family corporation, partnership, limited partnership, limited liability partnership, or limited liability company as defined in Iowa Code section 428A.2, subsection 15, and its stockholders, partners, or members for the purpose of transferring real property in an incorporation or a corporate

dissolution or in the organization or dissolution of a partnership, limited partnership, limited liability partnership, or limited liability company under the laws of this state, where the deed is given for no actual consideration other than for shares or for debt securities of the family corporation, partnership, limited partnership, limited liability partnership, or limited liability company.

b. Inspection criteria. If a private sewage disposal system is failing to ensure effective wastewater treatment or is otherwise improperly functioning, the private sewage disposal system shall be renovated to meet current construction standards, as adopted by the department, either by the seller or, by agreement within a reasonable time period as determined by the administrative authority, by the buyer. If the private sewage disposal system is properly treating the wastewater and not creating an unsanitary condition in the environment at the time of inspection, the system is not required to meet current construction standards. However, the discharge restrictions in paragraph 69.1(3)“b” shall always apply.

c. Inspection validity. An inspection is valid for a period of two years for any ownership transfers during that period.

69.2(2) *Certified time of transfer inspectors.* Inspections shall be conducted by an inspector certified by the department. In order to be a certified time of transfer inspector, an individual shall have met the experience requirements, have successfully completed the inspection course and examination, and have been issued a current certificate by the department in accordance with this rule.

a. Experience requirements. In order to be certified by taking the inspection course and examination only, an individual must have at least two years' experience in the operation, installation, inspection, design or maintenance of private sewage disposal systems. Individuals lacking this experience must complete additional coursework before attending the inspection course with testing. The additional courses shall include, but not be limited to, “Onsite Basics 101” and “Alternative Systems” offered by the Onsite Wastewater Training Center of Iowa or courses determined by the department to be equivalent.

b. Examination application. A person wishing to take the examination necessary to become a certified inspector shall complete the Certified Time of Transfer Inspector Application, Form 542-0192. A listing of dates and locations of examinations is available from the department upon request. The application form requires the applicant to indicate pertinent educational background, training and past experience in providing private sewage disposal services. The completed application and the application fee shall be sent to Time of Transfer Inspector Certification, Iowa Department of Natural Resources, 502 E. 9th Street, Des Moines, Iowa 50319-0034. An application for examination must be received by the department at least 30 days prior to the date of the examination.

c. Application evaluation. The director may designate department personnel or an experience review committee to evaluate all applications for examination. A notification of the application review decision will be sent to the applicant prior to the examination date. The applicant shall have the right to dispute the application evaluation.

d. Certification. Applicants who successfully meet the department's requirements will receive a written certification from the department. The department shall maintain a current listing of certified time of transfer inspectors. The list shall be available on the department's Web site and shall be provided to county boards of health and other interested parties.

e. Fees. The following nonrefundable fees apply:

(1) Examination fee. The fee for each examination shall be \$50.

(2) Certification fee. The fee for inspector certification shall be \$75 for each one-half year of a two-year period from the date of issuance of the certification to June 30 of the next even-numbered year.

(3) Certification renewal fee. The fee for certification renewal shall be \$300 for the two-year period.

(4) Penalty fee. Rescinded IAB 7/11/12, effective 8/15/12.

f. Renewal period. All certificates shall expire on June 30 of even-numbered years and must be renewed every two years in order to maintain certification.

g. Renewal rights. Inspectors seeking renewal more than 45 days following expiration of the certificate shall lose the right to renew under the normal renewal process and must retake the inspector class and test to become recertified.

69.2(3) *Continuing education.*

a. CEU requirements. Continuing education units (CEUs) must be earned during each two-year period from April 1 of the even-numbered year until March 30 of the next even-numbered year. A certified inspector must earn 1.2 CEUs or 12 contact hours during each two-year period. Newly certified time of transfer inspectors (previously uncertified) who become certified after April 1 of a two-year period will not be required to earn CEUs until the next two-year period.

b. CEU approval. All activities for which CEU credit will be granted must be approved by an accredited college or university, an issuing agency, or the department and shall be related to private sewage disposal systems.

c. CEU reporting. It is the personal responsibility of the certified inspector to maintain a written record of and to notify the department of the CEUs earned during the period. The CEUs earned during the period shall be shown on the application for renewal.

69.2(4) Certificate renewal.

a. Certification period. All certificates shall expire on June 30 of even-numbered years and must be renewed every two years in order to stay effective.

b. Application for renewal. Renewal applications shall be submitted 60 days before the expiration date of the current certificate. Late applications or incomplete applications may lead to revocation of the certificate. Renewal of certificates will only be granted to inspectors in good standing.

c. CEUs. Only those certified inspectors fulfilling the continuing education requirements before the end of each two-year period (March 31) will be allowed to renew their certificates. The certificates of inspectors not fulfilling the continuing education requirements shall expire on June 30 of the even-numbered year.

d. Renewal fee. A renewal fee in the amount of \$300 must accompany the renewal application in order for the certificate to be renewed. Failure to submit the renewal fee on time may lead to revocation of the certificate.

69.2(5) Obligations of certified inspectors.

a. Certified inspectors shall conduct time of transfer inspections according to this rule.

b. Following an inspection, the inspection form and any attachments shall be provided to the county environmental health department for enforcement of any follow-up mandatory improvements to the system, to the department for record, and to the person ordering the inspection.

69.2(6) Disciplinary action.

a. Reasons for disciplinary action. Disciplinary action may be taken against a certified time of transfer inspector on any of the grounds specified in Iowa Code section 455B.219 and the following more specific grounds.

(1) Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified inspector.

(2) Failure to submit required records of inspection or other reports required under applicable permits or rules of the department, including failure to submit complete records or reports.

(3) Knowingly making any false statement, representation, or certification on any application, record, report or document required to be maintained or submitted under any applicable permit or rule of the department.

(4) Fraud in procuring a certificate.

(5) Professional incompetence.

(6) Knowingly making misleading, deceptive, untrue or fraudulent representations in the practice of the certified inspector's profession or engaging in unethical conduct or practice harmful or detrimental to the public. Proof of actual injury need not be established.

(7) Habitual intoxication or addiction to the use of drugs.

(8) Conviction of a felony related to the profession or occupation of the certified inspector. A copy of the record of conviction or plea of guilty shall be conclusive evidence.

(9) Fraud in representations as to skill or ability.

(10) Use of untruthful or improbable statements in advertisements.

(11) Willful or repeated violations of the provisions of Iowa Code chapter 455B, division III.

b. Disciplinary sanctions. Disciplinary sanctions may include the following:

(1) Revocation of a certificate. Revocation may be permanent without chance of recertification or for a specified period of time.

(2) Partial revocation or suspension. Revocation or suspension of the practice of a particular aspect of the inspection of private sewage disposal systems may be imposed.

(3) Probation. Probation under specified conditions relevant to the specific grounds for disciplinary action may be imposed.

(4) Additional education, training, and examination requirements. Additional education, training, and reexamination may be required as a condition of reinstatement.

(5) Penalties. Civil penalties not to exceed \$1,000 may be assessed for causes identified in paragraph 69.2(6) "a" through the issuance of an administrative order.

c. Procedure.

(1) Initiation of disciplinary action. The department staff shall initiate a disciplinary action by conducting such lawful investigation as is necessary to establish a legal and factual basis for action. Written notice shall be given to a certified inspector against whom disciplinary action is being considered. The notice shall provide the certified inspector with 20 days to present any relevant facts and to indicate the certified inspector's position in the matter.

(2) A certified inspector's failure to communicate facts and positions relevant to the disciplinary investigation by the required date may be considered by the department when determining appropriate disciplinary action.

(3) If an agreement as to appropriate disciplinary action, if any, can be reached between the department and the certified inspector, a written stipulation and settlement shall be entered into. The stipulation and settlement shall recite the basic facts and violations alleged, any facts established by the certified inspector, and the reasons for the particular sanction imposed.

(4) If an agreement as to appropriate disciplinary action cannot be reached, the department may initiate formal disciplinary procedures through the issuance of a letter imposing such disciplinary sanction as the department has deemed appropriate. Service shall be provided by certified mail.

(5) A certified inspector may appeal any disciplinary sanction imposed by the department by filing a notice of appeal with the director within 30 days of receipt of the letter imposing disciplinary sanction. If an appeal is filed by the certified inspector, contested case proceedings shall be initiated by the department in accordance with 567—Chapter 7 and Iowa Code chapter 17A.

(6) Reinstatement of revoked certificates. Upon revocation of a certificate, application for certification may be allowed after two years from the date of revocation unless otherwise specified in accordance with paragraph 69.2(6) "b." Any such applicant must meet all eligibility requirements pursuant to subrule 69.2(2) and successfully complete an examination and be certified in the same manner as a new applicant.

69.2(7) *Procedures for noncompliance with child support order.* Upon receipt of a certification of noncompliance with a child support obligation as provided in Iowa Code section 252J.7, the department will initiate procedures to deny an application for certification or renewal or to suspend a certification in accordance with Iowa Code section 252J.8(4). The department shall issue to the person by restricted, certified mail a notice of its intent to deny or suspend inspector certification based on receipt of a certificate of noncompliance. The suspension or denial shall be effective 30 days after receipt of the notice unless the person provides the department with a withdrawal of the certificate of noncompliance from the child support recovery unit as provided in Iowa Code section 252J.8(4) "c." Pursuant to Iowa Code section 252J.8(4), the person does not have a right to a hearing before the department to contest the denial or suspension action under this subrule but may seek a hearing in district court in accordance with Iowa Code section 252J.9.

69.2(8) *Inspection procedures.* Inspections shall be conducted as follows:

a. Inspection form. The inspection shall be conducted using DNR Form 542-0191, Time of Transfer Inspection Report.

b. Record search. Prior to an inspection, the certified inspector shall contact the administrative authority to obtain any permits, as-built drawings or other information that may be available concerning the system being inspected. Information may also be obtained from service providers or the homeowner. If an

as-built drawing is available, the system inspection shall verify that drawing. If no as-built drawing is available, the inspector shall develop an as-built drawing as part of the inspection.

c. *Septic tank.* At the time of inspection, any septic tank(s) existing as part of the sewage disposal system shall be opened and have the contents pumped out and disposed of according to 567—Chapter 68. In the alternative, the owner may provide evidence of the septic tank's being properly pumped out within three years prior to the inspection by a commercial septic tank cleaner licensed by the department which shall include documentation of the size and condition of the tank and its components at the time of such occurrence. If the septic tank(s) is opened, the condition of the tank and its components shall be documented and included in the final report.

d. *Pumps and pump chambers.* Pump chambers or vaults shall be opened for inspection, and the pump shall be tested to ensure proper operation.

e. *Secondary treatment.* Proof that a secondary treatment system is in place must be provided. This proof may include, but is not limited to:

(1) Opening a distribution box or uncovering a header pipe for a soil absorption system. Existing distribution boxes shall be opened for inspection.

(2) Verification of the existence of a sand filter by locating the vents and discharge pipe.

(3) Locating and opening the lid(s) of an advanced treatment unit.

(4) Absorption fields shall be probed to determine their condition. The condition of the fields shall be noted on the inspection report. The condition of the absorption field may also be determined with a hydraulic loading test.

f. *Discharging systems.* An effluent test shall be performed on any legally discharging private sewage disposal system. The effluent quality shall meet the requirements of NPDES General Permit No. 4 for CBOD5 and TSS. The test results shall be included in the inspection report.

(1) The certified inspector shall report the location of the discharge point of a legally discharging private sewage disposal system and the discharge point's proximity to a perennial stream or drainage tile.

(2) Rescinded IAB 7/11/12, effective 8/15/12.

g. *Packaged treatment units.* An advanced treatment unit, such as an aerobic treatment unit, textile filter, peat filter or fixed activated sludge treatment system, shall be inspected according to the manufacturer's recommendations.

h. *Other systems and system components.* Private sewage disposal systems not mentioned above shall be inspected for code compliance, and an effluent sample shall be taken if applicable. Any components of the private sewage disposal system not mentioned above shall be inspected for proper function. Examples of other components include, but are not limited to, effluent screens, tertiary treatment systems, disinfection devices, alarms, control boxes and timers.

i. *Inspection reports.* Following an inspection, the inspection form and a narrative report describing the condition of the private sewage disposal system at the time of the inspection shall be provided to the county environmental health department, to the department for record, and to the person who ordered the inspection.

The certified inspector shall provide the completed inspection report to the county environmental health office within ten business days of the inspection date.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.3(455B) Site analysis.

69.3(1) Site evaluation. A site evaluation shall be conducted by the administrative authority prior to issuance of a construction permit. Consideration shall be given to, but not be limited to, the impact of the following: topography; drainage ways; terraces; floodplain; percent of land slope; location of property lines; location of easements; buried utilities; existing and proposed tile lines; existing, proposed and abandoned water wells; amount of available area for the installation of the system; evidence of unstable ground; alteration (cutting, filling, compacting) of existing soil profile; and soil characteristics determined from a soil analysis, percolation tests, and soil survey maps if available.

a. *Soil survey reports.* During a site analysis and investigation, maximum use should be made of soil survey reports, which are available from USDA Natural Resources Conservation Service. A general

identification of the percolation potential can be made from soil map units in Iowa. Verification of the soil permeability of the specific site must be performed.

b. Final inspections. All newly constructed private sewage disposal systems shall be inspected by the administrative authority before the system is backfilled or at a time prescribed by the administrative authority. A final as-built drawing shall be made as part of the final inspection.

c. Onsite wastewater tracking system. All pertinent information including, but not limited to, the site address, owner, type, date of installation, and as-built drawing of the private sewage disposal system shall be entered into the department's Web-based onsite wastewater tracking system.

69.3(2) Minimum distances. All private sewage disposal systems shall be located in accordance with the minimum distances shown in Table I.

Table I

Minimum Distance in Feet From	Closed Portion of Treatment System(1)	Open Portion of Treatment System(2)
Private water supply well	50	100
Shallow public water supply well(3)	200	400
Deep public water supply well(4)	100	200
Groundwater heat pump borehole	50	100
Lake or reservoir	50	100
Stream or pond	25	25
Edge of drainage ditch	10	10
Dwelling or other structure	10	10
Property lines (unless a mutual easement is signed and recorded)	10	10
Other type of subsurface treatment system	5	10
Water lines continually under pressure	10	10
Suction water lines	50	100
Foundation drains or subsurface tiles	10	10

(1) Includes septic tanks, aerobic treatment units, fully contained media filters and impervious vault toilets.

(2) Includes subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands, open bottom media filters and waste stabilization ponds.

(3) "Shallow well" means a well located and constructed in such a manner that there is not a continuous layer of low-permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

(4) "Deep well" means a well located and constructed in such a manner that there is a continuous layer of low-permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.4(455B) Requirements when effluent is discharged into surface water. All discharges from private sewage disposal systems which are discharged into, or have the potential to reach, any designated waters of the state or subsurface drainage tile shall be treated in a manner that will conform with the requirements of NPDES General Permit No. 4 issued by the department of natural resources, as referenced in 567—Chapter 64. Prior to the use of any system discharging to designated waters of the state or a subsurface drainage tile, a Notice of Intent to be covered by NPDES General Permit No. 4 shall be submitted to the department. Systems covered by this permit must meet all applicable requirements listed in the permit, including effluent sampling and monitoring.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.5(455B) Requirements when effluent is discharged above the ground surface.

69.5(1) All private sewage disposal systems that discharge above the ground surface shall be annually inspected to ensure proper operation.

69.5(2) Private sewage disposal systems that require a maintenance contract shall be inspected by a manufacturer's certified technician.

69.5(3) Private sewage disposal systems that do not require a maintenance contract shall be visually inspected by a person with knowledge of the system for any malfunction and shall have the septic tank opened, inspected, and pumped if needed. A record of the inspection and any tank pumping shall be maintained and be made available to the administrative authority upon request.

69.5(4) No private sewage disposal system shall discharge to a state-owned natural or artificial lake, an outstanding Iowa water or an outstanding national water as defined in 567—subrule 61.2(2) unless authorized by an individual NPDES permit.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.6(455B) Requirements when effluent is discharged into the soil. No septage or wastewater shall be discharged into the soil except in compliance with the requirements contained in this chapter.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.7(455B) Building sewers.

69.7(1) Location and construction.

a. The types of construction and distances as shown in Table II shall be maintained for the protection of water supplies. The distances shall be considered minimum distances and shall be increased where possible to provide better protection.

Table II

Sewer Construction	Distance in Feet From Well Water Supply	
	Private	Public
1. Schedule 40 plastic pipe (or SDR 26 or stronger) with approved-type joints or cast-iron soil pipe (extra heavy or centrifugally cast) with joints of preformed gaskets.	10	25
2. Sewer pipe installed to remain watertight and root-proof.	50	75

b. Under no circumstances shall a well suction line pass under a building sewer line.

69.7(2) Requirements for building sewers.

a. *Type.* Building sewers used to conduct wastewater from a building to the primary treatment unit of a private sewage disposal system shall be constructed of Schedule 40 plastic pipe (or SDR 26 or stronger) with solvent-weld or bell-and-gasket-type joints or shall be constructed of cast iron with integral bell-and-gasket-type joints.

b. *Size.* Such building sewers shall not be less than 4 inches in diameter.

c. *Grade.* Such building sewers shall be laid to the following minimum grades:

4-inch sewer	12 inches per 100 feet
6-inch sewer	8 inches per 100 feet

69.7(3) Cleanouts.

a. *Spacing.* A cleanout shall be provided where the building sewer leaves the house and at least every 100 feet downstream to allow for rodding.

b. *Change of direction or grade.* An accessible cleanout shall be provided at each change of direction or grade if the change exceeds 45 degrees.

69.7(4) Grease interceptors.

a. *Applicability.* Grease interceptors shall be provided for kitchen flows at restaurants, nursing homes, schools, hospitals and other facilities from which grease can be expected to be discharged.

b. *Installation.* Grease interceptors shall be installed on a separate building sewer serving kitchen flows into which the grease will be discharged. The discharge from the grease interceptor must flow to a properly designed septic tank or to a building sewer and then to the septic tank.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.8(455B) Primary treatment—septic tanks.**69.8(1) General requirements.**

a. Septic tank required. Every private sewage disposal system shall have as a primary treatment unit a septic tank as described in this rule. All wastewater from the facility serviced shall discharge into the septic tank (except as noted in paragraph “d” below).

b. Easements. No septic tank shall be located upon property under ownership different from the ownership of that property or lot upon which the wastewater originates unless easements to that effect are legally recorded and approved by the proper administrative authority.

c. Effluent discharge requirements. All septic tank effluent shall discharge into a secondary treatment system in compliance with this chapter or into another system approved by the administrative authority according to rule 567—69.21(455B).

d. Prohibited wastes. Septic tanks shall not be used for the disposal of chemical wastes or grease in quantities which might be detrimental to the bacterial action in the tank or for the disposal of drainage from roof drains, foundation drains, or area drains.

69.8(2) Capacity.

a. Minimum capacity. The minimum liquid-holding capacity shall be as specified in the following table (capacity may be obtained by using one or more tanks):

Up to and including 3-bedroom homes	1,250 gal.
4-bedroom homes	1,500 gal.
5-bedroom homes	1,750 gal.
6-bedroom homes	2,000 gal.

b. Other domestic waste systems. In the event that an installation serves more than a 6-bedroom home or its equivalent, or serves a facility other than a house and serves the equivalent of fewer than 16 individuals on a continuing basis, approval of septic tank capacity and design must be obtained from the administrative authority. Minimum septic tank liquid-holding capacity shall be two times the estimated daily sewage flow.

c. Determination of flow rates. Residential wastewater flows are based on 150 gallons per bedroom per day. For wastewater flow rates for nonresidential and commercial domestic waste applications serving the equivalent of fewer than 16 individuals on a continuing basis, refer to Appendix A.

d. Minimum depth. The minimum liquid-holding depth in any compartment shall be 40 inches.

e. Maximum depth. The maximum liquid-holding depth for calculating capacity of the tank shall not exceed 6½ feet.

f. Dimensions. The interior length of a septic tank should not be less than 5 feet and shall be at least 1½ times the width (larger length-to-width ratios are preferred). No tank or compartment shall have an inside width of less than 2 feet. The minimum inside diameter of a vertical cylindrical septic tank shall be 5 feet.

69.8(3) Construction details.

a. Fill soil. Any septic tank placed in fill soil shall be placed upon a level, stable base that will not settle.

b. Compartmentalization. Every septic tank shall be divided into two compartments (compartmentalization may be obtained by using more than one tank) as follows:

(1) The capacity of the influent compartment shall not be less than one-half or more than two-thirds of the total tank capacity.

(2) The capacity of the effluent compartment shall not be less than one-third or more than one-half of the total tank capacity.

c. Inlet/outlet. The invert of the inlet pipe shall be a minimum of 2 inches and a maximum of 4 inches higher than the invert of the outlet pipe.

d. Baffles.

(1) Four-inch-diameter Schedule 40 plastic pipe tees shall be used as inlet and outlet baffles. Inlet tees shall extend at least 6 inches above and 8 inches below the liquid level of the tank. The inlet tee shall extend below the liquid level no more than 20 percent of the liquid depth. The outlet tee shall extend above

the liquid level a distance of at least 6 inches and below the liquid level a distance of at least 15 inches but no more than 30 percent of the liquid depth. A minimum 2-inch clearance between the top of the inlet and outlet tees and the bottom of the tank lid shall be provided. A horizontal separation of at least 36 inches shall be provided between the inlet baffle and the outlet baffle in each compartment. Outlet baffles shall be fitted with, or replaced by, an approved effluent screen. All effluent screens shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 46, including appendices, or other equivalent testing as determined by the department. Effluent screens require periodic inspection and cleaning to ensure their continued proper operation.

(2) A horizontal slot 4 inches by 6 inches, or two suitably spaced 4-inch-diameter holes in the tank partition, may be used instead of a tee or baffle. The top of the slot or holes shall be located below the water level a distance of one-third the liquid depth. A ventilation hole or slot, located at least 8 inches above the liquid level, shall be provided in the partition.

e. Access.

(1) Access necessary for adequate inspection, operation, and maintenance must be provided to all parts of septic tanks.

(2) An access opening shall be provided at each end of the tank over the inlet and outlet. These openings shall be at least 18 inches in the smallest dimension.

(3) Watertight risers with a minimum diameter of 18 inches shall be installed to bring the access openings to the ground surface. Risers shall be secured using stainless steel fasteners of sufficient complexity, locking devices, concrete lids of sufficient weight, or another device approved by the administrative authority to deter tampering.

69.8(4) Construction.

a. Materials. Tanks shall be constructed of watertight poured concrete, fiberglass or plastic resistant to corrosion or decay and shall be designed so that the tanks, whether full or empty, will not collapse or rupture when subjected to anticipated earth and hydrostatic pressures. Metal tanks are prohibited.

b. Watertight tanks. Tanks shall be watertight. Prior to approving a tank, the administrative authority may ask for proof that a tank is watertight.

c. Dividers. Tank divider walls and divider wall supports shall be constructed of heavy, durable plastic, fiberglass, concrete or other similar corrosion-resistant materials approved by the administrative authority.

d. Inlet and outlet ports. Inlet and outlet ports of pipe shall be constructed of heavy, durable Schedule 40 PVC plastic sanitary tees or other similar approved corrosion-resistant material.

69.8(5) Wall thickness. Minimum wall thickness for tanks shall conform to applicable IAPMO¹ standards or the following specifications:

Poured concrete	6 inches thick
Poured concrete, reinforced	4 inches thick
Special concrete mix, vibrated and reinforced	2.5 inches thick
Fiberglass or plastic	.25 inches thick

¹International Association of Plumbing and Mechanical Officials

69.8(6) Concrete specifications. Concrete used in precast septic tank construction shall have a maximum water-to-cement ratio of 0.45. Cement content shall be at least 650 pounds per cubic yard. Minimum compressive strength (f_c) shall be 4,000 psi (28 Mpa) at 28 days of age. The use of ASTM C150 Type II cement or the addition of silica fume or Class F fly ash is recommended.

69.8(7) Tank bottoms. Septic tank bottoms shall conform to the specifications set forth in subrule 69.8(5) for septic tank walls, except that special mix concrete shall be at least 3 inches thick.

69.8(8) Tank tops. Concrete or masonry septic tank tops shall be a minimum of 4 inches in thickness and shall be reinforced with $\frac{3}{8}$ -inch reinforcing rods in a 6-inch grid or equivalent. Fiberglass or plastic tank tops shall be a minimum of $\frac{1}{4}$ inch in thickness and shall have reinforcing and be of ribbed construction.

69.8(9) Reinforcing steel placement. The concrete cover for reinforcing bars, mats, or fabric shall not be less than 1 inch.

69.8(10) Bedding. Fiberglass or plastic tanks shall be bedded according to the manufacturer's specifications. Provisions should be made to prevent flotation of the tanks when they are empty.

69.8(11) Connecting pipes.

a. Minimum diameter. The pipes connecting septic tanks installed in series and at least the first 5 feet of pipe on the effluent side of the last tank shall be a minimum of 4-inch-diameter Schedule 40 plastic.

b. Tank connections. All inlet and outlet connections at the septic tanks shall be made by self-sealing gaskets cast into the concrete or formed into the plastic or fiberglass.

c. Joints. All joints in connecting Schedule 40 plastic pipe shall be approved plastic pipe connections such as solvent-welded or compression-type gaskets.

d. Pipe in unstable ground. Schedule 40 plastic pipe shall be used extending across excavations or unstable ground to at least 2 feet beyond the point where the original ground has not been disturbed in septic tank installations. If the excavation spanned is more than 2 feet wide, it must be filled with sand or compacted fill to provide a firm bed for the pipe. The first 12 inches of backfill over the pipe shall be applied in thin layers, using material free from stones, boulders, large frozen chunks of earth or any similar material that would damage or break the pipe.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.9(455B) Secondary treatment—subsurface soil absorption systems. Subsurface soil absorption systems are the best available treatment technology and shall always be used where possible.

69.9(1) General requirements.

a. Locations. All subsurface soil absorption systems shall be located on the property to maximize the vertical separation distance from the bottom of the absorption trench to the seasonal high groundwater level, bedrock, hardpan or other confining layer, but under no circumstances shall this vertical separation be less than 3 feet.

b. Soil evaluation. A percolation test or professional soil analysis is required before any soil absorption system is installed.

(1) Percolation test. The percolation test procedure is outlined in Appendix B.

(2) Alternative analysis. If a professional soil analysis is performed, soil characteristics such as soil content, color, texture, and structure shall be used to determine a loading rate.

(3) Acceptable percolation rate. An area is deemed suitable for conventional soil absorption if the average percolation rate is 60 minutes per inch or less and greater than 1 minute per inch. However, if an alternative soil absorption system is proposed (e.g., mound system), then the percolation test should be extended to determine whether a percolation rate of 120 minutes per inch is achieved.

(4) Confining layer determination. An additional test hole 6 feet in depth or to rock, whichever occurs first, shall be provided in the center of the proposed absorption area to determine the location of groundwater, rock formations or other confining layers. This 6-foot test hole may be augered the same size as the percolation test holes or may be made with a soil probe.

c. Groundwater. If the seasonal high groundwater level is present within 3 feet of the trench bottom final grade and cannot be successfully lowered by subsurface tile drainage, the area shall be classified as unsuitable for the installation of a standard subsurface soil absorption system. The administrative authority shall be consulted to determine an acceptable alternative method of wastewater treatment.

d. Site limitations. In situations where specific location or site characteristics would appear to prohibit installation of a soil absorption system, design modifications which could overcome such limitations may be approved by the administrative authority. Examples of such modifications could be the installation of subsurface drainage, use of shallow or at-grade trenches, drip irrigation, or mound systems or use of pretreated effluent.

e. Prohibited drainage. Roof, foundation and storm drains shall not discharge into or upon subsurface absorption systems. Nothing shall enter the subsurface absorption system which does not first pass through the septic tank.

f. Prohibited construction. There shall be no construction of any kind, including driveways, covering the septic tank, distribution box or absorption field of a private sewage disposal system. Vehicle access should be infrequent, primarily limited to vegetation maintenance.

g. *Driveway crossings.* Connecting lines under driveways shall be constructed of Schedule 40 plastic pipe or equivalent and shall be protected from freezing.

h. *Easements.* No wastewater shall be discharged upon any property under ownership different from the ownership of the property or lot upon which the wastewater originates unless easements to that effect are legally recorded and approved by the administrative authority.

69.9(2) Sizing requirements.

a. *Percolation and soil loading charts.* Table IIIa provides a correlation between percolation rates and soil loading rates. Table IIIb provides soil loading rates based upon soil texture and structure. Table IIIa and Table IIIb shall be used to determine the appropriate soil loading rate. Table IIIc specifies linear feet of lateral trenches required based upon the soil loading rate, wastewater flow rate, and trench width. Table IIId provides a method to determine the size of an absorption bed. Absorption beds (Table IIId) shall not be used except when the lot size limitations preclude the installation of a lateral trench system. Further details concerning limitations of this alternative shall be obtained from the administrative authority before authorization for installation is requested.

b. *Unsuitable absorption.* Conventional subsurface soil absorption trenches shall not be installed in soils that have a percolation rate less than 1 minute per inch or greater than 60 minutes per inch. Plans for an alternative method of wastewater treatment shall be submitted to the administrative authority for approval prior to construction.

Table IIIa
Maximum Soil Application Rates Based Upon Percolation Rates

Percolation Rate (minutes per inch)	Monthly Averages	
	Septic Tank Effluent ⁽¹⁾ BOD ₅ 30 mg/L - 220 mg/L TSS 30 mg/L - 150 mg/L	Pretreated Effluent BOD ₅ ≤ 30 mg/L TSS ≤ 30 mg/L
	(gals/sq ft/day) ⁽²⁾	(gals/sq ft/day)
0 to 5	1.2	1.6
Fine sands	0.5	0.9
6 to 10	0.8 – 0.6	1.2
11 to 29	0.6 – 0.5	0.9
30 to 45	0.5 – 0.4	0.7
46 to 60	0.4 – 0.2	0.5
61 to 120	0.0	0.3
Greater than 120	0.0	0.0

NOTE: "BOD" means biochemical oxygen demand. "TSS" means total suspended solids.

⁽¹⁾ Typical waste strengths for domestic waste. Pretreatment should be considered for waste of higher strength.

⁽²⁾ Percolation rates and soil loading rates do not precisely correlate; therefore, a range is provided.

Table IIIb
**Maximum Soil Loading Rates Based Upon Soil Evaluations in Gallons per Square Foot per Day
(gal/ft²/day) for Septic Tank Effluent. Values in () are for secondary treated effluent.**

Soil Texture	Single Grain	Massive	Structure			Platy	
			Granular, Blocky, or Prismatic			Weak	Moderate to Strong
			Weak	Moderate	Strong		
Coarse sand and gravel	1.2 (1.6)	X	1.2 (1.6)	X	X	1.2 (1.6)	X
Medium sands	0.7 (1.4)	X	0.7 (1.4)	X	X	0.7 (1.4)	X
Fine sands	0.5 (0.9)	X	0.5 (0.9)	X	X	0.5 (0.9)	X

Very fine sands*	0.3 (0.5)	X	0.3 (0.5)	X	X	0.3 (0.5)	X
Sandy loam	X	0.3 (0.5)	0.45 (0.7)	0.6 (1.1)	0.65 (1.2)	0.4 (0.6)	0.3 (0.5)
Loam	X	0.4 (0.6)	0.45 (0.7)	0.5 (0.8)	0.55 (0.8)	0.4 (0.6)	0.3 (0.5)
Silty loam	X	NS	0.4 (0.6)	0.5 (0.8)	0.5 (0.8)	0.3 (0.5)	0.2 (0.3)
Clay loam	X	NS	0.2 (0.3)	0.45 (0.7)	0.45 (0.7)	0.1 (0.2)	0.1 (0.2)
Silty clay loam	X	NS	0.2 (0.3)	0.45 (0.7)	0.45 (0.7)	NS	NS

NOTE: "X" means not found in nature. "NS" means not suitable for soil absorption.

* Flow rates are difficult to determine for some very fine sands; experience may provide better information and flow rates.

Table IIIc
Minimum Length of Absorption Trenches in Feet

	2 bedroom 300 gal.		3 bedroom 450 gal.		4 bedroom 600 gal.		5 bedroom 750 gal.		6 bedroom 900 gal.	
Width of trench in feet	2'	3'	2'	3'	2'	3'	2'	3'	2'	3'
Soil loading rate gal/ft ²										
0.1	Not suitable for soil absorption trenches									
0.2	750	500	1125*	750	1500*	1000*	1875*	1250*	2250*	1500*
0.3	500	333	750	500	1000*	666	1250*	833*	1500*	1000*
0.4	375	250	562	375	750	500	938*	625	1125*	750
0.5	300	200	450	300	600	400	750	500	900*	600
0.6	250	167	375	250	500	333	625	417	750	500
0.7	214	143	321	214	428	286	536	357	643	429
0.8	188	125	281	188	375	250	469	312	562	375
0.9	167	111	250	167	333	222	417	278	500	333
1.0	150	100	225	150	300	200	375	250	450	300
1.1	136	91	205	136	273	182	341	227	409	273
1.2	125	84	188	125	250	167	313	208	375	250

* Requires pressure distribution (pump)

Table IIIId
Alternative Option for Use of Absorption Bed*

Percolation Rate min./inch	Absorption Area/Bedroom sq. ft.	Loading Rate/Day gal./sq. ft.
1 – 5	300	.5
6 – 15	400	.375
16 – 30	600	.25

*Absorption beds may only be used when site space restrictions require and shall not be used when the soil percolation rate exceeds 30 min./inch.

69.9(3) Construction details for all soil absorption trenches.

a. *Depth.* Soil absorption trenches shall not exceed 36 inches in depth unless authorized by the administrative authority, but a shallower trench bottom depth of 18 to 24 inches is recommended. Not less than 6 inches of porous soil shall be provided over the laterals. The minimum separation between trench bottom and groundwater, rock formation or other confining layers shall be 36 inches even if extra rock is used under the pipe.

b. *Length.* No soil absorption trench shall be greater than 100 feet long.

c. *Separation distance.* At least 6 feet of undisturbed soil shall be left between each trench edge on level sites. The steeper the slope of the ground, the greater the separation distance should be. Two feet of separation distance should be added for each 5 percent increase in slope from level.

d. *Grade.* The trench bottom should be constructed level from end to end. On sloping ground, the trench shall follow a uniform land contour to maintain a minimum soil cover of 6 inches and a level trench bottom.

e. *Compaction.* There shall be minimum use or traffic of heavy equipment on the area proposed for soil absorption. In addition, it is prohibited to use heavy equipment on the bottom of the trenches in the absorption area.

f. *Fill soil.* Soil absorption systems shall not be installed in fill soil. Disturbed soils which have stabilized for at least one year shall require a recent percolation test or soil analysis.

g. *Bearing strength.* Soil absorption systems shall be designed to carry loadings to meet AASHTO H-10 standards.

h. *Soil smearing.* Soils with significant clay content should not be worked when wet. If soil moisture causes sidewall smearing, the installation should be discontinued until conditions improve.

69.9(4) Gravel systems.

a. *Gravel.* A minimum of 6 inches of clean, washed river gravel, free of clay and clay coatings, shall be laid below the distribution pipe, and enough gravel shall be used to cover the pipe. This gravel shall be of such a size that 100 percent of the gravel will pass a 2½-inch screen and 100 percent will be retained on a ¾-inch screen. Limestone or crushed rock is not recommended for soil absorption systems; however, if used, it shall meet the following criteria:

(1) Abrasion loss. The percent wear, as determined in accordance with the AASHTO T 96, Grading C, shall not exceed 40 percent.

(2) Freeze and thaw loss. When gravel is subjected to the freezing and thawing test, Iowa DOT Materials Laboratory Test Method 211, Method A, the percentage loss shall not exceed 10 percent.

(3) Absorption. The percent absorption, determined in accordance with Iowa DOT Materials Laboratory Test Method 202, shall not exceed 3 percent.

b. *Trench width.* Soil absorption trenches for gravel systems shall be a minimum of 24 inches and a maximum of 36 inches in width at the bottom of the trench.

c. *Grade.* The distribution pipes shall be laid with a minimum grade of 2 inches per 100 feet of run and a maximum grade of 6 inches per 100 feet of run, with a preference given to the lesser slope.

d. *Pipe.* Distribution pipe shall be PVC rigid plastic meeting ASTM Standard 2729 or other suitable material approved by the administrative authority. The inside diameter shall be not less than 4 inches, with perforations at least ½ inch and no more than ¾ inch in diameter, spaced no more than 40 inches apart. Two rows of perforations shall be provided located 120 degrees apart along the bottom half of the tubing (each 60 degrees up from the bottom centerline). The end of the pipe in each trench shall be sealed with a watertight cap unless, on a level site, a footer is installed connecting the trenches together. Coiled perforated plastic pipe shall not be used.

e. *Gravel cover.* Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, synthetic drainage fabric, or other approved material shall be laid so as to separate the gravel from the soil backfill.

69.9(5) Gravelless pipe systems.

a. *Application.* Gravelless subsurface soil absorption systems may be used as an alternative to conventional 4-inch pipe placed in gravel-filled trenches. However, these systems shall not be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.

b. *Installation.* The manufacturer's specifications and installation procedures shall be adhered to.

c. *Material.* The 10-inch I.D. corrugated polyethylene tubing used in gravelless systems shall meet the requirements of ASTM F667, Standard Specification for Large Diameter Corrugated Polyethylene Tubing.

d. *Perforations.* Two rows of perforations shall be located 120 degrees apart along the bottom half of the tubing (each 60 degrees up from the bottom centerline). Perforations shall be cleanly cut into each inner

corrugation along the length of the tubing and should be staggered so that there is only one hole in each corrugation.

- e. Top marking.* The tubing should be visibly marked to indicate the top of the pipe.
- f. Filter wrap.* All gravelless drainfield pipe shall be encased, at the point of manufacture, with a geotextile filter wrap specific to this purpose.
- g. Trench width.* The trench width for the gravelless system shall be 24 inches.
- h. Length of trench.* The total length of absorption trench for a 10-inch gravelless pipe installation shall be the same as given in Table IIIc for a 2-foot-wide conventional soil absorption trench.

69.9(6) Chamber systems.

- a. Application.* Chamber systems may be used as an alternative to conventional 4-inch pipe placed in gravel-filled trenches. However, chamber systems shall not be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.
- b. Installation.* The manufacturer's specifications and installation procedures shall be adhered to.
- c. Length of trench.* The total length of soil absorption trench for chambers 15 to 22 inches wide shall be the same as given in Table IIIc for a 2-foot-wide conventional soil absorption trench. Chambers 33 inches wide or greater shall be sized as given in Table IIIc for a 3-foot-wide conventional soil absorption trench.
- d. Sidewall.* The chambers shall have at least 6 inches of sidewall effluent soil exposure height below the invert of the inlet.

69.9(7) Expanded polystyrene (EPS) aggregate system.

- a. Application.* EPS aggregate systems may be used as an alternative to conventional 4-inch pipe placed in gravel-filled trenches. However, EPS aggregate systems shall not be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.
- b. Installation.* The manufacturer's specifications and installation procedures shall be adhered to.
- c. Length of trench.* The total length of soil absorption trench for 12-inch EPS aggregate bundles shall be the same as given in Table IIIc for a 2-foot-wide conventional soil absorption trench. Twelve-inch EPS aggregate bundles 33 inches wide or greater shall be sized as given in Table IIIc for a 3-foot-wide conventional soil absorption trench.
- d. Gravel cover.* Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, synthetic drainage fabric, or other approved material shall be laid so as to separate the EPS aggregate from the soil backfill.

69.9(8) Gravity distribution. Dosing is always recommended and preferred to improve distribution, improve treatment and extend the life of the system.

- a.* On a hillside, septic tank effluent may be serially loaded to the soil absorption trenches by drop boxes or overflow piping (rigid sewer pipe). Otherwise, effluent shall be distributed evenly to all trenches by use of a distribution box or commercial distribution regulator approved by the administrative authority.
- b. Design.* When a distribution box is used, it shall be of proper design and installed with separate watertight headers leading from the distribution box to each lateral. Header pipes shall be rigid PVC plastic pipe meeting ASTM Standard 2729 or equivalent.
- c. Height of outlets.* The distribution box shall have outlets at the same level at least 4 inches above the bottom of the box to provide a minimum of 4 inches of water retention in the box.
- d. Baffles.* There shall be a pipe tee or baffle at the inlet to break the water flow.
- e. Unused outlets.* All unused outlet holes in the box shall be securely closed.
- f. Materials.* All distribution boxes shall be constructed of corrosion-resistant rigid plastic materials.
- g. Level outlets.* All outlets of the distribution box shall be made level. A 4-inch cap with an offset hole approximately 2½ inches in diameter shall be installed on each outlet pipe. These caps shall be rotated until all outlets discharge at the same elevation. Equivalent leveling devices may be approved by the county board of health.
- h. Equal length required.* The soil absorption area serviced by each outlet of the distribution box shall be equal.

69.9(9) Dosing systems.

a. Pump systems.

(1) Pump and pit requirements. In the event the effluent from the septic tank outlet cannot be discharged by gravity and the proper lateral depths still maintained, the effluent shall discharge into a watertight pump pit with an inside diameter of not less than 24 inches, equipped with a tight-fitting manhole cover at grade level. The pump shall be of a submersible type of corrosion-resistant material.

(2) Pump setting. The pump shall be installed in the pump pit in a manner that ensures ease of service and protection from frost and settled sludge. The pump shall be set to provide a dosing frequency of approximately four times a day based on the maximum design flow. No onsite electrical connections shall be located in the pump pit. These connections shall be located in an exterior weatherproof box.

(3) Pressure line size. The pressure line from the pump to the point of discharge shall not be smaller than the outlet of the pump it serves.

(4) Drainage. Pressure lines shall be installed to provide total drainage between dosing to prevent freezing or shall be buried below frost level up to the distribution box.

(5) High water alarm. Pump pits shall be equipped with a sensor set to detect if the water level rises above the design high water level when the pump fails. This sensor shall activate an auditory or visual alarm to alert the homeowner that repairs are required.

(6) Discharge point. The effluent shall discharge under pressure into a distribution box or may be distributed by small-diameter pipes throughout the entire absorption field.

b. Dosing siphons. Dosing siphons may also be used. The manufacturer's specifications shall be adhered to for installation. Similar dosing volumes and frequencies are recommended. Dosing siphons require periodic cleaning to ensure their continued proper operation.

c. Filtered pump vaults. A filtered pump vault is a device that is installed in a septic tank and houses a pump and screens effluent until it is pumped. Filtered pump vaults may be used when dosing volume is less than 50 gallons. Filtered pump vaults require periodic inspection and cleaning to ensure their continued proper operation.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.10(455B) Mound systems.

69.10(1) General requirements.

a. Mound systems shall be permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage, and general topography have been considered.

b. Mound systems shall not be utilized on sites subject to flooding with a ten-year or greater frequency.

c. Mound systems shall not be utilized on soils where the high groundwater level, impermeable bedrock or soil strata having a percolation rate exceeding 120 minutes per inch occur within 12 inches of natural grade or where creviced bedrock occurs within 20 inches of natural grade.

d. Mound systems shall be constructed only upon undisturbed naturally occurring soils or where a soil analysis has determined the site is suitable.

e. Mound systems shall be located in accordance with the distances specified in Table I as measured from the outer edge of the sand in the mound.

f. No buildings, driveways or other surface or subsurface obstructions shall be permitted within 50 feet on the down-gradient side of the mound when the mound is constructed on a slope greater than 5 percent. No future construction shall be permitted in this effluent disposal area as long as the mound is in use.

g. Specifications given in these rules for mounds are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design a mound system.

69.10(2) Material for mound fill.

a. The mound shall be constructed using clean, medium-textured sand, sometimes referred to as concrete sand. The sand size shall be such that at least 25 percent by weight shall have a diameter between 2.0 and 0.25 mm; less than 35 percent by weight, a diameter between 0.25 and 0.05 mm; and less than 5 percent by weight, a diameter between 0.05 and 0.002 mm.

b. Rock fragments larger than 1/16 inch (2.0 mm) shall not exceed 15 percent by weight of the material used for mound fill.

69.10(3) Construction details.

a. There shall be a minimum of 3 feet of fill material and undisturbed naturally occurring soils between the bottom of the washed gravel and the highest elevation of the limiting conditions defined in paragraph 69.10(1) "c."

b. Gravel shall meet the requirements specified in paragraph 69.9(4) "a."

c. From 1 to 2 feet of medium-textured sand (depending upon the underlying soil depth, see paragraph 69.10(3) "a") must be placed between the bottom of the gravel and the top of the plowed surface of the naturally occurring soil.

d. Mound systems shall utilize an absorption bed distribution piping design. The bed shall be installed with the long dimension parallel to the land contour. Systems on steep slopes with slowly permeable soils should be narrow to reduce the possibility of toe seepage.

e. Minimum spacing between distribution pipes shall be 4 feet, and a minimum of 3 feet shall be maintained between any trench and the sidewall of the mound.

f. No soil under or up to 50 feet down gradient of the mound may be removed or disturbed except as specified herein.

g. Construction equipment which would cause undesirable compaction of the soil shall be kept off the base area. Construction or plowing shall not be initiated when the soil moisture content is high. If a sample of soil from approximately 9 inches below the surface can be easily rolled into a 1/8- to 1/4-inch-diameter wire 1 1/2 inches long or more, the soil moisture content is too high for construction purposes.

h. Aboveground vegetation shall be closely cut and removed from the ground surface throughout the area to be utilized for the placement of the fill material.

i. The area shall be plowed to a depth of 7 to 8 inches, parallel to the land contour, with the plow throwing the soil up slope to provide a proper interface between the fill and the natural soil. Tree stumps should be cut flush with the surface of the ground, and roots should not be pulled.

j. The base absorption area of the mound is to be calculated based on the results of the percolation rate test or soil analysis as indicated in Table IIIa or IIIb and the flow rate.

k. The area of the fill material shall be sufficient to extend 3 feet beyond the edge of the gravel area before the sides are shaped to at least a 4:1 slope (preferably 5:1).

l. Distribution system.

(1) The distribution pipe shall be rigid plastic pipe, Schedule 40 or 80, with a 1-inch nominal diameter or equivalent design that ensures proper distribution.

(2) The distribution pipe shall be provided with a single row of 1/4-inch perforations in a straight line 30 inches on center along the length of the pipe or an equivalent design that ensures uniform distribution. All joints and connections shall be solvent-cemented.

(3) The distribution pipe shall be placed in the clean, washed gravel (or crushed limestone as described in paragraph 69.9(4) "a"), with holes downward. The gravel shall be a minimum of 9 inches in depth below the pipe and 3 inches in depth above the pipe.

(4) No perforations shall be permitted within 3 inches of the outer ends of any distribution pipe.

(5) The outer ends of all pressure distribution lines shall be turned up, with a long 90-degree elbow or two 45-degree elbows to allow for cleaning. The outer ends will have a screw-on cap and cover. The cover shall be accessible from the ground surface without excavation.

(6) The central pressure manifold should consist of 1 1/2- or 2-inch solid plastic pipe using a tee for connecting the distribution lines or an equivalent design that ensures uniform distribution.

m. Construction should be initiated immediately after preparation of the soil interface by placing all of the sand fill material needed for the mound (to the top of the trench) to a minimum depth of 21 inches above the plowed surface. This depth will permit excavation of the trenches to accommodate the 9 inches of washed gravel or crushed stone necessary for the distribution piping.

n. The absorption trench or trenches shall be hand-excavated to a depth of 9 inches. The bottoms of the trenches shall be level.

o. Nine inches of gravel shall be placed in the trench and leveled. After the distribution pipe is placed, the pipe shall be covered with 3 inches of gravel.

p. The top of the gravel shall be covered with synthetic drainage fabric. Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, or other suitable material may be used with approval of the administrative authority. Plastic or treated building paper shall not be used.

q. After installation of the distribution system, the distribution system shall be pressure-tested before it is covered with gravel. The entire mound is to be covered with topsoil native to the site or of similar characteristics to support vegetation found in the area. The entire mound shall be crowned by providing 12 inches of topsoil on the side slopes, with a minimum of 18 inches of topsoil over the center of the mound. The entire mound shall be seeded, sodded or otherwise provided with a grass cover to ensure stability of the installation.

r. The area surrounding the mound shall be graded to provide for diversion of surface runoff water.

69.10(4) Dosing.

a. Pump dosing shall be required for mound systems.

b. The dosing volume shall be three to ten times the distribution piping network volume, but not more than 25 percent of the design flow shall be applied to the soil in one dose.

c. The dosing pump shall be capable of maintaining a squirt height of 3 feet above the pipe at the outer ends of the distribution lines. All lines shall have an equal squirt height above the pipe to maintain equal distribution.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.11(455B) At-grade systems.

69.11(1) General requirements.

a. At-grade systems shall be permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage, and general topography have been considered.

b. At-grade systems shall not be utilized on sites subject to flooding with a ten-year or greater frequency.

c. At-grade systems shall not be utilized on soils where the high groundwater level, impermeable bedrock or soil strata having a percolation rate exceeding 60 minutes per inch occur within 36 inches of natural grade.

d. At-grade systems shall be constructed only upon undisturbed naturally occurring soils or where a soil analysis has determined the site is suitable.

e. At-grade systems shall be located in accordance with the distances specified in Table I as measured from the outer edge of the gravel in the system.

f. No buildings, driveways or other surface or subsurface obstructions shall be permitted within 25 feet on the down-gradient side of the at-grade system when the at-grade system is constructed on a slope greater than 5 percent. No future construction shall be permitted in this effluent disposal area as long as the at-grade system is in use.

g. Specifications given in these rules for at-grade systems are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design an at-grade system.

69.11(2) Construction details.

a. There shall be a minimum of 3 feet of undisturbed naturally occurring soils between the bottom of the gravel in the at-grade system and the highest elevation of the limiting conditions defined in paragraph 69.11(1)“c.”

b. An at-grade system may be installed up to 12 inches deep.

c. Gravel shall meet the requirements specified in paragraph 69.9(4)“a.” EPS aggregate or chambers are acceptable alternatives to gravel.

d. At-grade systems shall utilize an absorption bed distribution piping design. The bed shall be installed with the long dimension parallel to the land contour. Systems on steep slopes with slowly permeable soils should be narrow to reduce the possibility of toe seepage.

e. No soils under or within 15 feet of any at-grade system may be disturbed. On sloping sites, no soils shall be disturbed within 10 feet uphill of the system and within 15 feet downhill of the system plus an additional 5 feet for every 5 percent slope downhill.

f. Construction equipment which would cause undesirable compaction of the soil shall be kept off the base area. Construction or plowing shall not be initiated when the soil moisture content is high. If a sample of soil from approximately 9 inches below the surface can be easily rolled into a 1/8-inch diameter wire 1 1/2 inches long, the soil moisture content is too high for construction purposes.

g. Aboveground vegetation shall be closely cut and removed from the ground surface throughout the area to be utilized for the placement of the fill material.

h. The area shall be plowed to a minimum depth of 7 to 9 inches, parallel to the land contour, with the plow throwing the soil up slope to provide a proper interface between the fill and the natural soil. Chisel teeth on a backhoe bucket shall be at least as long as the depth of plowing. Tree stumps should be cut flush with the surface of the ground, and roots should not be pulled. All work shall be done from the uphill side of the at-grade system.

i. The gravel bed absorption area of the at-grade system is to be calculated based on the results of the percolation rate test or soil analysis as indicated in Table IIIa or IIIb and the flow rate.

j. One foot of loamy cover material shall be installed over the rock bed. Cover shall extend at least 5 feet from the ends of the rock bed and be sloped to divert surface water. Side slopes shall not be steeper than 4:1. The upper 6 inches of the loamy soil cover must be topsoil borrow. Topsoil borrow must be of a quality that provides a good vegetative cover on the at-grade system.

k. Distribution system.

(1) The distribution pipe shall be rigid plastic pipe, Schedule 40 or 80 with a 1-inch nominal diameter or equivalent design that ensures proper distribution.

(2) The distribution pipe shall be provided with a single row of 1/4-inch perforations in a straight line 30 inches on center along the length of the pipe or an equivalent design that ensures uniform distribution. All joints and connections shall be solvent-cemented.

(3) The distribution pipe shall be placed in the clean, washed gravel (or crushed limestone as described in paragraph 69.9(4) "a"), with holes downward. The gravel shall be a minimum of 10 inches in depth below the pipe and 2 inches in depth above the pipe.

(4) Distribution pipe shall be installed in the center of the gravel bed on slopes less than 1 percent and on the upslope edge at the gravel bed absorption width on slopes 1 percent or greater.

(5) No perforations shall be permitted within 3 inches of the outer ends of any distribution pipe.

(6) The outer ends of all pressure distribution lines shall be turned up, with a long 90-degree elbow or two 45-degree elbows to allow for cleaning. The outer ends will have a screw-on cap and cover. The cover shall be accessible from the ground surface without excavation.

(7) The central pressure manifold should consist of 1 1/2- or 2-inch solid plastic pipe using a tee for connecting the distribution lines or an equivalent design that ensures uniform distribution.

(8) The top of the gravel shall be covered with synthetic drainage fabric. Unbacked, rolled, 3 1/2-inch-thick fiberglass insulation, untreated building paper, or other suitable material may be used with approval of the administrative authority. Plastic or treated building paper shall not be used.

(9) After installation of the distribution system, the distribution system shall be pressure-tested before it is covered with gravel. The entire at-grade system is to be covered with topsoil native to the site or of similar characteristics to support vegetation found in the area. The entire at-grade system shall be crowned by providing 12 inches of topsoil on the side slopes, with a minimum of 18 inches of topsoil over the center of the at-grade system. The entire at-grade system shall be seeded, sodded or otherwise provided with a grass cover to ensure stability of the installation.

(10) The area surrounding the at-grade system shall be graded to provide for diversion of surface runoff water.

69.11(3) Dosing.

a. Pump dosing shall be required for at-grade systems.

b. The dosing volume shall be three to ten times the distribution piping network volume, but not more than 25 percent of the design flow shall be applied to the soil in one dose.

c. The dosing pump shall be capable of maintaining a squirt height of 3 feet above the pipe at the outer ends of the distribution lines. All lines shall have an equal squirt height above the pipe to maintain equal distribution.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.12(455B) Drip irrigation.

69.12(1) General design.

a. *Pretreatment required.* Drip irrigation systems must be preceded by a secondary treatment system discharging a treated, filtered effluent with BOD and TSS values less than 30 mg/L.

b. *Separation from groundwater.* Drip irrigation systems shall have a minimum vertical separation distance to high groundwater level or bedrock of 20 inches.

c. *Maximum hillside slope.* Drip irrigation systems shall not be installed on slopes of more than 25 percent.

d. *Additional specifications.* Specifications given in these rules for drip irrigation are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design a drip irrigation system.

69.12(2) Emitter layout.

a. *Discharge rate.* Systems shall be designed so that emitters discharge approximately 1 gpm at 12 psi or other rates suggested by the manufacturer and approved by the administrative authority.

b. *Grid size.* Drip lines shall be run in parallel lines 2 feet apart. Emitters shall be placed in the drip lines at 2-foot intervals, with emitters offset 1 foot between adjacent lines. Each emitter shall cover 4 square feet of absorption area.

c. *Field size.* The field shall be sized according to the application rate given in Table IV.

d. *Depth of drip lines.* Drip lines shall be laid on the contour, 6 to 12 inches deep, with a maximum line length of 100 feet. Lines may be of unequal length.

e. Interconnection.

(1) All drip lines shall be connected to supply and return headers such that the entire system will automatically drain back to the dosing tank or pump pit upon completion of the pumping cycle. Vacuum breakers shall be positioned at the high point of the supply and return headers.

(2) The dosing tank shall have a high water audio/visual alarm.

Table IV

Length of Drip Line Required per Bedroom

Percolation Rate min./in.	Design Hyd. Loading gpd/sq. ft.	Length of Drip Line feet/bedroom
1 – 5	2.0	40
6 – 15	1.3	60
16 – 30	0.9	90
31 – 45	0.6	150
46 – 60	0.4	200
61 – 90	0.2	400
91 – 120	0.1	800

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.13(455B) Packed bed media filters.

69.13(1) Intermittent sand filters. The general requirements for intermittent sand filters are as follows:

a. *Use.* Intermittent sand filters may be used when the administrative authority determines the site is unacceptable for a soil absorption system.

b. *Location.* Intermittent sand filters shall be located in accordance with the distances specified in Table I.

c. *Sampling port.* The discharge point of the filter shall be accessible for effluent sampling, or a sampling port shall be installed in the discharge line.

d. Effluent sampling. All intermittent sand filters having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

e. Prohibited construction. There shall be no construction, such as buildings or concrete driveways, covering any part of an intermittent sand filter.

69.13(2) Construction.

a. Number. Rescinded IAB 7/11/12, effective 8/15/12.

b. Pipelines. Each bed shall contain a horizontal set of collector lines. The collector lines shall be equivalent to SDR 35 PVC pipe, 10-inch-diameter gravelless drainpipe, EPS aggregate or other suitable materials.

(1) One collector line shall be provided for each 6 feet of width or fraction thereof. A minimum of two collector lines shall be provided.

(2) The collector lines shall be laid to a grade of 1 inch in 10 feet (or 0.5 to 1.0 percent).

(3) Each collector line shall be vented or connected to a common vent. Vents shall extend at least 12 inches above the ground surface with the outlet screened or provided with a perforated cap.

(4) Gravelless drainfield pipe with fiber wrap may be used for the collector lines. If fiber wrap is used, no gravel or pea gravel is required to cover the collector lines and the pipe shall be bedded in filter sand.

(5) If 4-inch plastic pipe with perforations is used for the collector lines, the lines shall be covered as follows:

1. Gravel $\frac{3}{4}$ inch to $2\frac{1}{2}$ inches in size shall be placed around and over the lower collector lines until there is a minimum of 4 inches of gravel over the pipes.

2. The gravel shall be overlaid with a minimum of 3 inches of washed pea gravel $\frac{1}{8}$ -inch to $\frac{3}{8}$ -inch size interfacing with the filter media. A layer of fabric filter may be used in place of the pea gravel. Fabric filters must be 30 by 50 mesh with a percolation rate of at least 5 gal/sq. ft.

(6) A minimum of 24 inches of coarse washed sand shall be placed over the pea gravel or above the gravelless drainfield pipe. The sand shall meet the Iowa DOT standards for concrete sand: 100 percent of the sand shall pass a 9.5 mm screen, 90 to 100 percent shall pass a 4.75 mm screen, 70 to 100 percent shall pass a 2.36 mm screen, 10 to 60 percent shall pass a 600 Tm screen, and 0 to 1.5 percent shall pass a 75 Tm screen.

(7) The discharge pipe that extends from the collection system shall be SDR 35 PVC pipe at a minimum.

69.13(3) Subsurface sand filters.

a. Distribution system and cover.

(1) Gravel base. Six inches of gravel $\frac{3}{4}$ inch to $2\frac{1}{2}$ inches in size shall be placed upon the sand in the bed.

(2) Distribution lines. Distribution lines shall be level and shall be horizontally spaced a maximum of 3 feet apart, center to center. Distribution lines shall be rigid perforated PVC pipe.

(3) Venting. Venting shall be placed on the downstream end of the distribution lines, with each distribution line being vented or connected to a common vent. Vents shall extend at least 12 inches above the ground surface with the outlet screened or provided with a perforated cap.

(4) Gravel cover. Enough gravel shall be carefully placed to cover the distributors.

(5) Separation layer. A layer of material such as unbacked, rolled, $3\frac{1}{2}$ -inch-thick fiberglass insulation, untreated building paper of 40- to 60-pound weight or synthetic drainage fabric shall be placed upon the top of the upper layer of gravel.

(6) Soil cover. A minimum of 12 inches of soil backfill shall be provided over the beds.

(7) Distribution boxes. A distribution box shall be provided for each filter bed where gravity distribution is used. The distribution boxes shall be placed upon undisturbed earth outside the filter bed. Separate watertight lines shall be provided leading from the distribution boxes to each of the distributor lines in the beds.

(8) As an alternative to gravel and rigid PVC pipe, EPS aggregate may be used for the distribution system. The EPS aggregate shall cover the entire surface of the sand filter, and a 3-foot separation between distribution pipes shall be maintained.

(9) Pressure distribution. Pressure dosing is recommended to improve effluent distribution across the surface of the filter. Pressure distribution systems may use conventional rock and PVC pipe, chambers with small-diameter pipe, or EPS aggregate with small-diameter pipe.

b. Sizing of subsurface sand filters.

(1) Gravity flow. For residential systems, subsurface sand filters shall be sized at a rate of 240 square feet of surface area per bedroom.

(2) Siphon-dosed. For residential systems, subsurface sand filters dosed by a dosing siphon shall be sized at a rate of 180 square feet of surface area per bedroom.

(3) Pressure-dosed. For residential systems, subsurface sand filters dosed by a pump shall be sized at a rate of 150 square feet of surface area per bedroom.

(4) Nonhousehold. Effluent application rates for commercial systems treating domestic waste shall not exceed the following:

1. 1.0 gallon/square feet/day for intermittent sand filters.

2. The total surface area for any subsurface sand filter system shall not be less than 200 square feet.

69.13(4) *Free access sand filters.*

a. Pretreatment required. These systems must be preceded by a secondary treatment system discharging a treated effluent with BOD and TSS values less than 30 mg/L.

b. Description. Media characteristics and underdrain systems for free access filters are similar to those for subsurface filters. Dosing of the filter should provide uniform distribution across the entire surface of the bed. Dosing frequency is usually greater than four times per day. For coarser media (greater than 0.5 mm), a dosing frequency greater than six times per day is desirable. Higher acceptable loadings on these filters as compared to subsurface filters relate primarily to the accessibility of the filter surface for maintenance. Gravel is not used on top of the sand media, and the distribution pipes are exposed above the surface.

c. Distribution. Distribution to the filter may be by perforated pipe laid on the surface, by pipelines discharging to splash plates located at the center or corners of the filter, or by spray distributors. Care must be taken to ensure that lines discharging directly to the filter surface do not erode the sand surface. The use of curbs around the splash plates or large stones placed around the periphery of the plates will reduce the scour. A layer of washed pea gravel placed over the filter media may also be employed to avoid surface erosion. This practice will create maintenance difficulties, however, when it is time to rake or remove a portion of the media surface.

d. Covers. Free access filters shall be covered to protect against severe weather conditions and to avoid encroachment of weeds or animals. The cover also serves to reduce odors. Covers may be constructed of treated wooden planks, galvanized metal, or other suitable material. Screens or hardware cloth mounted on wooden frames may also serve to protect filter surfaces. Where weather conditions dictate, covers should be insulated. A space of 12 to 24 inches should be allowed between the insulated cover and sand surface. Free access filters may not be buried by soil or sod.

e. Loading. The hydraulic loading for free access sand filters shall be 5.0 gpd/sq. ft.

69.13(5) *Dosing.* Dosing for sand filters is strongly advised. Without dosing, the entire area of the sand filter is never effectively used. Dosing not only improves treatment effectiveness but also decreases the chance of premature failure.

a. Pumps. A pump shall be installed when adequate elevation is not available for the system to operate by gravity.

(1) The pump shall be of corrosion-resistant material.

(2) The pump shall be installed in a watertight pit.

(3) The dosing system shall be designed to flood the entire filter during the dosing cycle. A dosing frequency of greater than two times per day is recommended.

(4) A high water alarm shall be installed.

b. Dosing siphons. When a dosing siphon is used where elevations permit, such siphon shall be installed as follows:

(1) Dosing siphons shall be installed between the septic tank and the sand filter bed.

(2) Dosing siphons shall be installed with strict adherence to the manufacturer's instructions.

c. *Dosing tanks.* The dosing tank shall be of such size that the siphon will distribute effluent over the entire filter during the dosing cycle. Smaller, more frequent doses are recommended.

d. *Effluent sampling.* A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line. All free access sand filters having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

69.13(6) *Peat moss biofilter systems.* General requirements for individual peat moss biofilter systems are as follows:

a. *Use.* Peat moss biofilter systems may be used when the administrative authority determines the site is unacceptable for a soil absorption system or an intermittent sand filter.

b. *Certification.* All peat moss biofilter systems shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as determined by the department.

c. *Installation and operation.* All peat moss biofilter systems shall be preceded by a septic tank and installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the administrative authority. The septic tank shall be sized as specified in paragraph 69.8(2) "a" or larger if recommended by the manufacturer. Sizing of the system should be based on the manufacturer's specifications.

d. *Maintenance contract.* Prior to installation, a maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician. A maintenance contract is required for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician. Manufacturers are responsible for ensuring that an adequate number of certified technicians are available to service all peat moss biofilters at the specified intervals. The certified technician shall perform the required maintenance and reporting to the owner and to the administrative authority. The certified technician shall also report any discontinuance of maintenance of the peat moss biofilter system to the administrative authority. Peat moss biofilter systems shall be inspected at least once annually by the certified technician. A copy of the maintenance contract shall be on file in the office of the administrative authority.

e. *Effluent sampling.* The discharge point of the filter shall be accessible for effluent sampling, or a sampling port shall be installed in the discharge line. All peat moss biofilter systems that have an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

69.13(7) *Recirculating textile filter systems.* General requirements for recirculating textile filter systems are as follows:

a. *Use.* Recirculating textile filter systems may be used when the administrative authority determines the site is unacceptable for a soil absorption system or an intermittent sand filter.

b. *Certification.* All recirculating textile filter systems shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as determined by the department.

c. *Design.* Recirculating textile filter systems shall be designed to prevent the passage of untreated waste during an equipment malfunction or power outage.

d. *Installation and operation.* Recirculating textile filter systems shall be preceded by a septic tank and installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the administrative authority. The septic tank shall be sized as specified in paragraph 69.8(2) "a" or larger if recommended by the manufacturer. Sizing of the system should be based on the manufacturer's specifications.

e. *Maintenance contract.* Prior to installation, a maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician. A maintenance contract is required for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician. Manufacturers are responsible for ensuring that an adequate number of certified technicians are available to service all recirculating textile filters at the specified intervals. The certified technician shall perform the required maintenance and reporting to the owner and to the administrative authority. The certified technician shall also report any discontinuance of

maintenance of the system to the administrative authority. Recirculating textile filter systems shall be inspected at least once annually by the certified technician. A copy of the maintenance contract shall be on file in the office of the administrative authority.

f. Effluent sampling. The discharge point of the filter shall be accessible for effluent sampling, or a sampling port shall be installed in the discharge line. All recirculating textile filter systems that have an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.14(455B) Aerobic treatment units. General requirements for aerobic treatment units are as follows:

69.14(1) Use. Aerobic treatment units may be used only when the administrative authority determines that the site is unacceptable for a soil absorption system or an intermittent sand filter. Because of the higher maintenance requirements of aerobic treatment units, preference should be given to packed bed media filters, where conditions allow.

69.14(2) Certification. All aerobic treatment units shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as determined by the department.

69.14(3) Installation and operation. All aerobic treatment units shall be installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the administrative authority. The aerobic treatment units shall have a minimum treatment capacity of 150 gallons per bedroom per day or 500 gallons, whichever is greater.

69.14(4) Pre-tank required. All aerobic treatment units shall be preceded by a septic or trash tank with a minimum capacity of 500 gallons. The trash tank may be a single-compartment tank. A trash tank built in as part of the aerobic treatment unit's design satisfies this requirement.

69.14(5) Effluent treatment. The effluent from aerobic treatment units shall receive additional treatment through the use of intermittent sand filters or soil absorption systems of a magnitude prescribed in subrule 69.9(2) for pretreated effluent.

69.14(6) Maintenance contract. Prior to installation, a maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician. A maintenance contract is required for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician. Manufacturers are responsible for ensuring that an adequate number of certified technicians are available to service all aerobic treatment units at the specified intervals. Aerobic treatment units shall be inspected for proper operation at least twice a year at six-month intervals by the certified technician.

69.14(7) Effluent sampling. The discharge point of the aerobic treatment unit system shall be accessible for effluent sampling, or a sampling port shall be installed in the discharge line. All aerobic treatment unit systems that have an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.15(455B) Constructed wetlands.

69.15(1) General site design.

a. Application. Constructed wetlands shall only be used where soil percolation rates at the site exceed 120 minutes per inch. Because of the higher maintenance requirements of constructed wetland systems, preference should be given to packed bed media filters, where conditions allow.

b. Effluent treatment. The effluent from a constructed wetland shall receive additional treatment through the use of intermittent sand filters of a magnitude prescribed in subrule 69.9(2) for pretreated effluent.

c. Effluent sampling. All constructed wetland systems having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

d. Additional specifications. Specifications given in this rule for constructed wetlands are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and

research. Other design information beyond the scope of this rule may be necessary to properly design a constructed wetland system.

69.15(2) Wetland design.

a. Depth. The wetland shall be of a subsurface flow construction with a rock depth of 18 inches and a liquid depth of 12 inches.

b. Materials. Substrate shall be washed river gravel with a diameter of $\frac{3}{4}$ inch to $2\frac{1}{2}$ inches. If crushed quarried stone is used, it must meet the criteria listed in paragraph 69.9(4) "a."

c. Sizing and configuration. Detention time shall be a minimum of seven days.

(1) *Dimensions.* Detention time may be accomplished with trenches 16 to 18 inches deep (12 inches of liquid), 3 feet wide, with 100 feet of length per bedroom. Detention time may also be done with beds 16 to 18 inches deep, with at least 300 square feet of surface area per bedroom. The bottom of each trench or bed must be level within $\pm\frac{1}{2}$ inch.

(2) *Configuration.* Multiple trenches or beds in series should be used. Beds or trenches in series may be stepped down in elevation to fit a hillside application. If the system is on one elevation, it should still be divided into units by earthen berms at about 50 and 75 percent of the total length.

(3) *Unit connections.* Each subunit shall be connected to the next subunit with an overflow pipe (rigid sewer pipe) that maintains the water level in the first section. Protection from freezing may be necessary.

d. Liner. Wetlands shall be lined with a synthetic PVC or PE plastic liner 20 to 30 mils thick.

e. Inlet pipe. Effluent shall enter the wetland by a 4-inch pipe sealed into the liner. With beds, a header pipe shall be installed along the inlet side to distribute the waste.

f. Protective berms. Wetland system sites shall be bermed to prevent surface water from entering the trenches or beds.

69.15(3) Vegetation.

a. Setting plants. Vegetation shall be established on the wetlands at the time of construction. Twelve inches of rock shall be placed in each unit, the plants set, and then the final 4 to 6 inches of rock placed.

b. Plant species. Only indigenous plant species, preferably collected within a 100-mile radius of the site, shall be set. Multiple species in each system are recommended. Preferred species include, but are not limited to:

- (1) *Typha latifolia* – common cattail.
- (2) *Typha angustifolia* – narrow leaf cattail.
- (3) *Scirpus spp.* – bullrush.
- (4) *Phragmites communis* – reed.

c. Plant establishment. Transplantation is the recommended method of vegetation establishment. For transplanting, the propagule should be transplanted, at a minimum, on a 2-foot grid. The transplants should be fertilized, preferably with a controlled-release fertilizer such as Osmocote 18-5-11 for fall and winter planting, 18-6-12 for spring planting, and 19-6-12 for summer planting. Trenches or beds should be filled with fresh water immediately.

d. Plant management. In the late fall, the vegetation shall be mowed and the detritus left on the wetland surface as a temperature mulch. In the early spring, the mulch shall be removed and disposed of to allow for adequate bed aeration.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.16(455B) Waste stabilization ponds.

69.16(1) General requirements. Waste stabilization ponds shall only be used for nonresidential applications and shall be designed by an Iowa-licensed engineer. Waste stabilization ponds may be used if designed and constructed in accordance with the following criteria and provided the effluent is discharged in accordance with the requirements of the NPDES general permit listed in rule 567—69.4(455B). A septic tank sized according to rule 567—69.8(455B) shall precede a waste stabilization pond.

69.16(2) Location. Waste stabilization ponds must meet the following separation distances:

a. 1,000 feet from the nearest inhabitable residence, commercial building, or other inhabitable structure. If the inhabitable or commercial building is the property of the owner of the proposed treatment facility or there is written agreement with the owner of the building, this separation criterion shall not

apply. Any such written agreement shall be filed with the county recorder and recorded for abstract of title purposes, and a copy submitted to the department.

- b. 1,000 feet from public shallow wells.
- c. 400 feet from public deep wells.
- d. 400 feet from private wells.
- e. 400 feet from lakes and public impoundments.
- f. 25 feet from property lines and rights-of-way.

69.16(3) Size.

- a. *Dimensions.* Ponds shall have a length not exceeding three times the width.
- b. *Capacity.* When domestic sewage from a septic tank is to be discharged to a waste stabilization pond, the capacity of the pond shall be equivalent to 180 times the average daily design flow.
- c. *Depth.* The wastewater depth for a waste stabilization pond shall be 3 feet to 5 feet and shall be uniform.
- d. *Freeboard.* A minimum freeboard of 2 feet shall be maintained at all times.

69.16(4) Embankments.

- a. *Seal.* Embankments shall be constructed of impermeable materials and shall be compacted. The bottom of the waste stabilization pond shall be cleared and leveled to the required elevation and shall be lined with an impermeable natural or man-made material. Seepage loss through the sides and bottom shall be less than 1/16 inch per day.
- b. *Slopes.* The ratio of inside embankment slopes shall be 3 horizontal to 1 vertical. The outside embankment slope ratio shall be at least 3:1.
- c. *Berm top.* Berm tops shall be at least 4 feet wide.
- d. *Cover.* Embankments shall be seeded from the outside toe to the inside high water line. From the high water line down the embankment diagonally, about 5 feet shall be ripped for erosion and vegetation control.

69.16(5) Inlet and outlet structures.

- a. *Inlet.* The inlet shall be placed no higher than 12 inches above the bottom of the pond. It shall discharge near the middle of the pond at a point opposite the overflow structure and onto a concrete splash plate at least 2 feet square.
- b. *Outlet.* The outlet pipe shall withdraw water from a submerged depth of at least 1 foot. The intake for the outlet pipe shall be 3 to 5 feet from the embankment.
- c. *Separation.* The inlet and outlet should be separated to the maximum extent possible, ideally by a berm or baffle constructed in the lagoon to prevent short-circuiting.

69.16(6) Drainage. All surface water shall be diverted away from the waste stabilization pond.

69.16(7) Effluent sampling. All waste stabilization ponds having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

69.16(8) Maintenance.

- a. *Fencing.* All waste stabilization ponds are to be fenced adequately to prevent entrance of livestock and to discourage entrance by people into the area. Signs shall be posted warning of possible health and safety hazards.
- b. *Vegetation.* Vegetation on the top and sides of the berm shall be mowed and the length maintained. No trees shall be allowed to become established.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.17(455B) Requirements for impervious vault toilets. All impervious vault toilets shall comply with the following requirements:

69.17(1) Location. Impervious vault toilets shall be located in accordance with the distances given in Table I in rule 567—69.3(455B) for the closed portion of the treatment system.

69.17(2) Construction. The vault shall be constructed of reinforced, impervious concrete at least 4 inches thick. The superstructure including floor slab, seat, seat cover, riser and building shall comply with good design and construction practices to provide permanent, safe, sanitary facilities. The vault shall be provided with a cleanout opening fitted with a fly-tight cover.

69.17(3) Wastewater disposal. Wastewater from impervious vault toilets shall be disposed of at a public sewage treatment facility.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.18(455B) Requirements for portable toilets. All portable toilets shall be designed to receive and retain the wastes deposited in them and shall be located and maintained in a manner that will prevent the creation of any nuisance condition. Wastewater from portable toilets shall be disposed of at a public sewage treatment facility.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.19(455B) Other methods of wastewater disposal. Other methods or types of private wastewater treatment and disposal systems shall be installed only after plans and specifications for each project have been approved by the administrative authority.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.20(455B) Disposal of septage from private sewage disposal systems.

69.20(1) The collection, storage, transportation and disposal of all septage shall be carried out in accordance with the requirements in 567—Chapter 68.

69.20(2) Commercial septic tank cleaners. Individual administrative authorities shall enforce the licensing program for commercial septic tank cleaners in accordance with the requirements of 567—Chapter 68.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.21(455B) Experimental private sewage disposal systems.

69.21(1) Design requirements. Experimental systems are to be designed and operated in accordance with approved standards and operating procedures established by individual administrative authorities.

a. Plans and specifications, meeting all applicable rule requirements, should be prepared and submitted to the administrative authorities by a licensed professional engineer. Included with the engineering submittal should be adequate supporting data relating to the effectiveness of the proposed system.

b. For systems designed to discharge treated effluent into waters of the state, a Notice of Intent to be covered under the requirements of NPDES General Permit No.4 shall be obtained. The administrative authority is responsible for determining that the requirements of the permit, including the monitoring program, are met.

c. Administrative authorities should prepare for signature an enforceable agreement to be placed on record which would require that present and future system owners meet all applicable rule requirements. In the event of noncompliance, the administrative authority shall require that adequate steps be taken by the system owner to bring the system into compliance or that the system owner replace the system with a system prescribed in these rules.

69.21(2) Reserved.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.22(455B) Variances. Variances to these rules may be granted by the department of natural resources or the administrative authority provided sufficient information is submitted to substantiate the need for and propriety of such action. Applications for variances and justification shall be in writing and copies filed with the department.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

These rules are intended to implement Iowa Code chapter 455B, division III, part 1.

Appendix A
Estimates of Nonhousehold Domestic Sewage Flow Rates

Source of use for sewage unit	(units)	Gallons per day per unit
Dwelling Units		
Hotels or luxury motels	(Each guest)	60
	(Add per employee)	13
or	(Per square foot)	0.3
Discount motels	(Each guest)	40
	(Add per employee)	13
or	(Per square foot)	0.46
Rooming house	(Each resident)	50
	(Add per nonresident meal)	4.0
Commercial/Industrial		
Retail stores	(Per square foot of sales area)	0.15
or	(Each customer)	5
	(Plus each employee)	15
or	(Each toilet room)	630
Offices	(Each employee)	18
or	(Per square foot)	0.25
Medical offices	(Per square foot)	1.6
Industrial buildings	(Each employee)	20
	(Does not include process ware or cafeteria)	
Construction camp	(Each employee)	20
Visitor center	(Each visitor)	20
Laundromat	(Each machine)	690
or	(Each load)	50
or	(Per square foot)	2.9
Barber shops	(Per chair)	80
Beauty shops	(Per station)	300
Car washes	(Per inside square foot)	10
	(Does not include car wash water)	
Eating and Drinking Establishments		
Restaurant	(Per meal)	4.0
	(Does not include bar or lounge)	
or	(Each seat)	40
	(Plus add for each employee)	13
Dining hall	(Per meal)	4.0
Coffee shop	(Each customer)	2.5
	(Add per employee)	13
Cafeteria	(Each customer)	2.5
	(Add per employee)	13
Drive-in	(Per car stall)	145
Bar or lounge	(Each customer)	5.5
	(Add per employee)	16
or	(Per seat)	40
Country clubs	(Per member) (No meals)	22

Source of use for sewage unit	(units)	Gallons per day per unit
or	(Per member) (Meals and showers)	130
or	(Per member in residence)	100
Resorts		
Housekeeping cabin	(Per person)	50
Lodge	(Per person)	74
Parks/swimming pools	(Per guest)	13
Picnic parks with toilet only	(Per guest)	10
Movie theaters	(Per guest)	4.0
Drive-in theaters	(Per space)	5
Skating rink/dance hall	(Per customer)	10
Bowling lanes	(Per lane)	200
Transportation		
Airport, bus or rail depot	(Per passenger)	4
or	(Per square foot)	6.5
or	(Per public restroom)	630
Auto service station	(Each vehicle served)	13
	(Add per employee)	16
or	(Per inside square foot)	0.6
or	(Per public restroom)	630
Institutional		
Hospitals	(Each medical bed)	250
	(Add per employee)	16
Mental institution	(Each bed)	175
	(Add per employee)	16
Prison or jail	(Each inmate)	160
	(Add per employee)	16
Nursing home	(Each resident)	145
	(Add per employee)	16
Schools and Churches		
School	(Per student) (No gym, cafeteria or showers)	17
	(Per student) (Cafeteria only)	17
	(Per student) (Cafeteria, gym & showers)	30
Boarding school	(Per student)	115
Churches	(Per member)	2
	(Per member with kitchen)	5
Recreational		
Campground/with hookups	(Per person)	40
or	(Per site with central bath)	100
	(Per site)	75
	(Add for dump station w/ hookup)	16
Day camp (no meals)	(Per person)	16
Weekly overnight camp	(Per member)	33

Appendix B

Percolation Test Procedure

1. At least three test holes distributed evenly over the proposed lateral field are required.
2. Percolation test holes shall be 4 to 12 inches in diameter and to the same depth as the proposed absorption trenches (not to exceed 36 inches in depth).
3. Sides and bottoms of the test holes shall be scratched or roughened to provide a natural surface. All loose material shall be removed from each hole.
4. The bottoms of the test holes shall be covered with approximately 2 inches of rock to protect the bottom from scouring action when the water is added.
5. The hole shall be filled with at least 12 inches of clean water, and this depth shall be maintained for at least 4 hours and preferably overnight if clay soils are present. It is important that the soil be allowed to soak for a sufficiently long period of time to allow the soil to swell if accurate results are to be obtained. Failure to perform the presoak when required will invalidate the percolation test results.
6. In sandy soils with little or no clay, soaking is not necessary. If, after the hole has been filled twice with 12 inches of water, the water seeps completely away in less than 10 minutes, the test can proceed immediately.
7. Except for sandy soils, percolation rate measurements should be made at least 4 hours but no more than 24 hours after the soaking period began. Any soil that sloughed into the hole during the soaking period is removed, and the water level is adjusted to 6 inches above the gravel (or 8 inches above the bottom of the hole). At no time during the test is the water level allowed to rise more than 6 inches above the gravel.
8. Immediately after adjustment, the water level is measured from a fixed reference point to the nearest $\frac{1}{8}$ inch at 30-minute intervals. The test is continued until two successive water level drops do not vary by more than $\frac{1}{8}$ inch. At least three measurements are made.
9. After each measurement, the water level is readjusted to the 6-inch level. The last water level drop is used to calculate the percolation rate.
10. In sandy soils or soils in which the first 6 inches of water added after the soaking period seep away in less than 30 minutes, water level measurements are made at 10-minute intervals for a 1-hour period. The last water level drop is used to calculate the percolation rate.
11. The percolation rate is calculated for each test hole by dividing the time interval used between measurements by the magnitude of the last water level drop. This calculation results in a percolation rate in terms of minutes per inch. To determine the percolation rate for the area, the rates obtained from each hole are averaged. (If tests in the area vary by more than 20 minutes per inch, variations in soil type are indicated. Under these circumstances, percolation rates should not be averaged.) EXAMPLE: If the last measured drop in water level after 30 minutes is $\frac{3}{8}$ inch, the percolation rate = (30 minutes)/($\frac{3}{8}$ inch) = 48 minutes/inch.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

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TITLE V
FLOODPLAIN DEVELOPMENT

CHAPTER 70

SCOPE OF TITLE—DEFINITIONS—FORMS—RULES OF PRACTICE

[Prior to 7/1/83, see INRC, Chs 2 and 5]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—70.1(455B,481A) Scope of title.

70.1(1) The department has jurisdiction over all floodplains and floodways in the state for the purpose of establishing and implementing a program to promote the protection of life and property from floods and to promote the orderly development and wise use of the floodplains of the state. Any person who desires to construct or maintain a structure, dam, obstruction, deposit or excavation, or allow the same in any floodplain or floodway has a responsibility to contact the department to determine whether approval is required from the department or a local government authorized to act for the department.

70.1(2) Minimum statewide criteria for most types of floodplain development are listed in 567—Chapter 72. Special requirements for dams are listed in 567—Chapter 73.

[ARC 9208C, IAB 5/14/25, effective 6/18/25]

567—70.2(455B,481A) Definitions. Definitions used in this title are listed in alphabetical order as follows:

“Agricultural levees or dikes” means levees or dikes constructed to provide limited flood protection to land used primarily for agricultural purposes.

“Animal feeding operation” means the same as defined in 567—65.1(459,459B).

“Animal feeding operation structure” means the same as defined in 567—65.1(459,459B).

“Backwater” means the increase in water surface level immediately upstream from any structure, dam, obstruction or deposit, erected, used, or maintained in the floodway or on the floodplains caused by the resulting reduction in conveyance area.

“Bankfull stage” is the elevation above which a rise in water surface elevation will cause the river or stream to overflow the lowest natural bank that is not an unusually low place or a break in the natural bank through which water inundates a small area.

“Base flood elevation” means the elevation that floodwaters would reach at a particular site during the occurrence of a flood having a 1 percent chance of being equaled or exceeded in any given year (also commonly referred to as the “100-year flood”).

“Building” means all residential housing including mobile homes as defined herein, cabins, factories, warehouses, storage sheds, and other walled, roofed structures constructed for occupation by people or animals or for storage of materials.

“Channel” means a natural or artificial flow path of a stream with definite bed and banks to collect and conduct the normal flow of water.

“Channel change” means either (a) the alteration of the location of a channel of a stream or (b) a substantial modification of the size, slope, or flow characteristics of a channel of a stream. (NOTE: Diversions of water subject to the permit requirements of Iowa Code sections 455B.268 and 455B.269 usually are not channel changes.) Increasing the cross-sectional area of a channel by less than 10 percent is not considered a substantial modification of the size, slope, or flow characteristics of a channel of a stream.

“Confinement feeding operation” means the same as defined in 567—65.1(459,459B).

“Confinement feeding operation building” or *“confinement building”* means the same as defined in 567—65.1(459,459B).

“Confinement feeding operation structure” means the same as defined in 567—65.1(459,459B).

“Dam” means the same as defined in rule 567—73.2(455B).

“Development” means a structure, dam, obstruction, deposit, excavation or flood control work in a floodway or floodplain.

“Drainage district ditch” means a channel located within the boundaries of a drainage district and excavated to establish a design channel-bottom profile for efficient conveyance of drainage from agricultural tile systems and open drains.

“Elevating” means raising buildings by fill or other means to or above a minimum level of flood protection.

“Emergency action plan” means the plan to adequately protect persons or materials in a floodplain during a flood event. An emergency action plan shall include action triggers such as stream levels or flood warnings, responsible parties, and a detailed plan of action.

“Flood control works” means physical works such as dams, levees, floodwalls, and channel improvements or relocations undertaken to provide moderate to high degree of flood protection to existing or proposed structures or land uses.

“Floodplain” means the area adjoining a river or stream that has been or may be covered by flood water.

“Flood proofing” means a combination of structural provisions, changes, or adjustments in construction to buildings, structures, or properties subject to flooding primarily for the reduction or elimination of flood damages.

“Floodway” means the channel of a river or stream and the adjacent land areas that must be reserved in order to discharge the waters of a 1 percent annual recurrence chance flood without cumulatively increasing the water surface elevation more than one foot. Floodway establishment procedures can be found in 567—70.4(455B).

“Floodway fringe” means those portions of the floodplains located outside of the floodway.

“High damage potential” means the flood damage potential associated with the following:

1. Habitable residential buildings and building complexes, which include seasonal residential buildings; or
2. Industrial, commercial, agricultural, recreational and other similar buildings or building complexes, that, if inundated by flooding, would result in high public damages as determined by the department or that contain high-value equipment or contents that are not easily removed; or
3. Public buildings or building complexes, that, if inundated by flooding, would result in high public damages as determined by the department.

“Low damage potential” means all buildings, building complexes or floodplain uses not defined as maximum or high damage potential where such structures are designed in a manner that inundation by flood waters results in minimal damage to the structure and its contents. Such structures include but are not limited to the following: detached residential garages, sheds, park shelters, buildings used for storage of equipment or crops that can be easily removed before a flood event, and buildings used as temporary shelter for livestock.

“Major water source” means the same as defined in 567—65.1(459,459B).

“Manure storage structure” means the same as defined in 567—65.1(459,459B).

“Maximum damage potential” means the flood damage potential associated with hospitals and like institutions; buildings or building complexes containing documents, data, or instruments of great public value; buildings or building complexes containing materials dangerous to the public or fuel storage facilities; emergency response facilities, power installations needed in emergency or buildings or building complexes similar in nature or use to those listed above.

“Minimum level of flood protection” means the elevation corresponding to the water surface profile of the regulatory flood associated with a damage potential classification listed in these rules plus any freeboard specified in these rules.

“Mobile home” means a structure, transportable in one or more sections, that is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. It does not include recreational vehicles or travel trailers.

“Nominated stream” means the stream or water source named in the petition described in 567—Chapter 72 that seeks designation of a stream as a protected stream.

“Protected stream” means a stream designated by the department as a “protected stream” in 567—Chapter 72.

“Public damages” means costs resulting from damage to roads and streets, sewers, water mains, other public utilities and public buildings; expenditures for emergency flood protection, evacuation and relief, rehabilitation and cleanup; losses due to interruption of utilities and transportation routes, and interruption of commerce and employment.

“Q500,” “Q100,” “Q50,” “Q25,” “Q15,” “Q10,” etc., means a flood having a 0.2, 1, 2, 4, 7, 10, etc., percent chance of being equaled or exceeded in any one year as determined by the department.

“Repair and maintenance of a drainage district ditch” means the restoration of the original grade line, cross-sectional area, or other design specifications of a drainage district ditch lawfully established as part of a drainage district formed and operating under the provisions of Iowa Code chapter 468.

“Road projects” means the construction and maintenance of any bridges, culverts, road embankments, and temporary stream crossings.

“Rural areas” means any area not defined or designated as an urban area.

“Seasonal homes” means residential buildings or building complexes that are not used for permanent or year-round human habitation.

“Stream” means a water source that either drains an area of at least two square miles or has been designated as a protected stream in 567—Chapter 72.

“Urban areas” means those lands enclosed by the incorporated limits of municipalities.

“Water source” means the same as defined in 567—65.1(459,459B).

[ARC 9208C, IAB 5/14/25, effective 6/18/25]

567—70.3(17A,455B,481A) Review and approval of floodplain development.

70.3(1) *Development needing approval.* Any development in a floodway or floodplain that exceeds the thresholds in 567—71.1(455B), that is not exempt pursuant to 567—71.4(455B), and that is not regulated by a locally adopted ordinance, requires approval by the department.

70.3(2) *Permit application submittal requirements.* Applications shall be submitted on either forms or an application system provided by the department with required supporting materials as determined by the department describing the work and impacts of the proposed development. Applications shall include a project description and detailed drawings of proposed development. Certified engineering plans, specifications, hydrologic and hydraulic analysis, and other information as specified by the department that is needed for the department to conduct a technical review are also required for complex projects such as bridges, culverts, levees, channel changes and other public infrastructure where the department determines that such materials are necessary to determine impacts of the project and the design’s ability to meet criteria for approval. The engineering plans and other engineering information shall be certified by a licensed professional engineer or, if applicable, a licensed land surveyor, as required by Iowa Code chapter 542B.

70.3(3) *Application fee.* No fee is charged at this time.

[ARC 9208C, IAB 5/14/25, effective 6/18/25]

567—70.4(455B) Establishment of a floodway. Criteria for approval in 567—Chapter 72 often references the floodway. When available, floodways calculated and published by FEMA on community adopted flood insurance rate maps may be used by the department. When unavailable, or in discretion of the department based on best available information, the department will delineate the encroachment limits defining the outer limits of the floodway, conforming to the following criteria insofar as possible:

70.4(1) *Increase in water surface elevation.* The increase in the water surface elevation of Q100 (100-year discharge) that would result from confining flood flows to the floodway must not exceed one foot.

70.4(2) *Equal and opposite conveyance.* Floodway boundaries shall be located such that the floodway areas on each side of a stream convey a share of the flood flows proportionate to the total conveyance available on each respective side of the stream.

70.4(3) *Protection of existing development.* To the extent feasible, floodway boundaries shall be located as follows:

- a. To avoid the need to seek removal of a lawful existing structure in order to safely convey Q100;
- b. To minimize any increase in the level of Q100 in an area where such increase would adversely affect an existing lawful structure; and

c. To avoid the need to place an existing lawful structure in a delineated floodway if the placement would result in additional restrictions on improvements or reconstruction or replacement of the structure.

70.4(4) *When acquisition of property interest is required.* Where protection of an existing structure necessitates prohibition of development in an area that could otherwise be developed under the criteria in 70.4(1) and 70.4(2), the department or local governmental designee may require that the owners of land benefited by the application of criteria in this subrule acquire property interests as needed to provide an adequate alternative floodway.

[ARC 9208C, IAB 5/14/25, effective 6/18/25]

567—70.5(17A,455B,481A) Procedures for review of applications.

70.5(1) *Initial screening of applications.* Each application upon receipt shall be promptly evaluated by the department to determine whether adequate information is available to review the project. The department shall advise the applicant of any additional information required to review the project. If the requested information is not submitted within 60 days of the date the request is made, the department may consider the application withdrawn.

70.5(2) *Order of processing.* In general, complete applications including sufficient plans and specifications shall be reviewed in the order that complete information is received. However, when there is a large number of pending applications, which preclude the department from promptly processing all applications, the department may expedite review of a particular application out of order if the completed application and supporting documents were submitted at the earliest practicable time and any of the following conditions exist:

- a. Relatively little staff review time (generally less than four hours) is required and delay will cause the applicant hardship;
- b. The applicant can demonstrate that a delay in the permit will result in a substantial cost increase of a large project;
- c. Prompt review of the permit would result in earlier completion of a project that conveys a significant public benefit;
- d. The need for a permit is the result of an unforeseen emergency or catastrophic event; or
- e. A permit is needed to complete a project that will abate or prevent an imminent threat to the public health and welfare.

70.5(3) *Project investigation.* The department shall make an investigation of a project for which an application is submitted. The following are standard procedures for an investigation of an application:

a. *Inspection.* Agency personnel may make one or more field inspections of the project site when necessary to obtain information about the project. Submission of the application is deemed to constitute consent by the applicant for the agency staff and its agents to enter upon the land on which the proposed activity or project will be located for the sole purpose of collecting the data necessary to process the application, unless the applicant indicates to the contrary on the application.

b. *Technical review.* The department staff shall conduct a technical review using appropriate analytical techniques such as application of hydrologic and hydraulic models to determine the effects and impacts of a proposed project.

c. *Solicitation of expert comments on environmental effects.* For channel changes or other developments that may cause significant adverse effects on the wise use and protection of water resources, water quality, fish, wildlife and recreational facilities or uses, the department shall request comments from the fish and wildlife division of the department or other knowledgeable sources.

d. *Summary report of project review.* The department staff may, if indicated, prepare a project summary report that summarizes the results of the review with respect to relevant criteria, the analytical methods used in the review and other project information. Typical indications of when project summary reports will be prepared are for those projects for which negative comments have been received from potentially affected landowners, those projects that are not approvable, and those projects that are complex in nature. Project summary reports will not normally be prepared for routine, noncontroversial projects.

e. *Notice to landowners who might be affected.* The department shall require the applicant to provide the names of the owners and occupants of land located immediately upstream, downstream, and across from the project site, and owners of any other land that the agency staff determines may be adversely

affected by the project. For those landowners that the department determines may be adversely impacted by the project, the department shall then notify the landowners that the project is under consideration and provide a reasonable opportunity for submission of comments.

f. Notice to the applicant that project does not conform to criteria. If the project review discloses that the project violates one or more criteria and that the project should be disapproved, or approved only subject to special conditions to which the applicant has not agreed, the department shall notify the applicant and, when practical, suggest appropriate project modifications. The department shall offer the applicant an opportunity to submit comments before an initial decision is made.

70.5(4) Decision by the department. The decision by the department on an application for a floodplain development permit shall be either approval or disapproval. The decision shall include a determination whether the project satisfied all relevant criteria and may incorporate by reference and attachment the summary report described in 70.5(3) “d.”

a. Approval. Issuance of a floodplain development permit shall constitute approval of a project. The permit shall include applicable general conditions listed in 567—Chapter 72 and may include one or more special conditions when reasonably necessary to implement relevant criteria.

b. Disapproval. A letter to the applicant denying the application shall constitute disapproval of a project.

c. Notice of decision. Copies of the decision shall be mailed to the applicant, any person who commented pursuant to 70.5(3) “e,” and any other person who has requested a copy of the decision. The decision may be sent by ordinary mail, first class, and shall be accompanied by a certification of the date of mailing. A decision becomes the final decision of the department unless a timely notice of appeal is filed in accordance with 567—70.6(17A,455B,481A). The final decision may be filed with the appropriate county recorder to give constructive notice to future landowners of any conditions or requirements imposed by the final decision.

[ARC 9208C, IAB 5/14/25, effective 6/18/25]

567—70.6(17A,455B,481A) Appeal of decision.

70.6(1) Any person aggrieved by a decision issued under 567—70.5(17A,455B,481A) of these rules may file a notice of appeal with the director. The notice of appeal must be filed within 30 days following the certified date of mailing of the decision unless the appellant shows good cause for failure to receive actual notice and file within the allowed time. The form of the notice of appeal and appeal procedures are governed by 567—Chapter 7.

70.6(2) The department shall mail a copy of the notice of appeal to each person who was sent a copy of the initial decision. The department shall attach an explanation of the opportunity to seek intervention in the contested case.

[ARC 9208C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 4, and sections 455B.105(11), 459.102, 459.301 and 481A.15.

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- ¹ Effective date of definitions (channel change, drainage district ditch, repair and maintenance of a drainage district ditch) in rule 70.2 delayed 70 days by the Administrative Rules Review Committee.

CHAPTER 71
FLOODPLAIN OR FLOODWAY DEVELOPMENT—WHEN APPROVAL IS REQUIRED

[Prior to 7/1/83, INRC, Ch 5, Div. 1]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—71.1(455B) State floodplain permits. In the following instances, approval is required by the department for any development including construction, maintenance, and use of a structure, dam, obstruction, deposit, excavation or flood control work on a regulated floodplain or floodway unless the project is otherwise approved by a delegated community's local floodplain ordinances adopted pursuant to 567—71.2(455B) or is exempt under 567—71.4(455B).

71.1(1) Rural areas. In rural areas, projects in or on the floodplain of any stream draining ten or more square miles at the downstream end of the project site.

71.1(2) Urban areas. In urban areas, projects in or on the floodplain of any river or stream draining two or more square miles at the downstream end of the project site.

71.1(3) Protected streams. On protected streams, channel changes at any location on any river or stream designated as a protected stream pursuant to Division III of 567—Chapter 72.

71.1(4) Buildings and other structures adjacent to or downstream from impoundments. For new construction, additions, lowering, or reconstruction of buildings, water and waste water treatment facilities, sanitary landfills, animal feeding operation structures, or other miscellaneous structures and associated fill, without regard to the size of the drainage area, if:

a. The project is adjacent to an impoundment and the lowest floor level, including any basement, is lower than the top of the adjacent dam; or

b. There is an upstream dam and flooding can be reasonably anticipated from principal or emergency spillway discharges; or

c. There is an upstream dam that does not substantially comply with high hazard criteria in these rules and where flooding can be reasonably anticipated from overtopping and failure of the dam.

71.1(5) Dams. For construction, repair, or modification of any dam that exceeds the thresholds under 567—73.3(455B).

[ARC 9209C, IAB 5/14/25, effective 6/18/25]

567—71.2(455B) Delegated state floodplain permitting by local communities. Upon submission to the department for review and approval, a local unit of government may establish encroachment limits, floodplain regulations, and zoning ordinances, subject to the following:

71.2(1) Written approval from the department must be obtained before effective adoption or amendment of a local regulation that would control development in a floodplain or floodway for purposes related to flood protection. A local government may appeal the refusal of the department to approve a proposed regulation by notifying the department and requesting that the proposed local regulation be considered at the next meeting of the commission.

71.2(2) Prior to receiving approval, a community shall demonstrate capacity to properly review applications and issue floodplain permits.

71.2(3) Approved communities shall provide evidence to the department of this capacity at least every five years. Additionally, the department may, from time to time, take action to ascertain the effectiveness of department-approved, locally adopted floodplain management regulations. Upon a finding that the local government has been negligent in administering the approved regulations, the department may revoke approval of same. Floodplain works found to be in violation of department-approved, locally adopted floodplain management regulations may be handled under the provisions of the department's rules for investigation of unauthorized projects.

71.2(4) Where it is unclear whether the works are adequately covered by such local regulations, the department shall make the determination.

[ARC 9209C, IAB 5/14/25, effective 6/18/25]

567—71.3(455B) Review and approval of variances from local regulations. A variance from an approved local floodplain regulation shall not be effective until it has been reviewed and approved by the department in accordance with the following procedures.

71.3(1) *Duty of local government to notify department of each variance request.* After receipt of each request for variance from a local floodplain regulation approved by the department, the local government shall notify the department of the variance request on a form obtained from the department. The notice must be received by the department at least 15 days before any hearing that the local government schedules on the variance request.

71.3(2) *Written comment from the department.* After receipt of notice of a variance request, the department shall mail or deliver a written comment on the variance request. The comment shall be issued within 15 days after receipt of the notice or in time for consideration at any hearing held after expiration of the 15-day period. The comment shall be either a statement of objection or “no objection” as follows:

a. Objection to variance request. The department may issue an objection to the variance request if the requested variance would violate applicable statewide criteria. The objection may be based on a statement that the applicant for the variance has provided insufficient information for the department to determine whether the requested variance would violate applicable minimum statewide criteria. An objection based on a statement of insufficiency of information shall identify the information needed to determine whether the request would violate applicable criteria.

b. No objection to variance requests. The comment issued by the department may state that the department has no objection to the variance request. The comment shall briefly explain why granting of the requested variance would not violate the purposes of minimum statewide criteria. A statement of “no objection” shall constitute approval to grant the requested variance.

71.3(3) *Basis for variance.* A variance from an applicable local permitting requirement should only be granted if the applicant can show that denial of the variance would cause unnecessary hardship and that granting of the variance would not be contrary to the public interest or the underlying purposes of the requirement in question.

71.3(4) *Review or appeal of local ruling on variance request.* The appropriate forum and procedures for review or appeal of the decision of a local government on a request for variance from a regulation approved by the department depend on the relationship between the local decision and the comment submitted by the department as follows.

a. When local government grants variance after objection by department. If the local government grants a variance request after issuance of an objection by the department, the local government shall give written notice of the local action and the supporting reasons to the department. The variance shall not be effective until approved by the commission. The applicant for the variance shall have the right to a contested case proceeding before the commission or its designee if required to resolve a material issue of fact or law.

b. When local government denies variance after objection by department. If the local government denies a variance request on the basis of an objection by the department, the applicant may file a notice of appeal with the department within 20 days following the local action. The applicant for the variance shall have the right to a contested case proceeding before the commission or its designee if required to resolve a material issue of fact or law.

c. When local government grants or denies a variance request after a “no objection” comment by the department. When a local government grants or denies a variance request after receiving a “no objection” comment from the department, any appeal normally should be taken in the manner provided for appeal of other local actions. An appeal should be filed with the department only if the purpose of the appeal is to challenge the basis of the “no objection” comment.

d. Duty of local government to notify department of appeal. The local government shall promptly notify the department of the filing of any petition for judicial review of local action on a variance request so the department may determine whether participation in the judicial review would be in the interest of the state.

[ARC 9209C, IAB 5/14/25, effective 6/18/25]

567—71.4(455B) Exempted activities. Notwithstanding 567—70.3(17A,455B,481A) and 567—71.1(455B), the following activities do not require approval pursuant to this title by the department to construct in a floodplain:

71.4(1) *Rural bridges/culverts/road embankments and associated work.* Construction, maintenance, or use of bridges, culverts, temporary stream crossings, or road embankments in a rural area floodplain with a drainage area less than 100 square miles including associated channel changes not on protected streams with up to 500 feet in length and maximum of 25 percent reduction in length, and associated excavations within 500 feet of the project.

71.4(2) *Federally regulated railroad crossing.* Construction, maintenance, or use of federally regulated railroad crossings having a drainage area of any size.

71.4(3) *Buildings.*

a. Building additions that, when considered in aggregate with all additions constructed after July 4, 1965, increase the original floor area of a building by less than 25 percent.

b. Reconstruction of any portion of a building if the cost of reconstruction, including equivalent professional labor and material costs for proposed or actual volunteer labor and donated materials, and as would be determined by a qualified contractor, does not exceed 50 percent of the market value of the existing building or if reconstruction will not increase the market value by more than 50 percent.

71.4(4) *Pipeline and underground linear utility crossings.* The construction, operation and maintenance of buried pipeline, conduit and linear utility crossings if the natural contours of the channel and floodplain are maintained and no bank stabilization is required.

71.4(5) *Excavations.*

a. Excavations where the channel cross section is increased by 10 percent or less, as determined based on current survey, original engineering plans if being performed by a drainage district, if available.

b. Excavations for the repair and maintenance of a drainage district ditch with less than 100 square mile drainage area.

c. Excavations outside the channel and not impacting streambanks on any floodplain of any river or stream draining more than ten square miles where excess spoil is removed from the floodplain, the project does not reduce capacity of the floodplain, and surface waters are not diverted into a sinkhole or quarry excavated in carbonate rock.

71.4(6) *Boat docks.* Construction, maintenance, or use of floating boat docks on lakes, and those recreational nonfloating style boat docks located on the Mississippi and Missouri rivers, located on reservoirs within state parks, and the conservation pools of the Coralville, Rathbun, Red Rock, and Saylorville reservoirs.

71.4(7) *Small projects.* For developments in rural areas for any low damage potential project where such works obstruct less than 3 percent of the cross-sectional area of the stream channel at bankfull stage or where such works obstruct less than 15 percent of the cross-sectional area of that side of the stream's floodplain at any stage.

[ARC 9209C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 4, and sections 459.102, 459.301 and 481A.15.

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¹ Effective date(12/25/85) of subrules 71.2(4) and 71.11(1)“a” and “d” delayed 70 days by the Administrative Rules Review Committee.

CHAPTER 72
CRITERIA FOR APPROVAL
[Prior to 7/1/83, INRC[580] Ch 5, Div. III to V]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

DIVISION I
SPECIAL CRITERIA FOR VARIOUS TYPES OF FLOODPLAIN DEVELOPMENT

567—72.1(455B) Bridges, culverts, and road embankments. The following criteria shall apply to the construction, operation, and maintenance of bridges, culverts, and road embankments:

72.1(1) *Bridges and road embankments affecting low damage potential areas.* For bridges and road embankments affecting floodway or floodplain areas having a low flood damage potential, the following criteria will apply:

a. Backwater Q100. The maximum allowable backwater for Q100 is 1.5 feet.

b. Freeboard. The minimum freeboard for low superstructure horizontal bridge members above Q50 is 3 feet unless a licensed engineer provides documents on the certified plans that the bridge is designed to withstand the applicable effects of ice and the horizontal stream loads and uplift forces associated with the Q100.

72.1(2) *Bridges and road embankments affecting high or maximum damage potential development.* For bridges and road embankments affecting floodway or floodplain areas occupied by buildings or building complexes having a high or maximum flood damage potential, the following criteria will apply:

a. Backwater Q100.

(1) The maximum allowable Q100 backwater for bridges and road embankments is 1 foot.

(2) For a bridge and road embankment located within a stream reach for which the Federal Emergency Management Agency has published a detailed Flood Insurance Study which includes a floodway, the backwater for Q100 shall not exceed the surcharge associated with the delineation for the floodway at that location.

(3) In no case shall the Q100 backwater effects of a bridge or road embankment reduce the existing level of protection provided by certain flood control works, unless equivalent remedial measures are provided.

b. Freeboard. The minimum freeboard for low superstructure horizontal bridge members above Q50 is 3 feet unless a licensed engineer provides certification that the bridge is designed to withstand the applicable effects of ice and the horizontal stream loads and uplift forces associated with the Q100.

72.1(3) *Bridge and channel change.* For bridges and culverts involving channel changes on the floodway of any stream draining at the location of the channel change between 10 and 100 square miles whereby either (i) more than a 500-foot length of the existing channel is being altered or (ii) the length of existing channel being altered is reduced by more than 25 percent, the maximum allowable backwater shall correspond to the limits permitted in 72.1(1), 72.1(2) or 72.1(4) depending upon the associated damage potential.

72.1(4) *Culverts.* The maximum allowable backwater at culvert inlets shall correspond to the limits permitted in 72.1(1) or 72.1(2) depending upon the damage potential associated with the affected area. In the case of replacement culverts, the backwater shall not exceed that created by the culvert or waterway crossing being replaced or that specified in 72.1(1) or 72.1(2) depending upon the associated damage potential, whichever is greater.

72.1(5) *Road embankments.* The criteria listed in 567—72.11(455B) for miscellaneous floodplain construction projects shall apply to road embankments located on the floodplain but not crossing any stream or river channel.

72.1(6) Temporary channel obstructions. Temporary stream crossings and other temporary obstructions usually constructed, operated, and maintained during the construction phase of another floodplain construction project shall meet the following criteria:

- a. *Low flow.* Said structures will provide for the passage of the prevailing flow in the stream or river.
- b. *Flood flow.* Said structure shall be designed to fail, be removed quickly, or otherwise operate in the event of flooding so as to prevent premature overbank flow, or meet the backwater criteria indicated in 72.1(1) or 72.1(2).

72.1(7) Emergency. Repairs or temporary construction required to maintain the operation of a bridge, road grade or culverts in time of emergency need not be submitted for prior department approval. Plans of such emergency or temporary construction shall be submitted to the department for review after the event causing the emergency has passed.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.2(455B) Channel changes. The following criteria shall apply to channel changes:

72.2(1) Percent reduction in length.

a. *Streams draining over 100 square miles.* For streams (other than protected streams) draining more than 100 square miles, no more than a 10 percent reduction in the original length of the existing channel through any contiguous parcel(s) of the applicant's(s') property will be allowed.

b. *Rural streams draining 10 to 100 square miles.* For streams (other than protected streams) draining between 10 and 100 square miles in rural areas, no more than a 25 percent reduction in the original length of the existing channel through any contiguous parcel(s) of the applicant's(s') property will be allowed.

c. *Urban streams draining 2 to 100 square miles.* For streams (other than protected streams) draining between 2 and 100 square miles in urban areas, no more than a 25 percent reduction in the original length of the existing channel through any contiguous parcel(s) of the applicant's(s') property will be allowed.

d. *Protected streams.* For protected streams no channel changes will be allowed, because of actual or potential significant adverse effects on fisheries, water quality, flood control, floodplain management, wildlife habitat, soil erosion, public recreation, the public health, welfare and safety, compatibility with the state water plan, rights of other landowners, and other factors relevant to the control, development, protection, allocation, and utilization of the stream. Protected stream status does not prohibit bank stabilization measures; tree maintenance or removal; maintenance or installation of tile outlets; machinery crossings, including concrete drive-throughs and bridges; boat or canoe ramps; or other structures permitted by the department; nor restrict riparian access to the protected stream for such uses as livestock watering or grazing. Protected stream status does not affect current cropping practices or require the establishment or maintenance of buffer strips, filter strips or fences along protected streams.

72.2(2) Capacity. In the project reach, excavated channels shall have a discharge capacity equal to or greater than the existing channel. Excessive channel excavation will not be permitted.

72.2(3) Alignments. The alignments and dimensions of the excavated channel shall be such as to provide a smooth transition between the existing and the excavated channel.

72.2(4) Velocities. Velocities in the excavated channel shall not cause excessive erosion of the channel or banks, with the acceptable velocities being determined by the department. Energy dissipation structures, channel and bank protection, or other engineering measures may be required to eliminate excessive erosion of the channel or banks.

72.2(5) Spoil disposition. Disposition of spoil material from channel excavation of the floodplain shall be reviewed under miscellaneous floodplain construction.

72.2(6) Increase in flood peak. No significant increase in peak flood discharge will be permitted by the department. Floodwater retardance structures may be required to minimize any increase in peak flood discharges.

72.2(7) Fish and wildlife habitat and public rights. The channel change shall not have a significant adverse effect on fish and wildlife habitat or public rights to use of the stream. Conservation easements and other conditions may be required to mitigate potential damages to the quality of water, fish and wildlife habitat, recreational facilities, and other public rights.

72.2(8) Soil erosion. The tillage of land along the reach of a straightened stream shall be prohibited or modified when necessary to hold soil erosion to reasonable limits. Zones of land in which tillage shall be

prohibited along the straightened reach shall be set on a case-by-case basis with consideration given to topography, soil characteristics, current use, and other factors affecting propensity for soil erosion. The tillage prohibition shall be recorded by the department in the office of the appropriate county recorder and shall run with the land against the applicant and all successors in interest to the land subject to the prohibition.

72.2(9) *Encroachment on a confinement feeding operation structure.* A major water source, as identified in Appendix B, Tables 1 and 2 of 567—Chapter 65, or a water source other than a major water source shall not be constructed, expanded or diverted if the water source or major water source as constructed, expanded or diverted is closer than the following distances from a confinement feeding operation. Measurement shall be from the closest point of the confinement feeding operation structure to the top of the bank of a stream channel or the ordinary high water mark of a lake, pond, impoundment or reservoir. Farm ponds, privately owned lakes, and confinement feeding operations constructed with a secondary containment barrier pursuant to 567—subrule 65.15(17) are exempt from the separation distance requirements. The provisions of this subrule shall not be construed to allow construction of a confinement feeding operation structure on land that would be inundated by Q100 and is adjacent to a major water source.

a. Minimum separation between a water source other than a major water source and a confinement feeding operation structure is 500 feet.

b. Minimum separation between a major water source and a confinement feeding operation structure is 1,000 feet.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.3 Reserved.

567—72.4(455B) Levees, floodwalls, and dikes. The following criteria shall apply to levees, floodwalls, and dikes:

72.4(1) *Agricultural levees or dikes.*

a. Level of protection. The permanent height of agricultural levees or dikes normally shall be limited so that overtopping will occur due to discharges from Q10 to Q25 with the more comprehensive levee system being permitted the greater degree of protection.

b. Additional protection. Where it can clearly be shown that loss of valley storage caused by construction of the levee will not increase peak flood stages and discharges, the level of protection provided by the agricultural levee or dike may be increased beyond the Q10 to Q25 range.

c. Alignment. The location and alignment of agricultural levees or dikes shall be compatible with existing encroachment limits so that minimum flood protection levels will not be increased, and said levee or dike shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

d. Maximum effect. The maximum increase in the flood profile resulting from the construction, operation, and maintenance of an agricultural levee or dike shall be 1 foot. Equal and opposite conveyance as defined in 567—Chapter 70 shall be used in determining the maximum increase in flood profile resulting from such levees or dikes.

e. Interior drainage. All agricultural levees or dikes shall be provided with adequate interior drainage facilities.

f. Offset. A minimum offset equal to 100 feet or twice the width of a river or stream measured from top of bank to top of bank, whichever distance is less, shall be required for all agricultural levees unless a greater offset is dictated by 72.4(1) “c” or “d.”

72.4(2) *Flood control levees, floodwalls, or dikes.*

a. Design level. The minimum design flood protection level for flood control levees or dikes shall correspond to the flood profile for Q100.

b. Freeboard. The levee or dike height shall provide for at least 3 feet of freeboard above the design flood profile.

c. Alignment. The alignment of a flood control levee or dike shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

d. *Interior drainage.* Flood control levees or dikes shall provide for adequate interior drainage and ponding.

e. *Design and specifications.* The structural design and construction of flood control levees or dikes must be undertaken in accordance with accepted engineering and construction procedures and practices.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.5(455B) Buildings. The following criteria apply to buildings:

72.5(1) Minimum protection levels. The minimum level of flood protection for a building depends on the damage potential of the building and contents. “Maximum” and “high” damage potential classifications are defined in 567—Chapter 70. Criteria for determining minimum levels of protection are as follows:

a. Buildings with maximum damage potential shall have the lowest floor (including basement) elevated a minimum of 1 foot above the Q500, or together with attendant utility and sanitary systems, be flood proofed to such a level.

b. Buildings with high damage potential shall have the lowest floor (including basement) elevated a minimum of 1 foot above the Q100, or together with attendant utility and sanitary systems, be flood proofed to such a level.

c. Buildings adjacent to an impoundment shall be protected to the elevation of the top of the dam unless the dam has adequate spillway capacity to discharge the flood corresponding to the damage potential of the building at an elevation below the top of the dam.

d. Buildings downstream from a dam shall be protected to a level established by the department after due consideration of the hazards posed by the dam for buildings downstream.

72.5(2) Flood protection methods. The following flood protection methods are required for buildings to which a minimum flood protection level applies.

a. *Structural design and flood proofing.* Basement walls and floors below the applicable minimum flood protection level shall be structurally designed and constructed to be flood proof and able to withstand hydrostatic pressure and buoyant forces associated with a water table elevation equivalent to the minimum flood protection level. However, attached garages and storage space may be constructed below the applicable minimum protection level without flood proofing if all electrical circuit boxes, furnaces, and hot-water heaters are located above the applicable minimum protection level and adequate flood vents are provided to equalize hydrostatic forces.

b. *Sanitary sewer drains.* Sanitary sewer drains below the applicable minimum flood protection level shall be provided with automatic closure valves to prevent backflow.

72.5(3) Location. The criteria for location of a building include consideration of the potential for obstructing flood flows and the potential hazards which may arise when the building is surrounded by floodwater. Criteria for location of buildings in floodways and floodplains are as follows:

a. *Obstruction.* Buildings shall not be located in the floodway of a stream so as to result, individually or collectively, in any increase in the elevation of Q100 as confined to the floodway. The floodway boundary applicable to an individual application shall be determined as necessary by the department in accordance with the criteria in 567—70.4(455B). Analysis of the effect that a building in the floodway would have on flood levels shall be based on the assumption that all similarly situated landowners would be allowed an equal degree of development in the floodway.

b. *Public damages.* Buildings shall be located to minimize public damages associated with isolation due to flooding of surrounding ground. In identifying the potential for public damages, the department shall determine whether there is a need for access passable by wheeled vehicles during Q100, based on the department’s evaluation of flood warning and response time in the area.

c. *Existing buildings—replacement and improvements.* In applying the criteria in 72.5(3) “a” and “b” to projects that improve or replace existing lawful buildings, the department should prohibit the improvements or replacement only where extension of the useful life of the structure by improvement or replacement would contribute to perpetuation of an individual or collective obstruction that causes a significant increase in the level of Q100, perpetuation of a significant hazard to health or safety during floods, or perpetuation of the potential for significant flood damages to property and associated public costs.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.6(455B) Water supply and wastewater treatment facilities. The following criteria shall apply to water supply and wastewater treatment facilities:

72.6(1) Location. Water supply and wastewater treatment facilities shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

72.6(2) Flood protection. Flood protection for water supply and wastewater treatment facilities shall be provided to the level necessary for high damage potential buildings or building complexes unless evidence is submitted indicating the facility is of a lesser damage potential.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.7(455B) Sanitary landfills. The following criteria shall apply to sanitary landfills:

72.7(1) Location. Sanitary landfills shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

72.7(2) Flood protection. Flood protection for the active working portion of the sanitary landfill shall be provided to the level necessary for high damage potential buildings or building complexes.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.8(455B) Campgrounds. The following criteria shall apply to campgrounds located in the floodplain:

72.8(1) Location. Any permanent structures, obstructions, or deposits shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

72.8(2) Flood protection. Any permanent structures, obstructions, or deposits shall be provided with the minimum level of flood protection associated with the designated damage potential as indicated in 72.5(1) governing buildings and building complexes.

72.8(3) Recreational vehicles.

- a. Recreational vehicles shall be located on the site for less than 180 consecutive days, and
- b. Recreational vehicles must be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system and is attached to the site only by quick-disconnect-type utilities and security devices and has no permanently attached additions.

72.8(4) Emergency action plan. Any campground with overnight lodging in the floodplain shall have an evacuation plan that includes the following:

- a. Responsible parties for carrying out the evacuation plan.
- b. Action stages that are based on stream levels, gage data, or weather forecasts, as appropriate.
- c. A detailed list of actions that need to be taken to ensure all vehicles and campers are evacuated, including how notifications are to be delivered.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.9(455B) Stream protective devices. The following criteria shall apply to stream protective devices:

72.9(1) Overflow. Stream protective devices shall be constructed in a manner which will not cause premature overbank flow.

72.9(2) Velocity. Increased velocities resulting from the construction, operation, and maintenance of stream protective devices shall be limited so as not to cause excessive scour in the channel as determined by the department.

72.9(3) Stability. Stream protective devices shall be anchored securely to the bank or constructed in a stable manner so as not to become dislodged and result in the scattering of debris in adjacent and downstream reaches.

72.9(4) Water quality and aesthetics. Stream protective devices shall not adversely affect the water quality, fish and wildlife habitat or aesthetics of the stream.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.10(455B) Pipeline river or stream crossings. The following criteria shall apply to pipeline river and stream crossings:

72.10(1) Protection. Pipeline river or stream crossings shall be sufficiently buried in the stream bed and banks or otherwise sufficiently protected to prevent rupture.

72.10(2) Overflow and velocities. Pipeline river or stream crossings shall be constructed, operated, and maintained so as not to create premature overbank flow or excessive scour to the channel or banks.

72.10(3) Spoil. Spoil material resulting from the construction of a pipeline crossing shall be disposed of in a manner which will not obstruct low flow or flood flows.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.11(455B) Miscellaneous construction. The following criteria shall apply to miscellaneous construction:

72.11(1) Structures, obstructions, or deposits.

a. Location. Miscellaneous structures, obstructions, or deposits shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

b. Protection. Miscellaneous structures, obstructions, or deposits shall be provided with the minimum level of flood protection associated with the designated damage potential as indicated in 72.5(1) governing buildings and building complexes.

72.11(2) Excavation.

a. Spoil. Spoil material resulting from an excavation shall be disposed of in a manner consistent with 72.11(1)“a” pertaining to miscellaneous structures, obstructions, or deposits.

b. Levees. Levees protecting excavations shall meet the requirements of 72.11(1)“a” pertaining to miscellaneous structures, obstructions, or deposits.

c. Control of surface runoff into rock quarries. When the department investigates an application for approval of excavation of a quarry in carbonate rock on a floodplain or floodway, the department shall consider the potential for pollution of an underground watercourse or basin from drainage of surface water into the quarry. If available information including topographic and geological information support a finding that drainage of surface water into the quarry would constitute a violation of the permit requirement in Iowa Code section 455B.268(3) and might cause pollution of an underground watercourse or basin if not controlled, then the department shall require that the applicant either request a permit under Iowa Code section 455B.268(3) and 567—51.5(455B) to authorize drainage of surface water into the quarry, or construct and maintain a means of controlling drainage of surface water which would otherwise drain into the quarry.

72.11(3) Structures or materials across a channel. The following criteria shall apply to structures or materials such as riprap that span the channel of a stream or river and do not meet the thresholds of 567—73.3(455B):

a. The location and design of the structure shall not adversely affect the fisheries or recreational use of the stream.

b. The pool created by the structure shall not adversely affect drainage on lands not owned or under easements by the applicant.

c. The structure shall be hydraulically designed to submerge before bankfull stage is reached in the stream channel in order that increased or premature overbank flooding does not occur. Where this cannot be reasonably accomplished in order for the structure to fulfill its intended purpose, the applicant shall demonstrate that any increased flooding will affect only lands owned or controlled by the applicant.

d. For projects that include significant appurtenant structures or works outside the stream channel, the combined effect of the total project shall not create more than one foot of backwater during floods which exceed the flow capacity of the channel, unless the proper lands, easements, or rights-of-way are obtained.

e. The structure shall be capable of withstanding the effects of normal and flood flows across its crest and against the abutments with erosion protection added as required to prevent failure of the structure during flood events.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.12 Reserved.

567—72.13(455B) Animal feeding operation structures. The following criteria shall apply to animal feeding operation structures:

72.13(1) *Confinement feeding operation structures located on the floodplain of a major water source.* As required by 567—Chapter 65, confinement feeding operation structures shall not be constructed on land that would be inundated by Q100 and is adjacent to a major water source. Placing fill material on floodplain land to elevate the land above the Q100 level will not be considered as removing the land from the one hundred year floodplain for the purpose of this subrule.

72.13(2) *Other animal feeding operation structures.* The following criteria shall apply to animal feeding operation structures located on the floodplain of any water source and confinement feeding operation structures located on the floodplain of a water source other than a major water source:

a. Location. Such structures shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

b. Flood protection. Flood protection for such structures shall be provided to the level necessary for high damage potential buildings or building complexes, pursuant to 567—72.5(455B).

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.262, 455B.264, 455B.270, 455B.275, 455B.277, 459.102 and 459.301.

567—72.14 to 72.29 Reserved.

DIVISION II
GENERAL CRITERIA

567—72.30(455B) General conditions. Department orders approving an activity or project shall be subject to the following conditions:

72.30(1) *Maintenance.* The applicant and any successor in interest to the real estate on which the project or activity is located shall be responsible for proper maintenance.

72.30(2) *Responsibility.* No legal or financial responsibility arising from the construction or maintenance of the approved works shall attach to the state of Iowa or the agency due to the issuance of an order or administrative waiver.

72.30(3) *Lands.* The applicant shall be responsible for obtaining such government licenses, permits, and approvals, and lands, easements, and rights-of-way which are required for the construction, operation, and maintenance of the authorized works.

72.30(4) *Change in plans.* No material change from the plans and specifications approved by the department shall be made unless authorized by the department.

72.30(5) *Revocation of order.* A department order may be revoked if construction is not completed within the period of time specified in the department order.

72.30(6) *Performance bond.* A performance bond may be required when necessary to secure the construction, operation, and maintenance of approved projects and activities in a manner that does not create a hazard to the public's health, welfare, and safety. The amount and conditions of such bond shall be specified as special conditions in the department order.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.31(455B) Waiver. A request for a waiver to this chapter shall be submitted in writing pursuant to 561—Chapter 10. The contents of a petition for waiver shall include information pursuant to 561—10.9(17A,455A).

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.32(455B) Protected stream information. The following describes the waiver procedure and the relation of hydrologically connected streams to protected streams:

72.32(1) *Protected streams variance procedure.* The variance shall be requested as part of the permit application and review process provided for in 567—70.3(17A,455B,481A) to 567—70.5(17A,455B,481A) and decisions on the variance request may be appealed in accordance with

567—70.6(17A,455B,481A). If the applicant is denied a permit to channelize a protected stream, the applicant may appeal to the environmental protection commission. The appeal will normally be heard by an administrative law judge but the applicant may request that the commission hear the appeal directly. If a proposed decision of an administrative law judge would affirm the denial of the permit, the applicant may appeal the administrative law judge's decision to the commission. If, on appeal, the commission affirms the denial of the permit, the applicant may appeal to the district court.

72.32(2) *Hydrologically connected streams.* Streams or waters that are hydrologically connected to protected streams are not protected streams unless specifically listed as protected streams in 72.50(2). The environmental protection commission considers the streams and waters that are hydrologically connected to streams proposed to become protected streams as one of the factors in the decision-making process to add streams to the list of protected streams in a rule-making procedure. 72.51(7) lists the other factors that affect the decision.

72.32(3) *Protected stream activities.* Protected stream status does not prohibit bank stabilization measures; tree maintenance or removal; maintenance or installation of tile outlets; machinery crossings, including concrete drive-throughs and bridges; boat or canoe ramps; or other structures permitted by the department; nor restrict riparian access to the protected stream for such uses as livestock watering or grazing. Protected stream status does not affect current cropping practices or require the establishment or maintenance of buffer strips, filter strips, or fences along protected streams except as may be required to mitigate environmental damage associated with a channel change on a protected stream.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.262, 455B.264, 455B.270, 455B.275, 455B.277, 459.102 and 459.301.

567—72.33 to 72.49 Reserved.

DIVISION III PROTECTED STREAM DESIGNATION PROCEDURE

567—72.50(455B) Protected streams.

72.50(1) *Protected streams defined.* Protected streams shall include streams designated as protected streams pursuant to the procedures of 567—72.51(455B), which upon designation will be listed in 72.50(2). Streams hydrologically connected to protected streams are not protected streams unless specifically listed as protected streams in 72.50(2).

72.50(2) *List of protected streams.* Streams designated as protected streams are the following:

ADAIR COUNTY

Middle River, east county line to confluence with unnamed creek (NE 1/4, S36, T76N, R30W, Adair Co.);

ALLAMAKEE COUNTY

Bear Creek, mouth (S1, T99N, R6W, Allamakee Co.) to west county line;
 Clear Creek, mouth (S35, T100N, R5W, Allamakee Co.) to north line of S15, T100N, R5W;
 Clear Creek, mouth (S29, T99N, R3W, Allamakee Co.) to west line of S25, T99N, R4W;
 Cota Creek, mouth to west line of S10, T97N, R3W;
 Dousman Creek, mouth (S33, T96N, R3W, Allamakee Co.) to south county line;
 French Creek, mouth to east line of S23, T99N, R5W;
 Hickory Creek, mouth to south line of S28, T96N, R5W;
 Irish Hollow Creek, mouth to north line of S17, T100N, R4W;
 Little Paint Creek, mouth to north line of S30, T97N, R3W;
 Norfolk Creek, mouth to confluence with Teeple Creek (S24, T97N, R6W);
 Paint Creek (a.k.a. Pine Creek), mouth (S9, T99N, R6W, Allamakee Co.) to west county line;
 Paint Creek, mouth (S15, T96N, R3W, Allamakee Co.) to road crossing S18, T97N, R4W;
 Patterson Creek, mouth to east line of S3, T98N, R6W;
 Silver Creek, mouth (S4, T99N, R5W, Allamakee Co.) to south line of S31, T99N, R5W;

Suttle Creek, mouth (S17, T96N, R4W, Allamakee Co.) to south county line;
Teeple Creek, mouth (S24, T97N, R6W, Allamakee Co.) to spring source in S11, T97N, R6W;
Trout Run, mouth in S16, T98N, R4W through one mile reach;
Unnamed tributary to Village Creek (a.k.a. Erickson Spring Branch), mouth to west line of S23, T98N, R4W;
Unnamed tributary to the Yellow River (a.k.a. Bear Creek), mouth to north line of S12, T96N, R5W;
Upper Iowa River, from Lane's Bridge at river mile 6 to west county line;
Village Creek, mouth to west line of S19, T98N, R4W;
Waterloo Creek, mouth (S35, T100N, R6W) to north county line;
Wexford Creek, mouth to west line of S25, T98N, R3W;
Yellow River, mouth to west county line;

APPANOOSE COUNTY

Chariton River, Highway 2 (S27, T69N, R17W, Appanoose Co.) to Rathbun Lake Dam (S35, T70N, R18W, Appanoose Co.);

BENTON COUNTY

Bear Creek, east county line to confluence with Opossum Creek (S 5/8, T84N, R9W, Benton Co.);
Bear Creek, mouth (S21, T86N, R10W, Benton Co.) to confluence with unnamed creek (NE1/4, NE 1/4, S2, T86N, R10W, Benton Co.);
Cedar River, east county line to north county line;
Iowa River, south county line to west county line;
Lime Creek, mouth (S4, T86N, R10W, Benton Co.) to north county line;
Prairie Creek, mouth (S10, T85N, R10W, Benton Co.) to confluence with unnamed creek (S36, T86N, R10W, Benton Co.);
Salt Creek, mouth (S31, T82N, R12W, Benton Co.) to west county line;
Wild Cat Creek, mouth (S8, T84N, R9W, Benton Co.) to confluence with unnamed creek (W1/2, S33, T84N, R10W, Benton Co.);
Wolf Creek, north county line to west county line;

BLACK HAWK COUNTY

Black Hawk Creek, mouth (S22, T89N, R13W, Black Hawk Co.) to west county line;
Cedar River, east county line to north county line;
Crane Creek, mouth (S26, T90N, R11W, Black Hawk Co.) to confluence with unnamed creek (S3, T90N, R12W, Black Hawk Co.);
Shell Rock River, mouth (S4, T90N, R14W, Black Hawk Co.) to north county line;
Wapsipinicon River, east county line to north county line;
West Fork Cedar River, mouth (S10, T90N, R14W, Black Hawk Co.) to west county line;
Wolf Creek, mouth (S19, T87N, R11W, Black Hawk Co.) to south county line;

BOONE COUNTY

Big Creek, south county line to confluence with unnamed creek (NW 1/4, S34, T82N, R25W, Boone Co.);
Bluff Creek, mouth (S22, T84N, R27W, Boone Co.) to Don Williams Lake Outlet (S5, T84N, R27W, Boone Co.);
Des Moines River, south county line to north county line;

BREMER COUNTY

Cedar River, south county line to north county line;
Shell Rock River, south county line to west county line;
Wapsipinicon River, south county line to north county line;

BUCHANAN COUNTY

Cedar River, south county line to west county line;
Lime Creek, south county line to confluence with unnamed creek (S1, T87N, R10W, Buchanan Co.);
South Fork Maquoketa River, east county line to confluence with major unnamed creek (S4, T90N, R7W, Buchanan Co.);
Wapsipinicon River, south county line to west county line;

BUENA VISTA COUNTY

Little Sioux River, north county line to north county line (entire length in county);

North Raccoon River, south county line to the north line of the NW 1/4, SE 1/4, S12, T90N, R36W, Buena Vista Co.;

BUTLER COUNTY

Shell Rock River, east county line to north county line;

West Fork Cedar River, east county line to west county line;

CALHOUN COUNTY

Camp Creek, mouth (S7, T86N, R34W, Calhoun Co.) to confluence with unnamed creek (NE1/4, NE 1/4, S33, T87N, R34W, Calhoun Co.);

Cedar Creek, south county line to confluence with unnamed creek (S 1/2, S34, T86N, R32W, Calhoun Co.);

Lake Creek, mouth (S23, T86N, R34W, Calhoun Co.) to confluence with D.D. 13 (S33, T88N, R32W, Calhoun Co.);

North Raccoon River, south county line to west county line;

CARROLL COUNTY

Middle Raccoon River, south county line to confluence with unnamed creek (SE 1/4, S15, T84N, R35W, Carroll Co.);

North Raccoon River, east county line to north county line;

CEDAR COUNTY

Cedar River, south county line to west county line;

Rock Creek, mouth (S2, T79N, R3W, Cedar Co.) to confluence with West Rock Creek (S11, T81N, R3W, Cedar Co.);

Sugar Creek, south county line to confluence with unnamed creek (S35, T80N, R2W, Cedar Co.);

Wapsipinicon River, east county line to north county line;

CERRO GORDO COUNTY

Beaverdam Creek, south county line to confluence with unnamed creek (S12, T95N, R22W, Cerro Gordo Co.);

Shell Rock River, east county line to north county line;

Spring Creek, mouth (S28, T97N, R20W, Cerro Gordo Co.) to confluence with Blair Creek (S9, T97N, R20W, Cerro Gordo Co.);

Willow Creek, mouth (S3, T96N, R20W, Cerro Gordo Co.) to confluence with Clear Creek (S16, T96N, R21W, Cerro Gordo Co.);

Winnebago River, east county line to west county line (entire length in county);

CHEROKEE COUNTY

Little Sioux River, south county line to north county line;

Maple River, south county line to confluence with unnamed creek (N 1/2, S29, T91N, R39W, Cherokee Co.);

Mill Creek, confluence with Willow Creek (S1, T93N, R41W, Cherokee Co.) to north county line;

CHICKASAW COUNTY

Cedar River, south county line to west county line;

Crane Creek, east county line to confluence with unnamed creek (NE 1/4, S25, T95N, R11W, Chickasaw Co.);

Little Cedar River, mouth (S20, T94N, R14W, Chickasaw Co.) to west county line;

Wapsipinicon River, south county line to north county line;

CLAY COUNTY

Little Sioux River, west county line to north county line (entire length in county);

Lost Island Outlet, mouth (S35, T96N, R36W, Clay Co.) to County Road M 54 (S24, T96N, R36W, Clay Co.);

Muddy Creek, mouth (S15, T96N, R36W, Clay Co.) to County Road B 17 (north line, S23, T97N, R36W, Clay Co.);

Ocheyedan River, mouth (S13, T96N, R37W, Clay Co.) to confluence with Stoney Creek (S7, T96N, R37W, Clay Co.);

Prairie Creek, mouth (S26, T96N, R36W, Clay Co.) to confluence with unnamed creek (SE1/4, S35, T96N, R37W, Clay Co.);

Stoney Creek, mouth (S7, T96N, R37W, Clay Co.) to Highway 18 (S31, T96N, R37W, Clay Co.);

CLAYTON COUNTY

Bear Creek, mouth (S34, T92N, R4W, Clayton Co.) to west line of S23 T91N, R5W, Clayton Co.;

Bloody Run, mouth (S15, T95N, R3W) to source at Spook Cave;

Bloody Run Creek (a.k.a. Grimes Hollow), mouth (S36, T91N, R3W) to south county line;

Brownfield Creek, mouth to spring source (S31, T91N, R3W);

Buck Creek, mouth (S29, T93N, R2W, Clayton Co.) to west line of S9, T93N, R3W;

Cox Creek, mouth (S21, T92N, R5W, Clayton Co.) to south line S12, T91N, R6W, Clayton Co.;

Dry Mill Creek, mouth to west line of S9, T93N, R4W;

Elk Creek, mouth (S36, T92N, R4W, Clayton Co.) to south county line;

Ensign Creek, mouth (S28, T92N, R6W, Clayton Co.) to spring source (S29, T92N, R6W, Clayton Co.);

Hewett Creek, mouth to south line of S29, T92N, R6W;

Kleinlein Creek (a.k.a. Spring Creek), mouth to spring source (S10, T91N, R6W);

Maquoketa River, south county line to west county line;

Miners Creek, mouth to west line of S1, T92N, R3W;

Mink Creek, mouth (S30, T93N, R6W) to west county line;

Mossey Glen Creek, mouth (S3, T91N, R5W) to south line of S10, T91N, R5W, Clayton Co.;

North Cedar Creek, mouth (S8, T94N, R3W) to source;

Pecks Creek, mouth to south line of S15, T91N, R3W;

Pine Creek, mouth (S26, T91N, R4W) to confluence with Brownfield Creek (S25, T91N, R4W);

Point Hollow Creek (a.k.a. White Pine Creek), mouth (S31, T91N, R2W) to south county line;

Roberts Creek, mouth (SE 1/4, S25, T93N, R5W, Clayton Co.) to confluence with an unnamed creek (SE 1/4, S15, T95N, R6W, Clayton Co.);

Sny Magill Creek (a.k.a. Magill Creek), mouth to source;

South Cedar Creek (a.k.a. Cedar Creek), mouth (S33, T92N, R3W, Clayton Co.) to north line of S30, T93N, R3W, Clayton Co.;

Steeles Branch, mouth (S26, T91N, R4W) to south line S32, T91N, R4W, Clayton Co. (entire length in county);

Turkey River, confluence with Volga River to west county line;

Unnamed tributary to Sny Magill Creek (a.k.a. West Fork Sny Magill Creek), mouth (S7, T94N, R3W) to west line of S7, T94N, R3W;

Volga River, mouth (S26, T92N, R4W, Clayton Co.) to west county line;

CLINTON COUNTY

Elk River, mouth (S20, T83N, R7E, Clinton Co.) to confluence with North Branch Elk River (S10, T83N, R6E, Clinton Co.);

Wapsipinicon River, mouth (S13, T80N, R5E, Clinton Co.) to west county line (entire length in county);

CRAWFORD COUNTY

Boyer River, south county line to north county line;

DALLAS COUNTY

Des Moines River, east county line to north county line (entire length in county);

Middle Raccoon River, mouth (S9, T78N, R29W, Dallas Co.) to west county line (entire length in county);

North Raccoon River, mouth (S21, T78N, R27W, Dallas Co.) to north county line (S5, T81N, R29W, Dallas Co.) (entire length in county);

Raccoon River, east county line to confluence with North Raccoon River (S21, T78N, R27W, Dallas Co.);

DAVIS COUNTY

Des Moines River, east county line to north county line (entire length in county);

DECATUR COUNTY

Thompson River, Highway 69 (S35, T68N, R26W, Decatur Co.) to west county line;

DELAWARE COUNTY

Bloody Run Creek (a.k.a. Grimes Hollow), north county line to spring source (S3, T90N, R3W);

Coffins Creek, mouth (S19, T89N, R5W, Delaware Co.) to confluence with Prairie Creek (S29, T89N, R6W, Delaware Co.);

Elk Creek, north county line to confluence with unnamed creek (center, S13, T90N, R4W, Delaware Co.);

Fenchel Creek, mouth (S5, T90N, R6W) to Richmond Springs (center of S4, T90N, R6W);

Fountain Spring Creek (a.k.a. Odell Branch), mouth (SE 1/4, S10, T90N, R4W) to confluence with South Branch Fountain Spring Creek (SE 1/4, S16, T90N, R4W);

Little Turkey River, north county line to south line of S11, T90N, R3W;

Maquoketa River, south county line to north county line;

Sand Creek, mouth (S9, T88N, R5W, Delaware Co.) to confluence with major unnamed creek (SW 1/4, S11, T88N, R6W, Delaware Co.);

Schechtman Branch, mouth to south line of S14, T90N, R4W;

South Branch Fountain Spring Creek, mouth (S16, T90N, R4W) to spring source (S16, T90N, R4W);

South Fork Maquoketa River, mouth (S16, T90N, R6W, Delaware Co.) to west county line;

Spring Branch, mouth (S10, T88N, R5W) to major spring source, north of Highway 20 (S35, T89N, R5W, Delaware Co.);

Steeles Branch, north county line to west line of S5, T90N, R4W, Delaware Co. (entire length in county between S4, T90N, R4W and west line of S5, T90N, R4W);

Twin Springs Creek, mouth (S2, T90N, R4W) to spring source (S12, T90N, R4W);

DES MOINES COUNTY

Cedar Creek, mouth (S1, T69N, R5W, Des Moines Co.) to Geode Lake Dam;

Cedar Creek, west county line to confluence with unnamed creek (S18, T70N, R4W, Des Moines Co.);

Flint Creek, mouth (S28, T70N, R2W, Des Moines Co.) to confluence with unnamed creek (NW 1/4, S21, T71N, R4W, Des Moines Co.);

Skunk River, mouth (S8, T68N, R2W, Des Moines Co.) to east county line (entire length in county);

DICKINSON COUNTY

Little Sioux River, south county line to confluence with West Fork Little Sioux River (S7, T99N, R37W, Dickinson Co.);

DUBUQUE COUNTY

Bloody Run, mouth (S34, T90N, R2E) to west line of S21, T90N, R2E;

Catfish Creek, mouth (S5, T88N, R3E, Dubuque Co.) to source;

Cloie Branch, mouth (S5, T89N, R2E) to west line of S5, T89N, R2E;

Hogans Branch, mouth (S35, T89N, R1W) to west line of S9, T88N, R1W;

Little Maquoketa River, mouth (S26, T90N, R2E, Dubuque Co.) to north line of NE 1/4, S5, T88N, R1W, Dubuque Co.;

Middle Fork Little Maquoketa River, west line of S31, T90N, R1E to north line of S33, T90N, R1W;

Point Hollow Creek (a.k.a. White Pine Creek), north county line to spring source (S8, T90N, R2W);

Tete des Morts Creek (a.k.a. Tete des Morts River), mouth (S34, T88N, R4E, Dubuque Co.) to south county line (S34, T88N, R4E, Dubuque Co.);

EMMET COUNTY

Brown Creek, mouth (S24, T99N, R34W, Emmet Co.) to Highway 9 (S13, T99N, R34W, Emmet Co.);

Des Moines River, south county line to north county line;

East Fork Des Moines River, east county line to Tuttle Lake Outlet (S13, T100N, R32W, Emmet Co.);

FAYETTE COUNTY

Bass Creek, mouth (S3, T95N, R9W) to west line of S3, T95N, R9W;

Bear Creek, mouth (S8, T92N, R7W, Fayette Co.) to west line of S6, T92N, R7W;

Bell Creek, mouth (S10, T94N, R7W) to west line of S8, T94N, R7W;
Brush Creek, mouth (S26, T93N, R7W, Fayette Co.) to east line of S17, T92N, R7W, Fayette Co.;
Crane Creek, mouth (S31, T95N, R9W, Fayette Co.) to west county line;
Grannis Creek, mouth (S30, T93N, R7W), to west line of S36, T93N, R8W, Fayette Co.;
Little Turkey River, mouth (S18, T95N, R8W, Fayette Co.) to north county line;
Maquoketa River, east county line to north line of S24, T91N, R7W;
Mink Creek, east county line to west line of S15, T93N, R7W;
North Branch Volga River, mouth (S33, T93N, R9W, Fayette Co.) to confluence with unnamed creek (S8, T93N, R9W, Fayette Co.);
Otter Creek, mouth to confluence with unnamed tributary (a.k.a. Glovers Creek) in S22, T94N, R8W;
Turkey River, east county line to north county line;
Unnamed tributary to Otter Creek (a.k.a. Glovers Creek), mouth (S22, T94N, R8W) to west line of S15, T94N, R8W;
Volga River, east county line to confluence with an unnamed creek (NW 1/4, NE 1/4, SE 1/4, S24, T93N, R10W, Fayette Co.);

FLOYD COUNTY
Cedar River, east county line to north county line;
Little Cedar River, east county line to north county line;
Rock Creek, mouth (S24, T97N, R17W, Floyd Co.) to north county line (entire length in county);
Shell Rock River, south county line to west county line;
Winnebago River, mouth (S14, T95N, R18W, Floyd Co.) to west county line;

FRANKLIN COUNTY
Beaver Creek, east county line to road crossing (S28, T90N, R19W, Franklin Co.);
Beaverdam Creek, mouth (S19, T93N, R19W, Franklin Co.) to north county line;
Iowa River, south county line to west county line (entire length in county);
Maynes Creek, confluence with unnamed creek (S12, T91N, R19W, Franklin Co.) to confluence with unnamed creek (S30, T91N, R20W, Franklin Co.);
Otter Creek, mouth (S28, T92N, R19W, Franklin Co.) to County Road C 23 (north line of S31, T93N, R20W, Franklin Co.);
West Fork Cedar River, east county line to confluence with Beaverdam & Bailey Creeks (S19, T93N, R19W, Franklin Co.);

GREENE COUNTY
Cedar Creek, mouth (S33, T85N, R32W, Greene Co.) to north county line;
North Raccoon River, south county line to west county line (entire length in county);

GRUNDY COUNTY
Black Hawk Creek, east county line to confluence with Minnehaha Creek (S7, T87N, R16W, Grundy Co.);
Wolf Creek, east county line to confluence with unnamed creek (S32, T86N, R17W, Grundy Co.);

GUTHRIE COUNTY
Middle Raccoon River, Lake Panorama (S15, T80N, R31W, Guthrie Co.) to north county line;
Middle Raccoon River, east county line to Lake Panorama Outlet (S31, T80N, R30W, Guthrie Co.);

HAMILTON COUNTY
Boone River, west county line to north county line;
Des Moines River, west county line to west county line (entire length in county);
Eagle Creek, mouth (S6, T89N, R25W, Hamilton Co.) to north county line;
White Fox Creek, mouth (S33, T89N, R25W, Hamilton Co.) to north county line;

HANCOCK COUNTY
East Fork Iowa River, south county line to confluence with Galls Creek (S12, T95N, R24W, Hancock Co.);
West Fork Iowa River, south county line to County Road B 55 (north line of S31, T95N, R24W, Hancock Co.);
Winnebago River, east county line to north county line (entire length in county);

HARDIN COUNTY

Iowa River, south county line to north county line;

School Creek, mouth (S28, T89N, R20W, Hardin Co.) to confluence with unnamed creek (S16, T89N, R20W, Hardin Co.);

South Fork Iowa River, mouth (S4, T86N, R19W, Hardin Co.) to Highway 359 (S11, T88N, R22W, Hardin Co.);

HENRY COUNTY

Cedar Creek, mouth (S9, T71N, R7W, Henry Co.) to west county line (entire length in county);

Cedar Creek, upper extent of Geode Lake (S25, T70N, R5W, Henry Co.) to east county line;

Crooked Creek, west county line to north county line;

Skunk River, south county line to west county line (NW 1/4, S30, T73N, R7W, Henry Co.)(entire length in Henry Co.);

HOWARD COUNTY

Beaver Creek, mouth (S19, T100N, R12W, Howard Co.) to south line of S29, T100N, R13W;

Bohemian Creek, east county line to west line of S2, T97N, R11W;

Chialk Creek, mouth (S1, T98N, R11W, Howard Co.) to north line S36, T99N, R11W, Howard Co.;

Nichols Creek (a.k.a. Bigalks Creek), east county line to west line of S23, T100N, R11W;

Staff Creek, mouth to west line of S27, T100N, R14W;

Turkey River, east county line to confluence with South Branch Turkey River (S2, T98N, R12W, Howard Co.);

Upper Iowa River, all of the river located in Howard County;

Wapsipinicon River, south county line to west county line;

HUMBOLDT COUNTY

Des Moines River, south county line to north line S7, T92N, R30W, Humboldt Co.;

East Fork Des Moines River, mouth (S19, T91N, R28W, Humboldt Co.) to north county line;

IDA COUNTY

Little Sioux River, west county line to north county line;

Maple River, west county line to north county line;

IOWA COUNTY

Iowa River, east county line to north county line;

JACKSON COUNTY

Brush Creek, north line of S23, T85N, R3E to north line of S1, T85N, R3E;

Cedar Creek, mouth (S30, T85N, R3E) to east line of S29, T85N, R3E;

Little Mill Creek, mouth to west line of S29, T86N, R4E;

Maquoketa River, mouth (S7, T85N, R6E, Jackson Co.) to west county line (entire length in county);

Mill Creek, mouth (S18, T86N, R5E, Jackson Co.) to confluence with unnamed creek (S1, T86N, R3E, Jackson Co.);

Mineral Creek, mouth (S32, T85N, R1E, Jackson Co.) to west county line;

Ozark Spring Run, mouth (S32, T86N, R1E) to spring source in center of S32, T86N, R1E;

Pleasant Creek (a.k.a. Springbrook), confluence with unnamed creek (E 1/2, S11, T85N, R4E, Jackson Co.) to west line S15, T85N, R4E, Jackson Co.;

South Fork Big Mill Creek, mouth (S8, T86N, R4E, Jackson Co.) to west line S17, T86N, R4E, Jackson Co.;

Storybook Hollow, mouth (S7, T86N, R4E, Jackson Co.) to south line of S12, T86N, R3E, Jackson Co.;

Tete des Morts Creek (a.k.a. Tete des Morts River), north county line (S3, T87N, R4E, Jackson Co.) to confluence with unnamed creek (NW 1/4, S4, T87N, R3E, Jackson Co.);

Unnamed creek, mouth (S1, T86N, R3E, Jackson Co.) to west line S1, T86N, R3E, Jackson Co.;

Unnamed tributary to Lytle Creek, mouth (S7, T86N, R2E) to west line of S11, T86N, R1E;

JEFFERSON COUNTY

Crooked Creek, mouth (S1, T73N, R8W, Jefferson Co.) to east county line;

Skunk River, east county line (east line, S13, T72N, R8W, Jefferson Co.) to north county line (north line, S1, T73N, R8W, Jefferson Co.) (entire length in Jefferson Co.);

JOHNSON COUNTY

Cedar River, east county line to north county line;

Clear Creek, Interstate 380 (S34, T80N, R7W, Johnson Co.) to confluence with unnamed creek (S29, T80N, R8W, Johnson Co.);

Iowa River, south county line (south line, S32, T77N, R5W, Johnson Co.) to Coralville Dam (S22, T80N, R6W, Johnson Co.);

North Branch Old Mans Creek, mouth (S31, T79N, R7W, Johnson Co.) to north line S23, T79N, R8W, Johnson Co.;

JONES COUNTY

Buffalo Creek, mouth (S10, T84N, R4W, Jones Co.) to west county line;

Maquoketa River, east county line to north county line (entire length in county);

Mineral Creek, east county line to west line S29, T85N, R1W, Jones Co.;

Wapsipinicon River, south county line to west county line;

KEOKUK COUNTY

North Skunk River, mouth (S5, T74N, R10W, Keokuk Co.) to west county line;

Skunk River, east county line to confluence with North & South Skunk Rivers (S5, T74N, R10W, Keokuk Co.);

South English River, east county line to confluence with unnamed creek (S6, T77N, R13W, Keokuk Co.);

South Skunk River, mouth (S5, T74N, R10W, Keokuk Co.) to confluence with Olive Branch Creek (S30, T75N, R13W, Keokuk Co.);

KOSSUTH COUNTY

Buffalo Creek, mouth (S20, T97N, R28W, Kossuth Co.) to confluence with North Buffalo Creek (S4, T97N, R27W, Kossuth Co.);

East Fork Des Moines River, south county line to west county line;

LEE COUNTY

Des Moines River, mouth (S34, T65N, R5W, Lee Co.) to west county line (entire length in county);

Skunk River, mouth (S8, T68N, R2W, Lee Co.) to north county line (entire length in county);

LINN COUNTY

Bear Creek, mouth (S21, T84N, R8W, Linn Co.) to west county line;

Buffalo Creek, east county line to Highway 13 (S10, T86N, R6W, Linn Co.);

Cedar River, south county line to west county line;

East Otter Creek, confluence with Otter Creek (S7, T84N, R7W, Linn Co.) to confluence with unnamed creek (S 1/2, S28, T85N, R7W, Linn Co.);

Wapsipinicon River, east county line to north county line;

LOUISA COUNTY

Cedar River, mouth (S20, T75N, R4W, Louisa Co.) to north county line;

Iowa River, mouth to north county line (NW 1/4, S6, T76N, R5W, Louisa Co.) (entire length in county);

Long Creek, mouth (S1, T74N, R4W, Louisa Co.) to west county line;

LUCAS COUNTY

Chariton River, Rathbun Lake (S34, T71N, R20W, Lucas Co.) to Highway 14 (S31, T72N, R21W, Lucas Co.);

White Breast Creek, north county line to confluence with unnamed creek (W 1/2, NW 1/4, S6, T71N, R23W, Lucas Co.);

Wolf Creek, mouth (S15, T71N, R21W, Lucas Co.) to confluence with unnamed creek (NE 1/4, S36, T71N, R22W, Lucas Co.);

LYON COUNTY

Big Sioux River, south county line to north county line;

Little Rock River, mouth (S35, T98N, R46W, Lyon Co.) to confluence with unnamed creek (S10, T98N, R44W, Lyon Co.);

Otter Creek, mouth (S21, T98N, R44W, Lyon Co.) to south county line;

Rock River, south county line to north county line;
MADISON COUNTY
Middle River, east county line to west county line;
Thompson River, south county line to confluence with unnamed creek (NW 1/4, S7, T74N, R29W, Madison Co.);
MAHASKA COUNTY
Des Moines River, south county line to west county line (entire length in county);
North Skunk River, east county line to north county line;
MARION COUNTY
Des Moines River, east county line to west county line (entire length in county);
White Breast Creek, mouth to west county line;
MARSHALL COUNTY
Iowa River, east county line to Marshalltown Center St. Dam (S26, T84N, R18W, Marshall Co.);
Iowa River, confluence with Dowd Creek (S2, T85N, R19W, Marshall Co.) to north county line;
Minerva Creek, mouth (S2, T84N, R19W, Marshall Co.) to confluence with major unnamed creek (NW 1/4, S9, T85N, R20W, Marshall Co.);
Wolf Creek, north county line to north county line (S2, T85N, R17W, Marshall Co.) (entire length in county);
MITCHELL COUNTY
Beaver Creek, mouth to north line of S19, T99N, R15W;
Burr Oak Creek, mouth (S12, T98N, R16W, Mitchell Co.) to north line of S5, T98N, R16W, Mitchell Co.;
Cedar River, south county line to north county line;
Deer Creek, mouth (S23, T99N, R18W, Mitchell Co.) to west county line;
Little Cedar River, south county line to north county line;
Rock Creek, south county line (S14, T97N, R17W, Mitchell Co.) to north line of S26, T98N, R18W, Mitchell Co. (entire length in county between south line of S14, T97N, R17W and north line of S26, T98N, R18W);
Spring Creek, mouth to north line of S8, T97N, R16W;
Turtle Creek, mouth to east line of S7, T99N, R17W;
Wapsipinicon River, east county line to north line of S20, T100N, R15W;
MONONA COUNTY
Maple River, south line (S34, T85N, R43W, Monona Co.) to north county line;
MONROE COUNTY
Des Moines River, east county line to north county line (entire length in county);
MUSCATINE COUNTY
Cedar River, south county line to north county line;
Pine Creek, mouth (S21, T77N, R1E, Muscatine Co.) to confluence with unnamed creek (S26, T78N, R1W, Muscatine Co.);
Sugar Creek, mouth (S17, T78N, R2W, Muscatine Co.) to north county line;
O'BRIEN COUNTY
Little Sioux River, south county line to east county line;
Mill Creek, south county line to confluence with unnamed creek (NE 1/4, S9, T95N, R41W, O'Brien Co.);
PLYMOUTH COUNTY
Big Sioux River, south county line to north county line;
POLK COUNTY
Big Creek, upper extent of Big Creek Lake (S9, T81N, R25W, Polk Co.) to north county line;
Des Moines River, east county line to west county line (entire length in county);
Raccoon River, mouth (S10, T78N, R24W, Polk Co.) to west county line;
RINGGOLD COUNTY
Thompson River, east county line to north county line;

SAC COUNTY

Boyer River, south county line to confluence with unnamed creek (S6, T89N, R37W, Sac Co.);
Indian Creek, mouth (S24, T87N, R36W, Sac Co.) to north line (S20, T87N, R36W, Sac Co.);
North Raccoon River, east county line to north county line;

SCOTT COUNTY

Lost Creek, mouth (S15, T80N, R5E, Scott Co.) to confluence with unnamed creek (NW 1/4, S7, T79N, R5E, Scott Co.);
Wapsipinicon River, mouth (S13, T80N, R5E, Scott Co.) to north county line (NE 1/4, S1, T80N, R1E, Scott Co.) (entire length in county);

SIOUX COUNTY

Big Sioux River, south county line to north county line;
Rock River, mouth (S1, T95N, R48W, Sioux Co.) to north county line;

STORY COUNTY

South Skunk River, confluence with Squaw Creek (S12, T83N, R24W, Story Co.) to north county line;

TAMA COUNTY

Iowa River, east county line to west county line;
Raven Creek, mouth (S25, T83N, R16W, Tama Co.) to confluence with unnamed creek (S6, T82N, R16W, Tama Co.);
Salt Creek, east county line to confluence with South Branch Salt Creek (S29, T84N, R13W, Tama Co.);

UNION COUNTY

Thompson River, south county line to north county line;
Twelve Mile Creek, mouth (S36, T71N, R28W, Union Co.) to Twelve Mile Lake Dam (S12, T72N, R30W, Union Co.);

VAN BUREN COUNTY

Cedar Creek, east county line (SE 1/4, S12, T70N, R8W) to east county line (NE 1/4, S12, T70N, R8W);
Des Moines River, south county line to west county line (entire length in county);

WAPELLO COUNTY

Des Moines River, south county line to west county line (entire length in county);
South Avery Creek, mouth (S31, T73N, R14W, Wapello Co.) to west county line;

WARREN COUNTY

Des Moines River, east county line to north county line (entire length in county);
Middle River, confluence with Clanton Creek (S28, T76N, R25W, Warren Co.) to west county line;
White Breast Creek, east county line to south county line;

WASHINGTON COUNTY

Crooked Creek, south county line to confluence with East and West Fork Crooked Creeks (S24, T74N, R7W, Washington Co.);
English River, mouth (S11, T77N, R6W, Washington Co.) to confluence with South English River (S6, T77N, R9W, Washington Co.);
Iowa River, east county line (east line, S36, T77N, R6W, Washington Co.) to north county line (north line, S2, T77N, R6W, Washington Co.) (entire length in Washington Co.);
Long Creek, east county line to confluence with South Fork Long Creek (S26, T75N, R6W, Washington Co.);
Skunk River, south county line (SE 1/4, S36, T74N, R8W, Washington Co.) to west county line (SW 1/4, S6, T74N, R9W, Washington Co.) (entire length in county);
South English River, mouth (S6, T77N, R9W, Washington Co.) to west county line;

WEBSTER COUNTY

Boone River, mouth (S36, T87N, R27W, Webster Co.) to east county line;
Brushy Creek, west line (S16, T88N, R27W, Webster Co.) to confluence with unnamed creek (S8, T88N, R27W, Webster Co.);
Brushy Creek, mouth (S15, T87N, R27W, Webster Co.) to south line S34, T88N, R27W, Webster Co.;

Deer Creek, mouth (S24, T90N, R29W, Webster Co.) to north line S16, T90N, R29W, Webster Co.;

Des Moines River, south county line to north county line (entire length in county);

Lizard Creek, mouth (S19, T89N, R28W, Webster Co.) to confluence with D.D. #3 (S35, T90N, R30W, Webster Co.);

South Branch Lizard Creek, mouth (S23, T89N, R29W, Webster Co.) to west line S32, T89N, R29W, Webster Co.;

WINNEBAGO COUNTY

Winnebago River, south county line to north county line;

WINNESHIEK COUNTY

Bear Creek (a.k.a. South Bear Creek), east county line to source (a.k.a. Mestad Springs, S29, T100N, R7W);

Bohemian Creek, mouth to west county line;

Canoe Creek, mouth (S25, T99N, R7W, Winneshiek Co.) to west line of S8, T99N, R8W, Winneshiek Co.;

Coon Creek, mouth to road crossing in NW 1/4, S13, T98N, R7W;

Dry Run, mouth to west line of S36, T98N, R9W;

East Pine Creek, mouth (S28, T100N, R9W) to north county line (S10, T100N, R9W);

Martha Creek, mouth to west line of S13, T99N, R10W;

Middle Bear Creek, mouth to north line of S16, T100N, R7W;

Nichols Creek (a.k.a. Bigalk Creek), mouth to west county line;

North Bear Creek, mouth to north county line;

North Canoe Creek, mouth to north line of S2, T99N, R8W;

Paint Creek (a.k.a. Pine Creek), east county line to confluence with unnamed creek (SE 1/4, S11, T99N, R7W, Winneshiek Co.);

Pine Creek, mouth (S10, T99N, R9W) to north county line;

Pine Creek, mouth (S26, T99N, R7W) to north line of S21, T99N, R7W;

Silver Creek, mouth to north line of S26, T100N, R9W;

Smith Creek (a.k.a. Trout River), mouth (S21, T98N, R7W) to south line of S33, T98N, R7W;

Ten Mile Creek, mouth to confluence with Walnut Creek (S18, T98N, R9W);

Trout Creek, mouth (S9, T98N, R7W) to confluence with Smith Creek (S21, T98N, R7W);

Trout Creek, mouth (S23, T98N, R8W) to confluence with unnamed tributary (a.k.a. Trout Run) in S27, T98N, R8W;

Turkey River, south county line to west county line;

Twin Springs creek, mouth (S17, T98N, R8W) through one half mile reach;

Unnamed creek, mouth (SE 1/4, S11, T99N, R7W, Winneshiek Co.) to north line S12, T99N, R7W, Winneshiek Co.;

Unnamed tributary to Trout Creek (a.k.a. Trout Run), mouth (S27, T98N, R8W, Winneshiek Co.) to south line of S27, T98N, R8W;

Unnamed tributary to Upper Iowa River (a.k.a. Casey Springs Creek), mouth (S25, T99N, R9W) to west line of S26, T99N, R9W;

Unnamed tributary to Upper Iowa River (a.k.a. Coldwater Creek), mouth (S32, T100N, R9W) to north county line;

Upper Iowa River, east county line to west county line;

Yellow River, east county line to confluence with North Fork Yellow River (S13, T96N, R7W);

WOODBURY COUNTY

Little Sioux River, confluence with Parnell Creek (S25, T86N, R44W, Woodbury Co.) to east county line;

Maple River, south county line to east county line;

WORTH COUNTY

Deer Creek, east county line to confluence with unnamed creek (east line, S28, T100N, R19W, Worth Co.);

Elk Creek, mouth (S27, T99N, R20W, Worth Co.) to Highway 105 (S5, T99N, R22W, Worth Co.);

Shell Rock River, south county line to north county line;
Winans Creek, mouth (S36, T98N, R22W, Worth Co.) to N/S road crossing (S 1/2, S25, T98N, R22W, Worth Co.);

Winnebago River, south county line (S32, T98N, R21W, Worth Co.) to south county line (S34, T98N, R22W, Worth Co.) (entire length in county);

WRIGHT COUNTY

Boone River, south county line to confluence with Middle Branch Boone River (S2, T93N, R26W, Wright Co.);

Eagle Creek, south county line to confluence with Drainage Ditch No. 9 (S30, T91N, R25W, Wright Co.);

East Fork Iowa River, mouth (S19, T93N, R23W, Wright Co.) to north county line;

Iowa River, east county line (S13, T90N, R23W, Wright Co.) to confluence with East and West Fork Iowa Rivers (S19, T93N, R23W, Wright Co.) (entire length in county);

West Fork Iowa River, mouth (S19, T93N, R23W, Wright Co.) to north county line;

White Fox Creek, south county line to confluence with unnamed creek (E 1/2, SE 1/4, S36, T91N, R25W, Wright Co.).

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.51(455B) Protected stream designation procedure.

72.51(1) Eligible petitioners. Any state agency, governmental subdivision, association or interested person may petition the commission, according to the rules of this division, to designate a stream as a protected stream. However, if the stream had been the subject of a similar petition filed within the past two years, the commission shall not accept a petition except upon a majority vote.

72.51(2) Content of petition. The petition for protected stream designation shall contain the following: (1) names, addresses, and the telephone numbers of the petitioners; (2) location of the stream nominated for designation; (3) reasons why the stream is nominated, each reason being stated in a separate numbered paragraph; and (4) adequate evidence supporting the reasons for nomination. Eleven copies of the petition shall be filed with the department.

72.51(3) Department review of petition. Upon receipt of a petition for designation of a stream as a protected stream, the department shall make an initial determination as to whether the petition complies with 72.51(2) and whether the stream has a sufficient number of environmental amenities listed in 72.51(7) that further investigation is warranted. If the department finds the petition not in compliance with 72.51(7) or that further investigation is not warranted, agency proceedings to designate the nominated stream as protected shall cease and the petitioner shall be notified of the reasons for refusing to accept and act upon the petition. A petitioner aggrieved by the department's decision may appeal the decision within 30 days to an executive committee of at least three commission members.

72.51(4) Notice of initiation of protected stream designation proceedings. Upon department acceptance of a petition nominating a stream for protected stream designation, the department shall do the following:

a. Notice of intended action. Publish a notice of intended action in the Iowa Administrative Bulletin, the content of which identifies the nominated stream and requests public input into the protected stream designation procedure.

b. Commission notification. Notify the commission at the next meeting of the filing of a petition for protected stream designation.

c. Interested agency notification. Notify regional planning commissions, county boards of supervisors, city councils, soil conservation districts through which the nominated stream runs, the fish and wildlife bureaus of the department, the soil conservation and water quality division of the department of agriculture and land stewardship, the department of agriculture and land stewardship and the Iowa geological survey.

d. Countywide notification. Publish notice of the filing of the petition in a newspaper of general circulation for two consecutive weeks in each county in which the nominated stream is located.

72.51(5) Department investigation report. Upon department acceptance of a petition nominating a stream for protected stream designation, the department shall do the following:

a. Investigation. Supervise a field staff investigation of the stream nominated for protected stream status for the purpose of assessing the effect that extending department floodplain regulation would have on the factors listed in 72.51(7);

b. Report. File a report with the commission at a monthly commission meeting held within one year after the notice of intended action was published; the report shall specifically state findings of fact or each reason alleged in the petition in support of a protected stream designation and convey a staff recommendation, including any minority recommendations and recommendations of other governmental bodies and interested persons on whether or not the stream should be regulated;

c. Interagency coordination. Invite the fish and wildlife bureaus of the department, the Iowa geological survey, and any other agency or governmental subdivision expressing an interest in the proceeding to participate in the field investigation and preparation of the report, and request their assessment of whether extension of department jurisdiction over the nominated stream would have either an adverse or beneficial impact on their agency's water resource programs.

72.51(6) Commission determination. After receipt of the director's report and the public has had an opportunity to submit written comments and make an oral presentation, the commission shall make a determination in writing whether or not to designate the stream identified in the petition as a protected stream, except that the commission may continue the proceeding as needed to collect or analyze additional data. The commission's determination shall be based on the factors listed in 72.51(7), as applied to the nominated stream and its floodplain, and to other relevant streams and floodplains located in the same watershed as the nominated stream, as well as any underground water system hydrologically connected to the nominated stream.

72.51(7) Basis for protected stream designation. Commission determination of whether or not to classify a stream as a protected stream shall be based on the balancing of the costs and benefits of possible floodplain development as it would affect the following factors: (1) maintenance of stream fishery capacity; (2) water quality preservation; (3) wildlife habitat preservation; (4) flood control; (5) floodplain management; (6) existing floodplain developments; (7) soil erosion control; (8) the needs of agriculture and industry; (9) the maintenance and enhancement of public recreational opportunities; (10) the public's health, welfare and safety; (11) compatibility with the state water plan; (12) property and water rights of landowners; (13) other factors relevant to the control, development, protection, allocation, and utilization of the nominated stream and water hydrologically connected to it.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

567—72.52(455B) Protected stream declassification procedure. The procedure for removing a stream from the list of protected streams in 72.50(2) shall be the same as the rules for designation of a stream as a protected stream, except that all notices, investigations and reports shall be addressed to the issue of declassification.

[ARC 9210C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.262, 455B.264, 455B.270, 455B.275, 455B.277, 459.102 and 459.301.

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¹ Effective date of 2/23/94 for segments incorporated by **ARC 4559A** in 72.50(2) and 72.52 delayed 70 days by the Administrative Rules Review Committee at their meeting held February 14, 1994.

CHAPTER 73
APPROVAL, CONSTRUCTION, USE, MAINTENANCE, REMOVAL,
INSPECTIONS, AND SAFETY OF DAMS

[Prior to 7/1/83, INRC Ch 7]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

DIVISION I
SCOPE AND DEFINITIONS

567—73.1(455B) Scope and applicability. The department regulates the storage of water and the construction and maintenance of dams. Any person who desires to construct, repair, modify, abandon, or remove a dam has a responsibility to determine whether approval is required from the department prior to undertaking any such work.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.2(455B) Definitions. The following definitions apply to this chapter:

“Abandonment” means to render a dam nonimpounding by dewatering and filling the reservoir created by that dam with solid materials and by diverting the natural drainage around the site.

“Acre-foot” means a volume of water that would cover one acre of land one foot deep, equal to 43,560 cubic feet of water.

“Adverse consequences” means negative impacts that may occur upstream, downstream, or at locations remote from the dam. The primary concerns are loss of human life, economic loss including but not limited to property damage, public damages, disruption of public utilities, and environmental impact.

“Appurtenant structures” means structures such as spillways, either in the dam or separate therefrom; the reservoir and its rim; low-level outlet works; and water conduits such as tunnels, pipelines, or penstocks, occurring through either the dam or its abutments.

“Auxiliary spillway” means any secondary spillway that is designed to be operated infrequently.

“Dam owner” means any person who owns, controls, operates, maintains, or manages a dam.

“Hazard potential” means a classification based on the possible incremental adverse consequences that result from the release of water or stored contents due to a failure or misoperation of the dam or appurtenances. The hazard potential classification of a dam does not reflect in any way on the current condition of the dam and its appurtenant structures (e.g., safety, structural integrity, or flood routing capacity).

“Height of dam” means the vertical distance from the top of the dam to the natural bed of the stream or water source measured at the downstream toe of the dam or to the lowest elevation of the outside limit of the dam if it is not across a water source.

“Incremental consequence” means the difference, under the same conditions (e.g., flood, earthquake, or other event), between the consequences that are likely to occur from the failure or misoperation of the dam and appurtenances as compared to the consequences that are likely to occur without such failure or misoperation.

“Permanent storage” means the volume of water expressed in acre-feet that is stored upstream from a dam or in an impoundment up the level of the principal outlet works of the structure.

“Probable” means more likely than not to occur; reasonably expected; realistic.

“Probable maximum flood” means the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in the region, and is derived from probable maximum precipitation, the theoretical greatest depth of precipitation for a given duration that is physically possible over a particular drainage area at a certain time of year. The probable maximum precipitation within designated zones in Iowa has been determined by the National Weather Service. The probable maximum flood for any location within Iowa is determined by the department.

“*Temporary storage*” means the volume of water expressed in acre-feet that may be stored upstream from a dam or in an impoundment above the level of the principal outlet works.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.3(455B) Regulated dams.

73.3(1) *Thresholds.* Dams meeting any of the following thresholds shall be regulated by the department:

- a. A dam with a height of at least 25 feet and a storage of 15 acre-feet or more at the top of the dam elevation; or
- b. A dam with a storage of 50 acre-feet or more at the top of the dam elevation and a height of at least 6 feet; or
- c. A dam that is assigned a hazard potential of high hazard.

73.3(2) *Exceptions.* Road embankments or driveways with culverts are exempt unless such structure serves, either primarily or secondarily, a purpose commonly associated with dams, such as the temporary storage of water for flood control.

73.3(3) *New construction.* Before construction begins, department approval is required for construction of any dam meeting the thresholds of a regulated dam. The proposed dam must meet the criteria outlined in this chapter.

73.3(4) *Existing dams.*

- a. Department approval is required for:
 - (1) Modification, repair, alteration, breach, abandonment, or removal of any existing dam or appurtenant structure beyond the scope of ordinary maintenance if the height of the dam or storage of the dam exceeds the applicable thresholds in this rule.
 - (2) Any change in operating procedures if the height of the dam or storage of the dam exceeds the applicable thresholds in this rule.
- b. Spillway reconstruction, changes in normal water level, and modification of the dam embankment or spillway are examples of modifications that require approval. The dam must meet the criteria outlined in this chapter. Dams found to be unsafe according to 567—73.33(455B) shall be repaired or removed.

73.3(5) *Required upgrades.* Improvements may be required for existing dams in order to reduce the risk of a dam failure.

- a. Existing dams assigned a high hazard potential or significant hazard potential that have been inspected or analyzed and found not to meet the criteria in this chapter will be required to meet the requirements outlined in this chapter for the appropriate hazard potential.
- b. Existing dams assigned a low hazard potential that have been inspected or analyzed and found to have a significant hazard potential or high hazard potential shall be required to be upgraded to meet the requirements outlined in this chapter for the appropriate hazard potential.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.4(455B) Assignment of hazard potential. All existing and proposed dams reviewed by the department shall be assigned a hazard potential. Anticipated future land and impoundment use shall be considered in the determination of hazard potential. The hazard potential shall be determined using the following criteria:

73.4(1) *Low hazard.* A dam shall be classified as “low hazard” if failure of the dam would result in no probable loss of human life, low economic losses, and low public damages.

73.4(2) *Significant hazard.* A dam shall be classified as “significant hazard” if failure of the dam would result in no probable loss of human life but may damage residential structures or industrial, commercial, or public buildings; may negatively impact important public utilities or moderately traveled roads or railroads; or may result in significant economic losses or significant public damages.

73.4(3) *High hazard.* A dam shall be classified as “high hazard” if located in an area where failure would result in probable loss of human life.

73.4(4) *Consideration of changes affecting hazard potential.* In locating the site of a dam and in obtaining easements and rights-of-way, the applicant shall consider the impacts to the hazard potential of a

dam from anticipated changes in land use downstream or adjacent to the impoundment, the operation of the dam, and the potential liability of the dam owner.

73.4(5) *Changes in hazard potential.* Any future changes in downstream land use, development, impoundment use, or critical hydraulic structures shall require a reevaluation of the hazard potential of the dam. If the hazard potential of the dam changes, the dam shall be required to meet all applicable criteria for that hazard potential. This may require additional increases in spillway capacity for the dam. The owner and any other persons responsible for the construction and operation of the dam shall assume all risks for future costs to upgrade a dam in the event there is a change in hazard potential.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.5 to 73.9 Reserved.

DIVISION II
APPROVAL PROCESS

567—73.10(455B) Review and approval process for dam construction, modification, abandonment, or removal.

73.10(1) *Application process.* Application materials are provided by the department. The application shall be submitted by or on behalf of the person or persons who will be the future dam owner or owners. The application shall be signed by the applicant or a duly authorized agent. Completed applications along with supporting information shall be submitted to the department through an online application system or mailed to Iowa Department of Natural Resources, Attn: Joint Application, 502 East 9th Street, Des Moines, Iowa 50319. For dam repairs, abandonment, or removal, the department may waive the requirements of the application process outlined in this rule if the requirements are unnecessary for the application approval or if the dam has been designated as unsafe and immediate temporary emergency stabilization repairs are required to prevent failure of the dam. Permanent repairs or modifications will require review and approval.

73.10(2) *Preliminary application packet.* The preliminary application packet includes the joint application form and requires submittal of preliminary design data prepared by or under supervision of a professional engineer licensed in the state of Iowa or by an engineer working for the United States government. The preliminary design data packet shall contain a report summarizing the preliminary design, hydrologic data and reservoir routing, a hazard potential analysis, preliminary design drawings, the soils and geotechnical engineering analysis, and a list of the engineering references used as the basis for design and construction.

73.10(3) *Project review.* The department shall review a preliminary application packet and provide feedback or concurrence on the initial design and assumptions. After concurrence with the preliminary application packet and upon reception of the final submittal as required by 73.10(4), the department will review the final submittal and issue a decision based on whether the project meets criteria for approval outlined in this chapter.

73.10(4) *Final submittal.* After the department's review of and concurrence with the preliminary submittal, the engineering plans and other engineering information shall be certified by a professional engineer licensed in the state of Iowa, unless prepared by an engineer working for the United States government, and submitted with the following information:

- a. One complete set of certified construction plans;
- b. One complete set of construction specifications;
- c. An operating plan, if required;
- d. Easements, if required;
- e. For high hazard dams, an emergency action plan; and
- f. An engineering design report documenting all aspects of the design of the dam and how the design of the dam meets the criteria outlined in this chapter. The engineering design report shall include the following: hazard potential analysis; hydrology and hydraulic calculations; embankment design and foundation analysis; and structural calculations, where applicable.

73.10(5) *Public notice.* Public notice shall be issued by the department to inform persons who may experience adverse consequences by the permitted project. Adverse consequences may occur through maintenance of the dam and appurtenant structures, spillway discharges, temporary ponding of floodwater behind the dam, or failure of the dam. It is the applicant's responsibility to submit sufficient information with the preliminary application packet and on request to enable the department to accurately identify the owners, occupants, and addresses of affected lands.

73.10(6) *Project approval or disapproval.*

a. Approval. Issuance of a dam construction permit shall constitute approval of a project. The permit may include one or more special conditions when reasonably necessary to implement relevant criteria.

b. Disapproval. A letter to the applicant denying the application shall constitute disapproval of a project.

c. Notice of decision. Copies of the decision shall be mailed or electronically transmitted to the applicant and any person who commented.

73.10(7) *Appeal of decision.* Any person aggrieved by a decision issued under this chapter may file a notice of appeal as governed by 567—Chapter 7.

73.10(8) *General conditions.* Department approvals of a project shall be subject to the following conditions:

a. Change in ownership. The dam owner and any successor in interest to the real estate on which the project or activity is located shall be responsible for notifying the department of change in ownership.

b. Maintenance. The dam owner has a responsibility to maintain the dam and appurtenant structures in a safe condition. Maintenance shall include keeping earthen portions of the dam well vegetated, keeping trees and brush off the dam, preventing and repairing erosion, keeping the spillway free of obstructions, repairing deteriorated structural elements, and performing required maintenance on mechanical appurtenances such as gates.

c. Responsibility. No legal or financial responsibility arising from the construction or maintenance of the approved works shall attach to the state of Iowa or the department due to the issuance of an approval or administrative waiver.

d. Lands. The applicant shall be responsible for obtaining such government licenses, permits, and approvals, and lands, easements, and rights-of-way which are required for the construction, operation, and maintenance of the authorized work.

e. Change in plans. No material change from the plans and specifications approved by the department shall be made unless authorized in writing by the department.

f. Revocation of permit. A department permit may be revoked if construction is not completed within the period of time specified in the department permit.

g. Performance bond. A performance bond may be required when necessary to secure the construction, operation, and maintenance of approved projects and activities in a manner that does not create a hazard to the public's health, welfare, and safety. The amount and conditions of the bond shall be specified as special conditions in the department permit.

h. Construction inspection. For high hazard and significant hazard dams, construction shall be inspected by or under the supervision of a professional licensed engineer in the state of Iowa. The engineer shall prepare and certify as-built plans after completion and a report documenting that the dam was constructed in general conformance with the approved plans (or approved changes) and outlining unusual circumstances encountered during construction. The water storage permit shall not be issued until the department accepts the as-built plans and report.

i. Postconstruction department inspections. A department approval that authorizes construction or modification, operation, and maintenance of a dam for which ongoing inspections are required by these rules shall include a condition stating that the department shall have access to the dam site for such inspections at a reasonable time after notification of the dam owner.

j. Owner inspections. For high hazard and significant hazard dams, the owner is responsible for annual inspections and submission of written inspection reports to the department as required in subrule 73.30(4).

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.11(455B) Water storage permits.

73.11(1) A water storage permit shall be required for all regulated dams in order to legally impound water. No water shall be impounded by a dam or reservoir prior to issuance of a water storage permit.

73.11(2) Application for a dam construction permit shall constitute application for a water storage permit if the appropriate fee (as stated in 567—subrule 50.4(2)) is received with the application.

73.11(3) A water storage permit shall be issued upon a finding by the department that the dam and reservoir are safe to impound water within the conditions prescribed in the dam construction permit and the project meets the following conditions:

a. The proposed storage is for a specified beneficial use such as human or livestock water supply, flood control, water quality, recreation, aesthetic value, erosion control, or low-flow augmentation.

b. The impounding structure can be operated in a manner that will not adversely affect any applicable protected flow in the impounded stream. Protected flows are listed in 567—Chapter 52.

c. For high hazard and significant hazard dams, the water storage permit will not be issued until as-built plans and a construction report have been submitted documenting that the dam has been constructed in general conformance with the approved plans and conditions of the dam construction permit and until the department has conducted an inspection of the dam.

73.11(4) A water storage permit may be modified, canceled, or suspended pursuant to Iowa Code section 455B.271. Conditions of cancellation or suspension of water storage permits shall include draining the lake with any available low-level drain and may include dewatering with other methods or breaching of the dam.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.12 to 73.14 Reserved.

DIVISION III
CRITERIA FOR APPROVAL

567—73.15(455B) General criteria.

73.15(1) *Required findings.* The department shall approve the construction, repair, modification, abandonment, or removal of a dam only after finding that the project is designed in accordance with accepted engineering practice and methods, and in a manner consistent with the applicable department criteria in this rule.

73.15(2) *Waiver.* A request for a waiver to this chapter shall be submitted in writing pursuant to 561—Chapter 10. The contents of a petition for waiver shall include information pursuant to 561—10.9(17A,455A).

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.16(455B) Lands, easements, and rights-of-way. An application for approval of a dam project shall include information showing the nature and extent of lands, easements, and rights-of-way that the applicant has acquired or proposes to acquire to satisfy the following criteria:

73.16(1) Ownership or perpetual easements shall be obtained for the area to be occupied by the dam embankment, spillways, and appurtenant structures, and the permanent or maximum normal pool.

73.16(2) Ownership or easements shall be obtained for temporary flooding of areas that would be inundated by the flood pool up to the top of dam elevation and for spillway discharge areas.

73.16(3) Easements covering areas affected by temporary flooding or spillway discharges shall include provisions prohibiting the erection and usage of structures for human habitation or commercial purposes without prior approval by the department.

73.16(4) As a condition of granting approval of a dam rated less than high hazard, the applicant may be required to acquire control over lands downstream from the dam as necessary to prevent downstream development that would affect the hazard classification of the dam.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.17(455B) Emergency action plans for high hazard dams.

73.17(1) *Emergency action plan required.* All high hazard dams shall be required to have an approved emergency action plan on file with the department. The plan shall include the following:

- a. A statement of purpose;
- b. A project description;
- c. An emergency response process;
- d. An emergency notification plan with flowchart;
- e. Responsibilities of all parties;
- f. A list of emergency preparedness and plan maintenance activities; and
- g. Inundation maps or another acceptable description of the inundated area.

73.17(2) *Emergency action plan maintenance.* The owner of the dam shall keep the emergency action plan up to date. Contact information shall be verified in the plan at least once a year, and an exercise shall be performed at least every five years. The owner of the dam shall keep an up-to-date copy of the emergency action plan on file with the department and with the local county emergency manager.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.18(455B) Encroachment on a confinement feeding operation structure. A dam shall not be constructed or modified so that the ordinary high water of the lake, pond, or reservoir created by the dam is closer than the following distances from a confinement feeding operation structure unless a secondary containment barrier according to 567—subrule 65.15(17) is in place. Measurement shall be from the closest point of the confinement feeding operation structure to the water edge of the lake, pond, or reservoir for a pool level at the elevation of the crest of the auxiliary spillway or at the top of dam elevation if the dam does not have an auxiliary spillway.

73.18(1) The minimum separation between a water source other than a major water source and a confinement feeding operation structure is 500 feet.

73.18(2) The minimum separation between a major water source and a confinement feeding operation structure is 1,000 feet or such distance that the structure is not located on land that would be inundated by Q100, whichever is greater.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.19(455B) Hydrologic and hydraulic criteria.

73.19(1) *Hydrology and hydraulic calculations.* Hydrology and hydraulic calculations shall be submitted in the design report documenting the methods and analysis followed in modeling software selection, inflow design hydrograph determination, and reservoir routing. The hydrology and hydraulics section of the design report shall include design references, inflow hydrograph, reservoir stage storage, and stage discharge curves and clearly identify peak inflows, peak discharges, and reservoir elevations for the design floods.

73.19(2) *Design floods.* The specified freeboard design floods in the table below shall be passed without overtopping of the dam or the dam shall be designed to withstand such overflow. The specified spillway design flood in the table below shall be passed by the principal spillway without need for operation of an auxiliary spillway unless the auxiliary spillway is designed such that erosion is not expected during operation.

Hazard Potential	Freeboard Design Flood	Spillway Design Flood
Low Hazard	Q100	Q10
Significant Hazard	Q1000	Q50
High Hazard	Probable Maximum Flood	Q100

73.19(3) *Precipitation amounts.* The National Oceanic and Atmospheric Administration's NOAA Atlas 14, Precipitation-Frequency Atlas of the United States, Volume 8, Version 2.0, dated 2013, shall be used for the Q10–Q1000 frequency storm events. NOAA Hydrometeorological Report No. 51, Probable Maximum Precipitation Estimates, United States, East of the 105th Meridian, dated 1978, shall be used for the probable maximum precipitation.

73.19(4) *Spatial and temporal rainfall distributions and storm durations.* The design report shall document the sources and methodologies for inflow hydrograph development. Distributions and durations that produce the highest impoundment water level shall be used for design.

73.19(5) *Spillway discharge capacity.* The spillway discharge capacity shall be sufficient to evacuate at least 80 percent of the volume of water temporarily stored during the principal spillway design flood within ten days. If this cannot be accomplished, the auxiliary spillway and freeboard design flood routings shall be made beginning with the impoundment level at the ten-day drawdown elevation.

73.19(6) *Incremental consequence analysis.* An inflow design flood based on an incremental consequence analysis may be developed and submitted to the department for review as an alternative to the design floods stated in 73.19(2). The design flood selected using incremental consequence analysis is the flood above which there is a negligible increase in downstream water surface elevation, velocity, and consequences due to failure of the dam when compared to the same flood without failure. If the department concurs with the analysis, the freeboard design storm may be reduced. The minimum design flood for a high hazard dam shall be Q500. The minimum design flood for low hazard and significant hazard dams shall be Q100.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.20(455B) Spillway design requirements.

73.20(1) Spillways shall be designed to operate safely for the life of the structure and at the discharges and pressures that would be experienced under all flow conditions, including the freeboard design flood.

73.20(2) Spillways shall be provided with a means of piping and seepage control (e.g., drainage diaphragms), antivortex devices, trash racks, or other inlet debris control measures, and stable outlets capable of handling design exit flow velocities.

73.20(3) When a conduit is proposed to be used in a high hazard or significant hazard dam, detailed hydraulic, hydrologic, and structural computations supporting selection of the size and type of pipe to be used shall be provided by the applicant.

73.20(4) Detailed drawings and specifications relating to the installation of the pipe shall include, but not be limited to, construction measures that adequately address critical load bedding, backfill, compaction, joints, and seepage precautions related to installation of the pipe.

73.20(5) Structural computations and drawings shall be submitted for all proposed concrete structures. Drawing details, as necessary, shall be provided showing reinforcement, cutoffs, underdrains/filters, waterstops, construction joints, control joints, and any other details necessary to construct.

73.20(6) If an auxiliary spillway is proposed, it shall be analyzed, designed, and constructed adequately to establish and maintain stability during the passage of design flows without blockage or breaching. Open-channel auxiliary spillways shall have a minimum depth of 2 feet and minimum width of 10 feet and be designed with appropriate curvature and slopes to prevent excessive erosion.

73.20(7) A gated low-level outlet shall be provided for high hazard and significant hazard dams. The gated low-level outlet shall be capable of draining at least 50 percent of the permanent storage behind the dam within ten days. The pipe conduit shall be designed so that negative pressures will not occur at any point.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.21(455B) Embankment design requirements.

73.21(1) The applicant shall document the engineering standards and design references used for dam embankment design. Drawing details, as necessary, shall be provided showing embankment slopes, required additional fill for anticipated settlement, top width, foundation preparation, core trench or cutoff wall, fill materials and methodology, internal seepage controls, and embankment erosion protection.

73.21(2) A geotechnical report shall be submitted for high hazard and significant hazard dams documenting the evaluation of slope stability requirements, anticipated vertical settlement and horizontal elongation, seepage and underseepage potential, whether cathodic protection is needed for metal pipes, and proper construction practices for the soil types and conditions encountered. A stability evaluation shall include end-of-construction, steady-state seepage and sudden-drawdown conditions.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.22(455B) Operating plan. A written operating plan shall be prepared for any dam with gates or other movable structures that must operate or be operated during times of flood or to provide a minimum downstream release rate. Development of the operating plan is considered part of the design process. An operating plan shall include, at a minimum, the following items:

73.22(1) Responsibility. The operating plan shall outline and identify the necessary personnel who will be present to operate the equipment or, in the case of automatic equipment, to monitor it and ensure it is functioning properly.

73.22(2) Operating circumstances. The circumstances under which operation must occur shall be clearly defined, and a means shall be provided to ensure that operating personnel are present when necessary.

73.22(3) Method of operation. The means and methods by which operation is to be conducted shall be clearly defined and shall include, at a minimum, the following items: rates and sequences for opening or closure of gates, target water levels, and target flow rates.

73.22(4) Flood capacity. The operating plan shall allow for safe passage of all floods up to and including the freeboard design flood. Flood discharges through the dam greater than the design peak flood inflows into the impoundment shall not be permitted.

73.22(5) Low flow. The operating plan shall address low flow situations and shall specify a minimum release rate if required by the department and how the minimum release will be provided and maintained.

73.22(6) Equipment. Consideration shall be given to and allowance made for the possible failure of or malfunctioning of the equipment.

73.22(7) Discharge measurement. A means shall be provided to determine the discharge through the control structures, especially where operation is to maintain a minimum downstream flow. Stage discharge tables, streamflow gages or other means of obtaining discharge readings shall be provided. The settings of control structures shall be easily read.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.23(455B) Removal and abandonment of dams. Removal is the draining of the impoundment and removal of all or a significant portion of the embankment. A dam may be abandoned by rendering a dam nonimpounding by dewatering and filling the reservoir with solid materials and by diverting the natural drainage around the site.

73.23(1) Removal requirements. A dam removal project shall meet all of the following requirements:

a. The dam removal plan shall clearly show removal limits and will demonstrate how the proposed construction will render the dam height and storage below thresholds in rule 567—73.3(455B);

b. An impoundment dewatering plan shall be submitted that documents how the water will be released in a controlled manner and not cause upstream erosion or pose a flooding risk downstream;

c. A dam breach plan shall be submitted that demonstrates how the breach process will not pose an increased risk compared to the existing structure; and

d. A sediment disposition plan shall be submitted that provides for stabilization, release, or removal of stored sediment and shall demonstrate no significant adverse consequences on fish and wildlife habitat downstream from the proposed construction.

73.23(2) Abandonment requirements. An abandonment plan shall be submitted documenting the final site stabilization, evidence that the structure will no longer impound water or waterborne materials that would be released in the event of a dam failure, and evidence that the structure will not store water above the thresholds outlined in this chapter.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.24 to 73.29 Reserved.

DIVISION IV
DAM OWNERSHIP, INSPECTIONS, AND ENFORCEMENT

567—73.30(455B) Dam owner responsibilities.

73.30(1) *Operation and maintenance required.* The intent to permanently cease or cause to cease all acts of construction, operation, and maintenance of a dam is prohibited. If any person wishes to be relieved of the responsibilities inherent in the ownership or control of a dam structure, those responsibilities shall be undertaken by another person through sale, transfer, or other means or the dam shall be removed.

73.30(2) *Dam maintenance.* The dam owner shall be required to maintain the dam and appurtenant structures in a safe condition. Maintenance shall include, but not be limited to, keeping earthen portions of the dam well vegetated, keeping trees and brush off the dam, preventing and repairing erosion, keeping spillways and drains free of obstructions, repairing structural deterioration, and performing required maintenance on mechanical appurtenances such as gates. The dam owner shall perform regular inspections to identify potential maintenance problems.

73.30(3) *Dam repairs.* The dam owner shall arrange for performance of engineering investigations when needed to evaluate potential safety problems. The dam owner shall perform any required repairs. When the department determines the need for follow-up inspections, the dam owner may be required to have a qualified person make inspections and prepare written inspection reports at specified intervals.

73.30(4) *Maintenance inspections by dam owner.* The dam owner of a high hazard or significant hazard structure shall be responsible for annual inspections and submission of written inspection reports. Annual inspection reports are due to the department on or before December 1. Inspection reports shall include:

- a. Maintenance work done since the previous annual report;
- b. Observed deficiencies on the dam or appurtenant structures;
- c. Remedial measures necessary and the method and schedule the dam owner proposes to correct the deficiencies found; and
- d. Changes in land use downstream of the dam.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.31(455B) Dam safety inspection program.

73.31(1) *Scope of dam safety inspection program.* Dams subject to inspection under these rules are regulated dams as defined in this chapter. The scope of department staff field inspections normally is limited to visually observable features of dams and their appurtenant structures.

73.31(2) *Purpose of dam safety inspection program.* The general purposes of inspections are as follows: to evaluate the construction, operation, and maintenance of dams; to identify observable deficiencies in dams or appurtenant structures; and to identify other floodplain structures or uses that may affect the hazard potential of a dam or use of an associated impoundment. Inspection reports shall be used by the department in determining whether a proposed dam project complies with applicable criteria and to determine whether any of the following conditions exist:

- a. A permit violation;
- b. A violation of law which requires that a permit be obtained; or
- c. A condition that constitutes a public nuisance by causing unacceptable risk of injury to the public health, safety or welfare.

73.31(3) *Inspections of significant hazard and high hazard dam structures.*

a. *Inspection prior to construction.* A field inspection may be made by the department to determine the hazard potential of the dam and verify the location and plan information upon receipt of an application for approval of construction or modification of a dam.

b. *Inspection during construction.* Construction or modification of a dam structure shall be inspected by an engineer licensed in the state of Iowa or by a trained inspector under the supervision of the engineer. After completion of construction or modification of a dam structure, the engineer shall prepare and submit

a construction report, as-built plans, and a statement that in the engineer's professional opinion the work was conducted in general conformance with the approved plans and specifications.

c. Acceptance inspections. When construction of a dam or modifications thereto is completed, and as-built plans and a construction report have been submitted, the department shall make a field inspection to determine whether visually observable features of the dam and appurtenant structures are consistent with the approved plans and the conditions of the dam construction permit. The department shall thereafter issue the water storage permit or a letter stating that additional work is required for acceptance of construction. Closure of the low-level outlet gate shall not begin until the department has issued the water storage permit.

d. Periodic inspections after acceptance. High hazard structures shall be inspected at least once every two years by the department. Significant hazard structures shall be inspected at least once every five years by the department. Structures poorly maintained or those that require repairs identified by the department shall be inspected more frequently until required maintenance and repairs are completed. The department shall notify the dam owner or agent before each inspection. Each inspection shall assess the condition of the dam and appurtenant structures and the adequacy of operation and maintenance practices. The inspection may include reevaluation of the ability of the dam and appurtenant structures to adequately withstand the hydraulic loadings and pass the appropriate design floods.

73.31(4) Inspections of low hazard dams.

a. Preliminary site evaluation. The department may evaluate the site of a proposed dam from maps and aerial photographs in lieu of a field inspection.

b. Inspection during construction. The applicant shall be responsible for providing supervision of construction by a person experienced in the type of construction involved.

c. Inspection of dams with operating plans. Low hazard dams with operating plans shall be inspected by the department at least once every five years. Any problems noted shall be reported to the dam owner in writing.

d. General inspections of low hazard dams. Low hazard dams may be periodically inspected by the department to determine their condition. Any serious problems noted shall be reported to the dam owner in writing.

73.31(5) Special inspections and investigations. Special inspections and investigations shall be made by department personnel in the following instances:

a. Upon notice or evidence of unauthorized construction;

b. Upon notice or evidence that a dam has failed or is in a condition where failure appears likely, and public damages would result from such failure; or

c. Upon notice or evidence that the hazard classification of a dam may no longer be valid due to changes in downstream conditions.

73.31(6) Inspections by others. At the discretion of the department, an inspection report submitted by a qualified individual may be accepted in lieu of an inspection and report by the department.

73.31(7) Inspection reports. The department shall prepare a report of each inspection and provide a copy to the dam owner. The report shall state the deficiencies observed during the inspection. If appropriate, the report shall detail the actions required to address the noted deficiencies.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.32(455B) Raising or lowering of impoundment levels.

73.32(1) When approval is required. A separate approval is required to temporarily or permanently raise or lower the normal level of water impounded by a regulated dam unless the raising and lowering has been authorized as part of an approved operating plan. Such approval shall be in the form of a letter authorizing the lowering or raising and may be conditioned upon various requirements.

73.32(2) Information required for approval. The applicant shall submit the following information:

a. The date when the raising or lowering will be initiated, the level to which the impoundment will be raised or lowered and, if the raising or lowering is temporary, the anticipated date when the normal water level will be restored; and

b. Evidence that the discharge rate during lowering will not exceed the capacity of the stream channel below the dam.

73.32(3) *Criteria for approval.* The department's review of the raising or lowering of the impoundment includes determining the effects on flooding or flood control for any proposed works and adjacent lands and property; on the wise use and protection of water resources; on the quality of water; on fish, wildlife, and recreational facilities or uses; and on all other public rights and requirements.

73.32(4) *Conditions.* Conditions of approving the temporary or permanent raising or lowering of water levels may include:

- a. Giving prior notice to the director of the local county conservation board or local enforcement officer for the department;
- b. Publicizing the lowering locally in order to notify downstream users, persons who have boats or docks on the impoundment and other persons whose use of the impoundment might be affected; and
- c. Maintaining a minimum release rate as determined by the department during refilling.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

567—73.33(455B) Unsafe dams.

73.33(1) *Procedures for designation of a dam as unsafe.*

a. *Department report.* If after inspection or other investigation the department determines that a dam is unsafe, a report shall be prepared. Copies of the report shall be provided to the dam owner and any other person whom the report identifies as responsible for the unsafe condition of the dam. The report shall identify the problems that cause the dam to be unsafe and recommend action to remedy the unsafe condition.

b. *Opportunity for comment.* The department shall provide the dam owner or other responsible person with a reasonable opportunity to comment on the department report considering the degree and imminence of hazard identified in the department report.

73.33(2) *Criteria for designating a dam as unsafe.* Designation of a dam as unsafe shall be based on one or more of the following findings:

- a. The dam has serious deficiencies in its design, construction, use, maintenance, or physical condition that would contribute to failure or otherwise increase flood damages;
- b. A high hazard or significant hazard dam has inadequate spillway capacity for the size and hazard potential of the dam.

73.33(3) *Department action concerning an unsafe dam.* After completion of the procedures for designating an unsafe dam, the department shall issue an initial decision that may order remedial work depending on the degree and imminence of hazard caused by the unsafe condition. Remedial work may include draining of the impoundment or removal of any structure determined to constitute a public nuisance. Procedures for appealing an initial decision are the procedures in 567—Chapter 7. If the initial decision requires emergency remedial work to abate an imminent danger of failure that would cause significant public damages, the director of the department may request the assistance of the attorney general to seek an appropriate judicial order compelling performance of emergency remedial work.

[ARC 9211C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 4.

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CHAPTER 74
MILLDAMS AND RACES

[Prior to 7/1/83, INRC Ch 6]
[Prior to 12/3/86, Water, Air and Waste Management[900]]
Rescinded IAB 2/20/91, effective 3/27/91.

CHAPTER 75
MANAGEMENT OF SPECIFIC FLOOD PLAIN AREAS

[Prior to 7/1/83, INRC Ch 4]
[Prior to 12/3/86, Water, Air and Waste Management[900]]
Rescinded **ARC 9209C**, IAB 5/14/25, effective 6/18/25

CHAPTER 76
FEDERAL WATER RESOURCE PROJECTS

[Prior to 7/1/83, INRC Ch 8]
[Prior to 12/3/86, Water, Air and Waste Management[900]]
Rescinded **ARC 9209C**, IAB 5/14/25, effective 6/18/25

CHAPTERS 77 to 79
Reserved

TITLE VI
CERTIFICATION OF OPERATORS

CHAPTER 80
Reserved

CHAPTER 81
OPERATOR CERTIFICATION: PUBLIC WATER SUPPLY SYSTEMS
AND WASTEWATER TREATMENT SYSTEMS

[Prior to 7/1/83, DEQ Ch 21]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—81.1(455B) Definitions.

81.1(1) In addition to the definitions, references, and abbreviations in 567—Chapter 40, the following definitions shall apply to this chapter:

“Activated sludge system” means a biological wastewater treatment process in which a mixture of wastewater and sludge floc, produced in a raw or settled wastewater by the growth of microorganisms, is agitated and aerated in the presence of a sufficient concentration of dissolved oxygen, followed by sedimentation. Examples include but are not limited to conventional activated sludge systems, extended aeration activated sludge systems, oxidation ditches, and sequencing batch reactors.

“Advanced aerated lagoon system” means an aerated lagoon system that has been augmented by adding other treatment processes. Examples include but are not limited to covered lagoon systems with enhanced aeration and mixing, the addition of fixed film processes to the lagoon process, or the utilization of algal-based treatment processes.

“Aerated lagoon system” means a lagoon system that utilizes aeration to enhance oxygen transfer and mixing in the cell.

“Aeration” means the process of initiating contact between air and water. Examples include but are not limited to spraying the water in the air, bubbling air through the water, or forcing the air into the water by pressure.

“Average daily pumpage” means the total quantity of water pumped during the most recent one-year period of record divided by 365 days.

“Chlorination” means the addition of a chlorine compound or chlorine gas to water to inactivate pathogenic organisms.

“Classification” means the type of plant or distribution system: wastewater treatment plants, water treatment plants, or water distribution systems.

“Continuing education unit” or *“CEU”* means ten contact hours of participation in an organized education experience approved by an accredited college, university, technical institute, or the department, and must be directly related to the subject matter of the particular certificate to which the credit is being applied.

“Directly related post-high school education” means post-high school education in chemistry, microbiology, biology, math, engineering, water, wastewater, or other curriculum pertaining to plant or distribution system operation.

“Direct responsible charge” or *“DRC”* means, where shift operation is not required, accountability for and performance of active, daily on-site operation of a plant or distribution system, or of a major segment of a plant or distribution system. Where shift operation is required, DRC means accountability for and performance of active, daily on-site operation of an operating shift, or a major segment of a plant or distribution system. A city manager, superintendent of public works, city clerk, council member, business manager, or other administrative official shall not be deemed to have DRC of a plant or distribution system unless that person’s duties include the active, daily on-site operation of a plant or distribution system. On-site operation may not necessarily mean full-time attendance at a plant or distribution system.

“Direct surface water filtration” means a water treatment system that applies surface water and influenced groundwater (as defined in rule 567—40.2(455B)) directly to the filters after chemical treatment consisting of both coagulation and flocculation or chemical treatment consisting of coagulation. This type of system eliminates the sedimentation unit process.

“Electrodialysis” means the demineralization of water by the removal of ions through special membranes under the influence of a direct-current electric field.

“Fixed film biological treatment” means a treatment process in which wastewater is passed over a media onto which are attached biological organisms capable of oxidizing the organic matter, normally followed by sedimentation. Examples include but are not limited to trickling filters, rotating biological contactors, packed towers and activated filters.

“Fluoridation” means the addition of fluoride to produce the optimum fluoride concentration in water.

“Grade” means one of seven operator certification levels, designated as A, W, I, IL, II, III, or IV.

“Ion exchange” means the process of using ion exchange materials such as resin or zeolites to remove undesirable ions from water and substituting acceptable ions (e.g., ion exchange for nitrate removal or ion exchange for softening).

“Military service” means honorably serving on federal active duty, state active duty, or national guard duty as defined in Iowa Code section 29A.1 or in the military services of other states or the organized reserves of the United States as provided in 10 U.S.C. Section 101(c) in effect as of April 1, 2025, and 10 U.S.C. Section 10101 in effect as of April 1, 2025, respectively.

“Military service applicant” means an individual requesting credit toward certification for military education, training, or service obtained or completed in military service.

“Operating shift” means a specified period of time when an operator is present to conduct testing or evaluation to control operations of a plant or distribution system, to make process control changes, and to be responsible for the repair or maintenance of a plant or distribution system. An operating shift may include on-call shifts.

“Operator-in-charge” or *“OIC”* means a person or persons on site in direct responsible charge of a plant or distribution system. A city manager, superintendent of public works, city clerk, council member, business manager, or other administrative official shall not be deemed to be the OIC of a plant or distribution system unless that person’s duties include the active, daily on-site operation of the plant or distribution system. On-site operation may not necessarily mean full-time attendance at the plant or distribution system.

“Plant” means those facilities identified as either a water treatment plant or a wastewater treatment plant.

“Post-high school education” means credit received for completion of courses given or co-sponsored by an accredited college, university, or technical institute. Courses offered by regulatory agencies may also be recognized as post-high school education. One year of post-high school education is 30 semester hours, 45 quarter hours, or 45 CEUs of credit.

“Primary treatment” means a treatment process designed to remove organic and inorganic settleable solids from wastewater by the physical process of sedimentation.

“Public water supply system certificate” or *“PWS certificate”* means a certificate issued by the department certifying that an operator has successfully completed the certification requirements of this chapter for a water treatment plant or water distribution system. A PWS certificate specifies the grades and classifications for which the certificate is valid.

“Reverse osmosis” means the process in which external pressure is applied to mineralized water against a semipermeable membrane to effectively reduce total dissolved solids and radionuclides content as the water is forced through the membrane.

“Rural water district” means a water supply incorporated and organized as such pursuant to Iowa Code chapter 357, 357A or 358.

“Shift operator” means the operator on site who has responsibility for making process control changes and adjustments to the operation, repair, and maintenance of a plant or distribution system during any operating shift. Duties include testing or evaluation to control operations of the plant or distribution system.

“Stabilization” means the addition of chemical compounds to water to maintain an ionic equilibrium whereby the water is not in a depository or corrosive state.

“Veteran” means an individual who meets the definition of “veteran” in Iowa Code section 35.1(2).

“Waste stabilization lagoon” means an excavation designed and constructed to receive raw or pretreated wastewater in which stabilization is accomplished by several natural self-purification processes. This definition includes both anaerobic and aerobic lagoons.

“*Water distribution system*” or “*distribution system*” is defined in Iowa Code section 455B.211. For the purposes of this chapter, a water distribution system includes storage facilities and pumping stations and does not include individual service lines to the premises of the consumer that are not under the control of the system.

81.1(2) The following terms applicable to this chapter are defined in the referenced locations:

- a. Iowa Code section 455B.101: “commission,” “department,” and “director.”
- b. Iowa Code section 455B.211: “certificate,” “operator,” “wastewater treatment plant,” “water supply system,” and “water treatment plant.”
- c. Rule 567—40.2(455B): “coagulation,” “community water system” or “CWS,” “disinfection,” “nontransient noncommunity water system” or “NTNC,” and “transient noncommunity water system” or “TNC.”
- d. 567—subrule 60.2(1): “PE” or “population equivalent.”

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.2(455B) General.

81.2(1) Plant classifications.

a. *Plants with multiple treatment processes.* A water treatment plant or wastewater treatment plant (hereafter noted as “plant”) having a combination of treatment processes that are in different classifications shall be assigned the highest numerical plant classification of that combination.

b. *Increase in classification for complex systems.* The director may increase a plant or water distribution system classification above that indicated in 567—81.3(455B) through 567—81.6(455B) for those systems that, in the director’s judgment, include unusually complex treatment processes, complex distribution systems, or present unusual operation or maintenance conditions.

81.2(2) Operator certification.

a. *Operator-in-charge (OIC).* An OIC shall hold a certificate of the same classification of any plant or water distribution system under the OIC’s control and of equal or higher grade than the grade designated for that plant or distribution system.

b. *Shift operator.* Any person who is responsible during an operating shift of a plant or distribution system or for major segment of a plant or distribution system and is under the supervision of the OIC identified in 81.2(2) “a” shall be certified in a grade no less than a Grade II for Grade III and IV plants and distribution systems and Grade I for Grade I and II plants and distribution systems.

81.2(3) Public water supply system (PWS) certificates. A PWS certificate shall be issued as follows:

a. An operator successfully completing the water treatment certification shall be issued a PWS certificate valid for water treatment.

b. An operator successfully completing the water distribution certification shall be issued a PWS certificate valid for water distribution.

c. An operator successfully completing the requirements for both water treatment and water distribution certification shall be issued a dual PWS certificate valid for both classifications. For purposes of renewal of a dual certificate, all renewal fees and CEU requirements shall be applied as one certification. The number of CEUs required for renewal shall be determined by the highest certification grade on the dual PWS certificate.

81.2(4) Owner notification and reporting.

a. A plant or distribution system owner shall notify the department of a change in the OIC(s) within 30 days after the change.

b. When requested by the department, a plant or distribution system owner shall report the method of treatment provided, the average daily pumpage, and the name(s) of the OIC(s).

81.2(5) Operator notification. Certified operators shall notify the department of a change in address or employment within 30 days after the change.

81.2(6) Compliance plan. When the director allows the owner of a plant or distribution system required to have a certified operator time to obtain an operator, the owner shall submit a compliance plan to the department indicating what action will be taken to obtain a certified operator. The plan shall be on a form provided by the department and shall be submitted within 30 days of the owner’s receipt of a notice of violation for not having a properly certified operator.

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.3(455B) Wastewater treatment plant classifications and operator certification grades.

81.3(1) *Wastewater classifications.* The wastewater treatment plant classifications and grades are listed in the following table:

Wastewater Treatment Plant Classifications and Grades

Treatment Type	Certification Grade				
	Based on Design Pounds of BOD ₅ /day				
	less than 334	334-835	836-2,505	2,506-8,350	more than 8,350
	Based on Design Population Equivalent				
	less than 2,000	2,000-5,000	5,001-15,000	15,001-50,000	more than 50,000
1. Onsite Treatment System	W	Not Applicable	Not Applicable	Not Applicable	Not Applicable
2. Waste Stabilization Lagoon System	IL	IL	IL	IL	IL
3. Aerated Lagoon System	IL	IL	I	I	I
4. Advanced Aerated Lagoon System	II	II	II	II	II
5. Fixed Film Biological Treatment System	II	II	III	III	IV
6. Activated Sludge System	II	III	III	IV	IV

81.3(2) *Unknown design BOD₅ loading.* When the design BOD₅ loading is unknown, the plant BOD₅ loading shall be determined by using the average pounds of BOD₅ of the 24-hour composite influent samples taken in the last 12 months. If 24-hour composite influent samples are not available, then grab samples shall be used.

81.3(3) *Grade IL wastewater operator.* A Grade I, II, III, or IV wastewater treatment certificate will satisfy the certification requirements for a Grade IL plant.

81.3(4) *Grade W onsite classification.* Any wastewater treatment plant that discharges to a water of the state and that utilizes onsite wastewater treatment technologies, such as those specified in 567—Chapter 69, shall be classified as an onsite treatment system (Grade W).

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.4(455B) Water treatment plant classifications and operator certification grades.

81.4(1) *Water treatment classifications.* The water treatment plant classifications and grades are listed in the following table:

Water Treatment Plant Classifications and Grades

Treatment Type	Certification Grade*			
	Average Daily Pumpage in MGD			
	0-0.1	>0.1-0.5	>0.5-1.5	>1.5
1. Iron or manganese removal; aeration; chlorination; fluoridation; stabilization; any other chemical addition; or any combination of these processes	I	II	II	III
2. Ion exchange	II	II	III	III
3. Direct surface water filtration	II	II	III	III
4. Utilization of lime, soda ash or other chemical addition for pH adjustment in the precipitation and coagulation of iron or manganese	II	II	III	III
5. Complete surface water clarification or lime softening of surface water or groundwater	III	III	III	IV
6. Reverse osmosis and electrodialysis	II	II	III	IV
7. Activated carbon for THM or synthetic organics removal	III	III	III	IV

*For Grade A PWS classification, see 81.5(3).

81.4(2) *Average daily pumpage.* When the average daily pumpage is unknown, the plant grade will be determined from the population in the most recent census and an evaluation of commercial, industrial, and other users.

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.5(455B) Water distribution system classifications and operator certification grades.

81.5(1) *Water distribution classifications.* The water distribution system classifications and grades are listed in the following table:

Water Distribution System Classifications and Grades*

Distribution System Type	Certification Grade**			
	Average Daily Pumpage in MGD			
	0-0.1	>0.1-1.5	>1.5-5	>5
All municipal water systems	I	II	III	IV
CWS not classified as a Grade A water system	I	II	III	IV
NTNC not classified as a Grade A water system	I	II	III	IV
TNC not classified as a Grade A water system	I	II	III	IV
Rural water districts	Miles of Pipe			
	0-100	>100-1,000	>1,000-2,500	>2,500
	II	II	III	IV

*Note: A PWS with a well, storage, and a distribution system shall be classified as a water distribution system if no treatment is provided.

**For Grade A water distribution system classification, see 81.5(3).

81.5(2) *Average daily pumpage.* When the average daily pumpage is unknown, the system grade will be determined using the most recent census population and an evaluation of commercial, industrial, or other users.

81.5(3) *Grade A water distribution system classification.*

a. Grade A classification. A PWS that provides either no treatment other than hypochlorination or treatment that does not require any chemical addition, process adjustment, backwashing, or media regeneration by an operator shall be classified as a Grade A water distribution system, based on the following service populations:

- (1) Community water system. A CWS, other than a municipal or rural water system, serving a population of 250 persons or less.
- (2) Nontransient noncommunity water system. An NTNC serving a population of 500 persons or less.
- (3) Transient noncommunity water system. A TNC serving a population of 500 persons or less.

b. Grade A certification. Any grade of water treatment or distribution certification will satisfy the certification requirements for a Grade A water distribution system with or without hypochlorination.

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.6(455B) Certified operator education and experience qualifications.

81.6(1) *Education and experience qualifications—general.*

a. All certified operator applicants shall meet the education and operating experience qualifications for the certificate grade shown in the table below prior to being allowed to take the certified operator examination.

b. Operating experience shall be in the same classification for which the applicant is applying unless partial credit is given in accordance with 81.6(2) and 81.6(3).

c. Directly related post-high school education shall be in the same subject matter as the classification for which the applicant is applying. The director will determine which courses qualify as “directly related” in cases that are not clearly defined.

d. A military applicant may apply for education or experience credit pursuant to 81.6(4).

e. Education and experience qualifications table.

Certified Operator Education and Experience Qualifications

Grade	Education	Substitution for Education	Operating Experience	Substitution for Operating Experience
A	High school diploma or GED	None	Completion of a department-approved training course	None

Grade	Education	Substitution for Education	Operating Experience	Substitution for Operating Experience
W	High school diploma or GED	None	Completion of a department-approved training course	None
I	High school diploma or GED	None	1 year	See 81.6(3) "b"
IL	High school diploma or GED	None	1 year	See 81.6(3) "b"
II	High school diploma or GED	None	3 years	See 81.6(3) "b"
III	High school diploma or GED and 2 years of post-high school education (1 year must be directly related)	See 81.6(3) "a"	4 years of experience in a Grade I or higher	See 81.6(3) "b"
IV	High school diploma or GED and 4 years of post-high school education (2 years must be directly related)	See 81.6(3) "a"	4 years of experience, including 2 years of DRC in a Grade III or higher	See 81.6(3) "b" and "c"

81.6(2) Related work experience substitutions for operating experience. The following substitutions of related work experience for operating experience requirements may be accepted by the director.

a. Personnel. The following personnel may be allowed 50 percent credit for work experience toward meeting the operating experience requirements as noted:

(1) Laboratory personnel employed in water or wastewater treatment plants; Grades I and II certification only. Laboratory experience must be in the same classification for which the applicant is applying.

(2) Personnel with experience in on-site operation review and evaluation of plants and distribution systems; Grades I and II certification only. On-site experience must be in the same classification for which the applicant is applying.

(3) Maintenance personnel employed in water or wastewater treatment plants; Grades I and II certification only. Maintenance experience may be applied to either the water or wastewater experience requirements.

b. Certified operators. The following types of certified operators may be allowed 50 percent credit for work experience toward meeting the operating experience requirements as noted:

(1) Certified water treatment operators; Grades I and II wastewater treatment certification only, or Grades I and II water distribution certification only.

(2) Certified wastewater treatment operators; Grades I and II water treatment certification only.

(3) Certified water distribution operators; Grades I and II water treatment certification only.

c. Limitation. The portion of related work experience that is substituted for operating experience cannot also be used to substitute for education.

81.6(3) Operating experience and education substitutions. The following experience or education substitutions may be accepted by the director.

a. Substitution of operating experience for education.

(1) One year of operating experience may be substituted for one year of post-high school education, up to one-half of the post-high school education requirement, as follows:

1. Experience in a Grade II or higher position may substitute as education for a Grade III certification, or

2. Experience in a Grade III or higher position may substitute as education for Grade IV certification.

(2) Two years of DRC experience in a Grade III or higher position may be substituted for one year of directly related post-high school education for Grade IV certification up to three-fourths of the post-high school education requirement.

(3) That portion of operating experience that is applied toward substitution for education cannot also be used for experience.

b. Substitutions of education for operating experience.

(1) Two semester hours, three quarter hours, or three CEUs of directly related post-high school education may be substituted for one-half the operating experience requirement for Grades I and IL.

(2) Thirty semester hours, 45 quarter hours, or 45 CEUs of directly related post-high school education may be substituted for one year of experience up to a maximum of one-half the operating experience requirement for Grades II, III and IV.

(3) That portion of education that is applied toward substitution for operating experience cannot also be used for education.

(4) Class hours involving closely supervised on-the-job type training in a pilot or full-scale facility where there are clearly defined educational objectives may be applied to the on-the-job operating experience requirement. The substitution value of such training shall be applicable for Grade I and Grade II certification only and shall not exceed one-half year of on-the-job experience.

1. One hour of on-the-job training is equivalent to three hours of on-the-job operating experience.

2. One month of on-the-job training consists of 20 eight-hour days.

3. Credit for on-the-job training may be applied only to the examination for the type of plant or system in which the experience was obtained.

4. That portion of on-the-job training courses that is applied toward substitution for the on-the-job experience requirement cannot also be used for education.

c. *Substitution of education for DRC operating experience.* Thirty semester hours, 45 quarter hours, or 45 CEUs of directly related post-high school education may be substituted for one year of DRC operating experience up to one-half the requirement for Grade IV certification.

81.6(4) *Military education, training, or service credit.*

a. An applicant who is serving or has served in the military shall identify the education or experience certification qualification for which the credit is requested.

b. As part of an examination application pursuant to 81.8(1), an applicant shall provide documents, military transcripts, a certified affidavit, or forms that verify completion of the relevant military education, training, or service, which may include, as applicable, the applicant's Certificate of Release or Discharge from Active Duty (DD Form 214) or Verification of Military Experience and Training (VMET) (DD Form 2586).

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.7(455B) Certification and examination fees.

81.7(1) *Examination fee.* Fee for each examination: \$30.

81.7(2) *Certification fees.*

a. Certification fee for each one-half year of a two-year period from the date of issuance to June 30 of odd-numbered years: \$20.

b. Late certification penalty fee: \$18.

c. Certification renewal fee: \$60.

d. Late certification renewal penalty fee: \$18.

81.7(3) *Fee adjustments.* The department may adjust the fees annually by up to plus or minus 20 percent to cover costs of administering and enforcing these rules and reimbursement for other expenses relating to operator certification. The commission must approve any fee increases above those listed in this rule. All fees collected shall be retained by the department for administration of the operator certification program.

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.8(455B) Operator certification examinations.

81.8(1) *Examination application.*

a. All persons wishing to take the examination to become a certified operator of a wastewater or water treatment plant or a water distribution system shall complete an examination application on a form provided by the department.

b. All examination applications shall be accompanied by the examination fee.

81.8(2) *Application evaluation.* After evaluating an application, the department will notify the applicant of examination eligibility or noneligibility. The director will further review applications when it is indicated that the applicant has falsified information or when questions arise concerning an applicant's qualifications or eligibility for examination or certification.

81.8(3) *Application expiration.* An approved examination application shall be valid for one year from the approval date.

81.8(4) *Examination fee refund.* An applicant who does not qualify for examination at the time of application will have the examination fee refunded if the applicant cannot qualify for examination within one year. If an applicant will qualify for a scheduled examination within one year, the fee will not be refunded.

81.8(5) *Reexamination.*

a. Upon failure of the first examination, an applicant may apply for reexamination.

b. Upon each reexamination when a valid application is on file, an applicant shall submit the examination fee to the department.

81.8(6) *Application invalidation.* Failure to successfully complete the examination within one year from the application approval date shall invalidate the application.

81.8(7) *Reasonable accommodation.* Upon an applicant's request, the director will consider reasonable accommodation to allow administration of the examination without discrimination on the basis of disability. An applicant shall request an accommodation 30 days prior to the examination date. An applicant shall provide documentation of eligibility for an accommodation with the examination application form.

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.9(455B) Operator certification.

81.9(1) *Examination requirement.* All applicants not certified by reciprocity pursuant to 81.9(3) shall successfully pass an operator certification examination prior to receiving certification.

81.9(2) *Certification.*

a. In order to receive a certificate, an applicant who passes an examination shall submit the certification fee to the department within 60 days of the date the applicant receives notification from the department of passing the examination. Payment may either be digitally submitted in accordance with the instructions on the department's website at www.iowadnr.gov, mailed, or hand delivered. All certification fee payments that are mailed or hand delivered shall be submitted with the applicant's notification of passing the examination.

b. Any certification payment digitally submitted, postmarked, or hand delivered to the department more than 30 days but less than 60 days after the date the applicant received notification of passing the examination shall be accompanied by the certification fee and the late certification penalty fee.

c. An applicant who does not submit the certification fee within 60 days' notice of passing the examination will not be certified on the basis of that examination.

81.9(3) *Certification by reciprocity.*

a. Other states' mandatory certification programs. Applicants who have been certified under other states' mandatory certification programs, the equivalency of which has been previously reviewed and accepted by the department, shall be certified in an appropriate classification and grade without examination. The applicant must have passed an examination generally equivalent to the Iowa examination and must meet the education and experience qualifications established in this chapter.

b. Other states' voluntary certification programs. For applicants who have been certified under voluntary certification programs in other states, certification in an appropriate class will be considered. The applicant must have passed an examination generally equivalent to the Iowa examination and must meet the education and experience qualifications established in this chapter. The director may require the applicant to pass the Iowa examination.

c. Reciprocity application.

(1) Applicants seeking reciprocal Iowa certification shall submit a reciprocity application form provided by the department and the certification fee. The applicant shall be certified at the appropriate grade pursuant to 81.6(1).

(2) An applicant who is a veteran shall submit a reciprocity application form provided by the department and the certification fee and shall provide documentation to verify their status as a veteran as defined in Iowa Code section 35.1(2).

d. Lapse of certification obtained through reciprocity. An applicant who obtains certification in Iowa through reciprocity and subsequently allows their Iowa certification to lapse will be required to reapply for certification in accordance with 81.9(5)“e.”

81.9(4) Restricted certification. Upon written request by a certified operator, the director may determine that the education qualifications can be waived prior to an examination when a plant or distribution system classification is increased and the operator has been in DRC of the existing plant or distribution system. An operator passing an examination will be restricted to that plant or distribution system until the education qualifications are met.

81.9(5) Certification renewal.

a. Renewal period. All certificates shall expire on June 30 of odd-numbered years and shall be renewed every two years in order to maintain certification.

b. Continuing education requirements for renewal. The CEU credits detailed in 567—81.10(455B,272C) shall be obtained prior to any certificate renewal.

c. Renewal application and fee.

(1) Certification renewal applications shall be made available to certified operators on the department’s website at www.iowadnr.gov prior to the certificate expiration date.

(2) All renewal applications shall be digitally submitted, postmarked, or hand delivered to the department prior to certificate expiration and shall be accompanied by the certification renewal fee.

d. Late renewal. Any certification renewal application digitally submitted, postmarked, or hand delivered to the department after certificate expiration shall be accompanied by the certification renewal fee and the late certification renewal penalty fee.

e. Failure to renew. If a certified operator fails to renew within 60 days following certificate expiration, the right to renew the certificate is automatically terminated. Certification may be allowed at any time following such termination, provided that the applicant meets all education and experience eligibility requirements of 567—81.6(455B), successfully passes an examination, and submits the certification fee in accordance with 81.9(2).

f. Expired certificate. An operator may not continue as the OIC of a plant, distribution system, operating shift, or major segment of a plant or distribution system after certificate expiration unless the certificate is renewed.

81.9(6) Certificate upgrade. An operator holding an unexpired certificate may upgrade the certificate by examination to a higher grade in the same classification in accordance with this rule and 567—81.6(455B) and 567—81.8(455B). The expiration date of the upgraded certificate shall be the same as the unexpired certificate. An operator who upgrades a certificate during a biennium must also renew the upgraded certificate in accordance with 81.9(5) to maintain certification.

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.10(455B,272C) Continuing education.

81.10(1) Continuing education unit (CEU) general requirements.

a. Only those operators fulfilling the CEU requirements before the end of each two-year period (March 31) will be allowed to renew their certificate(s). All certificates of operators who did not fulfill the CEU requirements as of April 1 of the second year shall expire on June 30 of each odd-numbered year.

b. CEUs must be earned during two-year periods between April 1 and March 31 of odd-numbered years.

c. A Grade III or IV certified operator must earn two CEUs or 20 contact hours per certificate during each two-year period.

d. All other certified operators must earn one CEU or 10 contact hours per certificate during each two-year period.

e. For those certified operators holding both a water treatment and a water distribution certification, no less than 25 percent of the required CEUs may be earned in any one area.

81.10(2) CEU approval. All activities for which CEU credit will be granted must be approved by an accredited college, university, technical institute, or the department, and must be directly related to the subject matter of the particular certificate to which the credit is being applied. Any entity holding courses in

Iowa for which CEU credit is offered for operator certification must provide, at no cost to the department, the opportunity for one staff member to audit the training and receive all training materials.

81.10(3) Exceptions. The following exceptions apply to the requirements of this rule.

a. The director may, in individual cases involving hardship or extenuating circumstances, allow a certified operator up to three additional months to fulfill the minimum CEU requirements. Hardship or extenuating circumstances include documented health-related confinement or other circumstances beyond the certified operator's control that prevent attendance at the required activities. All extension requests must be made prior to March 31 of each biennium.

b. Newly certified operators (previously uncertified) who become certified after April 1 of the second year of a two-year period will not be required to earn CEUs until the next two-year period.

c. If an operator upgrades a certificate after April 1 of the second year of a two-year period and that upgrade increases the CEU requirement, the operator will not be required to meet the higher CEU requirement until the next two-year period, but must fulfill the lower CEU requirement for that period.

81.10(4) CEU reporting. It is the certified operator's personal responsibility to maintain a written record of the CEUs earned during each renewal period and to report the credits to the department by following the instructions on the department's website at www.iowadnr.gov.

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.11(455B) Operator by affidavit.

81.11(1) Affidavit allowance. The owner of a plant or distribution system required to have a Grade A, I, IL, or II certified operator may sign an affidavit with a certified operator of the required classification and grade.

81.11(2) Affidavit requirements.

a. An affidavit will verify that the certified operator is the OIC and has direct responsibility for a plant or distribution system that does not have first rights on the services of that operator.

b. The department shall provide an affidavit form that requires the certified operator's name and signature, the operator's certification number, classification and grade, and the date of last renewal of the operator's certificate. The affidavit form shall be proof that the certified operator has agreed to be directly responsible for the operation and maintenance of the plant or distribution system.

c. The affidavit must be returned to and approved by the local regional field office of the department, based upon the ability of the certified operator to properly operate and maintain additional facilities. Upon affidavit approval, the department may specify additional operational and maintenance requirements based on the complexity and size of the plant or distribution system.

d. In the event of affidavit disapproval, the plant or distribution system owner must terminate the agreement with the certified operator and seek the services of another certified operator.

e. Both the plant or distribution system owner and the certified operator shall notify the director at least 30 days before the termination of an affidavit.

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

567—81.12(455B,272C) Disciplinary actions.

81.12(1) Reasons for disciplinary action. Disciplinary action may be taken against a certified operator on any of the grounds specified in Iowa Code section 455B.219 and chapter 272C and the following more specific grounds:

a. Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified operator.

(1) Examples of wastewater operator duties are specified in the Water Environment Federation Manual of Practice #11, 1996; California State University—Sacramento (CSUS) Operation of Wastewater Treatment Plants, Vol. I, 4th edition, 1998; CSUS Operation of Wastewater Treatment Plants, Vol. II, 4th edition, 1998; CSUS Advanced Waste Treatment, 3rd edition, 1998; and 567—Chapters 60 through 63, 67, and 83.

(2) Examples of water treatment or distribution system operator duties are specified in the American Water Works Association (AWWA) Manuals of Water Supply Practice (Volumes 1, 3-7, 9, 11-12, 14, 17, 19-38, 41-42, 44-48); AWWA Water Supply Operations Series, 2nd edition: Vol. 1, 1995; Vol. 2, 1995; Vol.

3, 1996; Vol. 4, 1995; and Vol. 5, 1995; AWWA Water Distribution Operator Handbook, 2nd edition, 1976; California State University—Sacramento (CSUS) Water Treatment Plant Operation, Vol. I, 4th edition, 1999; CSUS Water Treatment Plant Operation, Vol. II, 3rd edition, 1998; CSUS Small Water System Operation and Maintenance, 4th edition, 1999; CSUS Water Distribution System Operation and Maintenance, 4th edition, 2000; and 567—Chapters 40 through 43 and 83.

b. Failure to submit records of operation or other reports required under applicable permits or department rules, including failure to submit complete records or reports.

c. Knowingly making any false statement, representation, or certification on any application, record, report or document required to be maintained or submitted under any applicable permit or department rule.

81.12(2) *Disciplinary sanctions.* Disciplinary sanctions may include those specified in Iowa Code section 272C.3(2) and the following:

a. *Certificate revocation.* Revocation may be permanent without chance of recertification or for a specified period of time.

b. *Partial revocation or suspension.* Revocation or suspension of the practice of a particular aspect of the operation of a plant or distribution system, including the restriction of operation to a particular plant or distribution system, or a particular classification of plant or distribution system.

c. *Probation.* Probation under specified conditions relevant to the specific grounds for disciplinary action.

d. *Additional requirements.* Additional education, training, or reexamination may be required as a condition of certificate reinstatement.

e. *Penalties.* Civil penalties not to exceed \$1,000 may be assessed for the reasons identified in 81.12(1).

81.12(3) *Procedure.*

a. *General.* All disciplinary action taken under this rule shall comply with the procedures of rule 561—7.19(17A,455A) and all other applicable rules governing contested cases. At any time, the licensee and the department may enter into a settlement agreement, subject to approval by the director, which provides for a disciplinary sanction.

b. *Appeal and review of proposed decision.* After a contested case hearing conducted in accordance with 561—Chapter 7, the director shall review the presiding officer's proposed decision. The proposed decision shall constitute a final decision of the director and the department.

c. *Emergency disciplinary action.* The director may initiate an emergency suspension or other disciplinary action upon such grounds and following the procedures provided in rule 561—7.18(17A,455A). The terms of the emergency order shall be effective upon service as provided in rule 561—7.18(17A,455A). The department shall promptly give notice of an opportunity to appeal and request a contested case hearing following the procedures specified above.

d. *Reinstatement of revoked certificates.* Upon revocation of a certificate in accordance with the authority provided in Iowa Code section 455B.219 and chapter 272C, application for certification may be allowed after two years from the date of revocation unless otherwise specified in 81.12(2). Any such applicant shall meet all education and experience eligibility requirements, pass an examination, and be certified in the same manner as a new applicant in accordance with the requirements of this chapter.

81.12(4) *Procedures for noncompliance with child support order.* Upon receipt of a certification of noncompliance with a child support obligation as provided in Iowa Code section 252J.7, the department will initiate procedures to deny an application for operator certification or renewal or to suspend a certification in accordance with Iowa Code section 252J.8(4). The department shall issue to the person by certified mail a notice of its intent to deny or suspend operator certification based on receipt of a certificate of noncompliance. The suspension or denial shall be effective 30 days after receipt of the notice unless the person provides the department with a withdrawal of the certificate of noncompliance from the child support recovery unit as provided in Iowa Code section 252J.8(4)“c.” Pursuant to Iowa Code section 252J.8(4), the person does not have a right to a hearing before the department to contest the denial or suspension action under this subrule but may seek a hearing in district court in accordance with Iowa Code section 252J.9.

[ARC 9212C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.211 through 455B.224 and chapter 272C.

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CHAPTER 82 WELL CONTRACTOR CERTIFICATION

[Prior to 5/12/93, see also 567—Ch 37]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—82.1(455B) Definitions. In addition to the definitions in 567—Chapter 39, 567—Chapter 40, 567—Chapter 49, and Iowa Code sections 455B.171, 455B.190, and 455B.190A, which are hereby adopted by reference, the following definitions shall apply to this chapter:

“*Pump installer*” means a person certified by the department to perform pump services.

“*Pump services*” means the same as defined in Iowa Code section 455B.190A. The term also includes modification of the upper terminus of a well; well plugging; well rehabilitation; or the construction of Class 3 wells.

“*Well driller*” means a person certified by the department to perform well drilling services.

“*Well drilling services*” means the same as “well services” as defined in Iowa Code section 455B.190A. The term includes well rehabilitation.

“*Well plugging contractor*” means a well contractor certified to plug only Class 1 or Class 3 wells but not certified to abandon Class 2 wells or perform any other well services.

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.2(455B) General.

82.2(1) *Certified well contractor requirement.*

a. All well services shall be performed pursuant to this chapter by a certified well contractor who is on site and in direct charge of the well services, except that a person may perform well services on their own property without being certified.

b. Prior to performing well drilling services, a certified well contractor shall notify:

(1) The department or the county, if a well does not have the required construction permits; or

(2) The department, if the use of the water requires a water use allocation and the owner has not applied for or been issued a water use allocation.

82.2(2) *Applicability exception.* These rules shall not apply to a water operator certified pursuant to Iowa Code section 455B.213, when the water operator is performing pump services on any well owned by a PWS as defined in Iowa Code section 455B.171. These rules shall not apply to a wastewater operator certified pursuant to Iowa Code section 455B.213, when the wastewater operator is performing pump services on a groundwater monitoring well, groundwater dewatering well, or other well not used to provide drinking water, owned by a sewer system as defined in Iowa Code section 455B.171. Pump installer certification requirements shall not apply to monitoring wells.

82.2(3) *Address change.* Certified well contractors shall report address changes to the department within 30 days after the change.

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.3(455B) Classification of well contractors.

82.3(1) *Classifications.* The three classifications of certified well contractors are:

a. Certified well contractor, including:

(1) Well driller, and

(2) Pump installer.

b. Provisionally certified well contractor, including:

(1) Well driller, and

(2) Pump installer.

c. Well plugging contractor.

82.3(2) *Certified well contractor.* In order to be a certified well contractor, an applicant shall have met the experience requirements, successfully completed the well contractor examination for well drilling services or pump services, or both, been issued a certificate by the department, and renewed the certification in accordance with this chapter.

82.3(3) Provisionally certified well contractor. The requirements and conditions for provisional well contractor certification are described in Iowa Code section 455B.190A. A provisionally certified well contractor will become a certified well contractor after the submission of an application showing all certification requirements have been met and submission of appropriate fees to the department. The certificate for a provisionally certified well contractor will be issued for one year. The department shall issue a certified well contractor certificate after the one-year period and the receipt of appropriate fees.

82.3(4) Well plugging contractor. In order to be certified as a well plugging contractor, an applicant shall take a four-hour training course designated by the department, successfully complete a well plugging test, be issued a certificate by the department, and renew the certification in accordance with this chapter.

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.4(455B) Experience requirements. All applicants shall meet the experience requirements shown below. Educational programming approved by the department may be substituted for up to one half of any experience requirement at the rate of one continuing education unit (CEU) for each 100 hours of required experience.

CLASSIFICATION	EXPERIENCE
Certified Well Contractor (well driller)	Two years' employment and 2000 hours work experience in Class 1 and Class 2 well construction
Certified Well Contractor (pump installer)	Two years' employment and 1000 hours work experience in the installation, repair, and maintenance of water systems
Provisionally Certified Well Contractor	One half of the employment and experience required for full certification
Well Plugging Contractor	None

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.5(455B) Certification and examination fees. The following fees are nonrefundable.

82.5(1) Examination fee. Fee for each examination: \$50.

82.5(2) Oral examination fee. Fee for each oral examination: \$100.

82.5(3) Certification fees.

a. Well drilling contractors.

(1) Initial certification fee for each one-half year of a two-year period from the date of issuance to June 30 of the next even-numbered year: \$75.

(2) Certification renewal fee: \$300.

b. Pump installation contractors and well plugging contractors.

(1) Initial certification fee:

1. For each one-half year of the first year of certification: \$75.

2. For each additional one-half year period to June 30 of the next even-numbered year: \$50.

(2) Certification renewal fee: \$200.

82.5(4) Provisionally certified well contractor fee. Provisionally certified well contractor fee: \$150.

82.5(5) Late certification penalty fee. Penalty fee for late payment of the initial certification fee or renewal fee: \$100.

82.5(6) Duplicate certificate fee. A currently certified well contractor may obtain a duplicate certificate upon payment of a \$20 fee.

82.5(7) Recertification fee. Contractors who have not earned sufficient CEUs for certification renewal and who wish to recertify within two years after expiration of their certification must retake and pass the examination(s) and pay a certification fee of \$1,000.

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.6(455B) Examinations.

82.6(1) Examination types. There are four well contractor examinations available:

- a. General fundamentals examination - well drilling and pump installation contractors.
- b. Specialty examination - well drillers.
- c. Specialty examination - pump installers.
- d. Specialty examination - well plugging contractors.

82.6(2) Required examinations.

a. Well drilling contractors and pump installers must take and pass the general fundamentals examination and at least one of the specialty examinations. Examinations may be taken at the same time and place or at different times. Work shall be limited to the specialty in which proficiency has been demonstrated by written examination.

- b. Well plugging contractors must take and pass the well plugging examination only.

82.6(3) Examination application.

a. A person wishing to take the examination(s) to become a certified well contractor shall complete and submit an examination application form provided by the department.

- b. All examination applications shall be accompanied by the examination fee.

c. The department may allow local county environmental health officials to take an examination, even if they do not meet the work experience or training requirements, provided they pay the examination fee. If an official receives a passing score on the examination, they will receive a letter of acknowledgment; however, they will not be certified and will not be allowed to perform any well services.

82.6(4) Application evaluation. After evaluating an application, the department will notify an applicant of examination eligibility or noneligibility.

82.6(5) Application expiration. An approved examination application shall be valid for one year from the approval date. All required examinations shall be completed within one year of application.

82.6(6) Examination fee refund. The department may refund a portion of the examination or reexamination fee for an applicant who does not qualify for examination within one year of application approval. If an applicant will qualify for a scheduled examination within one year, the fee will not be refunded.

82.6(7) Reexamination.

a. Upon failure of the first examination, an applicant may apply for reexamination. Upon failure of the second examination, the applicant must wait a period of 180 days between each subsequent reexamination.

b. Upon each reexamination while a valid application is on file, an applicant shall submit the examination fee to the department.

82.6(8) Application invalidation. Failure to successfully complete the necessary examinations within one year from the application approval date shall invalidate an application.

82.6(9) Oral examination. Upon written request by an applicant, the director will consider administering an oral examination on an individual basis when: the applicant has failed the written examination at least twice; the applicant has shown difficulty in reading or understanding written questions but may be able to respond to oral questioning; the applicant is capable of communicating in writing with regard to departmental requirements and inquiries; and the director has received a written recommendation for an oral examination from a department staff member attesting to the operational and performance capabilities of the applicant.

82.6(10) Reasonable accommodation. Upon an applicant's request, the director will consider reasonable accommodation to allow administration of an examination without discrimination on the basis of disability. An applicant shall request accommodation 30 days prior to the examination date. An applicant shall provide documentation of eligibility for the accommodation with the examination application form. Accommodations based on documentation may include site accessibility, oral examination, extended time, separate testing area, or other concerns. If an oral examination is considered a reasonable accommodation, the oral examination fee shall apply.

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.7(455B) Contractor certification.

82.7(1) Examination requirement. All applicants for well contractor certification shall pass the relevant examinations prior to receiving certification.

82.7(2) Certification.

a. To receive certification, an applicant who passes the examination(s) shall submit the appropriate certification fee to the department within 30 days of receiving notification from the department of passing the examination(s). Payment may be digitally submitted in accordance with the instructions on the department's website at www.iowadnr.gov, mailed, or hand delivered. All certification fee payments that are mailed or hand delivered shall be submitted with the applicant's notification of passing the examination(s).

b. Any certification payment digitally submitted, postmarked, or hand delivered to the department more than 30 days but less than 60 days after the date the applicant received notification passing the examination(s) shall be accompanied by the appropriate certification fee and the late certification penalty fee.

c. Applicants who do not submit the appropriate certification fee within 60 days' notice of passing the examinations will not be certified on the basis of that examination(s).

82.7(3) Denial appeal. Applicants may appeal a denial of certification within 30 days of receiving notification pursuant to 567—Chapter 7.

82.7(4) Certificate renewal.

a. *Renewal period.* All certificates shall expire on June 30 of even-numbered years and shall be renewed every two years in order to maintain certification.

b. *Continuing education requirements for renewal.* The CEU credits detailed in 567—82.8(455B) shall be obtained prior to any certificate renewal.

c. *Renewal applications and fee.*

(1) Certification renewal applications shall be made available to certified well contractors on the department's website at www.iowadnr.gov 60 days prior to the certificate expiration date.

(2) All renewal applications shall be digitally submitted, postmarked, or hand delivered to the department prior to certificate expiration, and shall be accompanied by the appropriate certification renewal fee.

d. *Late renewal.* Any certification renewal application digitally submitted, postmarked, or hand delivered to the department after certificate expiration shall be accompanied by the appropriate certification renewal fee and the late certification renewal penalty fee.

e. *Failure to renew.* If a certified well contractor fails to renew within 60 days following certificate expiration, the right to renew the certificate is automatically terminated. Certification may be allowed at any time following such termination, provided that the applicant passes the appropriate examinations and submits the appropriate certification fee in accordance with this rule.

f. *Expired certificate.* A certified well contractor may not continue to provide well services after certificate expiration without renewal thereof.

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.8(455B) Continuing education.

82.8(1) CEU requirements. CEUs must be earned during two-year periods between April 1 and March 31 of even-numbered years.

a. A certified well contractor holding well driller certification or both well driller and pump installer certifications must earn 1.6 CEUs or 16 contact hours during each two-year period.

b. A certified well contractor holding only pump installer certification must earn 1.0 CEU or 10 contact hours during each two-year period.

c. A well plugging contractor may be required to earn 0.2 CEUs or 2 contact hours during each two-year period as determined by the department, provided the well plugging contractor is notified of the requirement at the beginning of the renewal period.

d. Newly certified (previously uncertified) well contractors who are certified after April 1 of even-numbered years will not be required to earn CEUs until the next two-year period.

82.8(2) Certificate renewal. Only those certified well contractors fulfilling the CEU requirements before the end of each two-year period (March 31) will be allowed to renew their certificate(s). All certificates of certified well contractors not fulfilling the CEU requirements shall expire on June 30 of every even-numbered year.

82.8(3) CEU approval. All activities for which CEU credit will be granted must be approved by an accredited college or university, technical institute, or the department, and shall be related to well services, relevant aspects of Iowa groundwater law, well construction, well maintenance, well abandonment practices, well contractor safety (no more than 0.2 CEU per renewal), water system maintenance, or Iowa hydrogeologic conditions that protect groundwater and water supplies.

82.8(4) CEU exceptions. The director may, in individual cases involving hardship or extenuating circumstances, grant a certified well contractor six additional months to fulfill the minimum CEU requirements. Hardship or extenuating circumstances include documented health-related confinement or other circumstances beyond the control of the contractor that prevent attendance at the required activities. All extension requests must be made prior to March 31 of each even-numbered year.

82.8(5) CEU reporting. It is the certified well contractor's personal responsibility to maintain a written record of the CEUs earned during each renewal period and report the credits to the department by following the instructions on the department's website at www.iowadnr.gov.

82.8(6) Alternative CEU requirements. A certified well contractor shall be deemed to have complied with the CEU requirements of this rule during periods that they serve honorably on active duty in the military services, for periods of government employment working as a well contractor and assigned to duty outside of the United States, or for other periods of active practice and absence from the state approved by the director.

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.9(455B) Certified well contractor obligations.

82.9(1) Record and sample submission. Within 30 days of completion of any water well, each certified well contractor shall submit the following:

- a. A well record form to the authority who issued the well construction permit (the department or the local county health department), in accordance with 82.9(2); and
- b. Drill cutting samples to the Iowa Geological Survey (IGS) for any water well used as part of a public water supply, a well used for water withdrawal for which a permit is required by 567—50.1(455B), or a department-required well used to monitor groundwater quantity or quality, as required by 82.9(3).
- c. Prior to constructing a water well to be used as part of a nonpublic water supply or other water well used to access groundwater, a certified well contractor shall contact the local health department in the county in which the water well is to be located to determine if submittal of drill cutting samples is required.

82.9(2) Well record form. Well drilling records shall be submitted on the well record form, or, for all nonpublic water supply wells, into the department's Iowa Well Information System database. Both the form and the database are available on the department's website at www.iowadnr.gov. The well record form shall include the following:

- a. Well location and legal description (quarter section, section number, township, range, and county);
- b. Reference point for all depth measurements;
- c. Depth at which each significant change of formation occurs;
- d. Depth at which pump is set, the non-pumping and pumping water levels in the well measured from the land surface, and the rate and duration the well was pumped;
- e. Identification of the material of which each significant stratum is composed;
- f. Depth at which hole diameters (bit sizes) change;
- g. Normal hole diameter of the well bore;
- h. Total depth of the completed hole;
- i. Depth or location of any lost drilling fluids, drilling materials, or tools;
- j. Casing depth, grouting schedule, including materials used and method of placement, and description of the well casing and liner pipe;
- k. A description of well screens, including diameter, length, material slot sizes, amount of open area, and location in well; and
- l. A description of physical and chemical well development activities.

82.9(3) Cutting samples. Drill cutting samples shall be collected at intervals of five feet and at each pronounced change in geological formation. The IGS will provide drill cutting bags.

82.9(4) *Test pumping.* Certified well contractors shall provide, as requested, test pumping data for water wells used as part of a public water supply and for water wells used as part of a regulated water use pursuant to 567—subrule 50.6(1).

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.10(455B) Disciplinary actions.

82.10(1) *Reasons for disciplinary action.* Disciplinary action may be taken against a certified well contractor or well plugging contractor on any of the grounds specified in Iowa Code section 455B.190A and the following more specific grounds:

- a. Knowingly making any false statement, representation, or certification on any application, record, report, or document required to be maintained or submitted under any applicable permit or rule of the department.
- b. Failure to renew certification.
- c. Failure to obtain required CEUs.
- d. Failure to submit, within the time required, drill cutting samples, records, or other reports required under applicable permits or rules of the department, including failure to submit complete records or reports.
- e. Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified well contractor or well plugging contractor.
- f. Violation of well construction, plugging or pump installation standards or other requirements in 567—Chapters 39, 43, 49 and 110.
- g. Failure to advise a person for whom well services are being provided that a hazardous or potentially hazardous condition, as defined in Iowa Code section 455B.381(2), has been encountered.
- h. Knowingly causing or allowing a hazardous or potentially hazardous condition due to well construction to exist.
- i. Drilling or reconstructing a well without a construction permit.

82.10(2) *Disciplinary sanctions.*

- a. *Certificate revocation.* Revocation of a certificate may be permanent without chance of recertification or for a specified period of time.
- b. *Partial revocation or suspension.* Revocation or suspension of the practice of a particular aspect of the contractor's responsibility.
- c. *Probation.* Probation under specified conditions relevant to the specific grounds for disciplinary action. Additional education or training or reexamination may be required as a condition of probation. Reexamination may include written and oral examinations.
- d. *Fees.* The department shall determine which fees in 567—82.5(455B) apply.
- e. *Penalties.* Civil penalties may be assessed in accordance with Iowa Code section 455B.109.

82.10(3) *Procedure.*

- a. The director shall initiate disciplinary action. The director may investigate any alleged factual situation that may be grounds for disciplinary action under 82.10(1) and report the results of the investigation to the commission.
- b. The director may issue an administrative order that may assess a penalty or refer a case to the attorney general for prosecution for any disciplinary action.
- c. Written notice by certified mail shall be provided to a certified well or well plugging contractor against whom disciplinary action is being considered. The certified well or well plugging contractor will be given 20 days' advance notice that an informal hearing has been scheduled before the commission. The notice will provide the specific date, time, and place, at which time the commission will hold the informal hearing to determine whether a formal hearing is warranted or whether informal resolution can be reached. The certified well or well plugging contractor may present any relevant facts and indicate their position in the matter.
- d. A certified well or well plugging contractor who receives notice of an informal hearing shall communicate orally or in writing with the director, and efforts shall be made to clarify the respective positions of the certified well or well plugging contractor and the director. Department staff may present a recommendation concerning disciplinary sanctions to the commission at the informal hearing.

e. Failure to attend the informal hearing or otherwise to communicate facts and position relevant to the matter by the scheduled date will be considered by the commission when determining whether a formal hearing is warranted.

f. If agreement as to appropriate disciplinary sanction, if any, can be reached with the certified well or well plugging contractor and the commission concurs, a written stipulation and settlement between the department and the certified well or well plugging contractor shall be entered. The stipulation and settlement shall recite the basic facts and violations alleged, any facts presented by the certified well or well plugging contractor, and the reasons for the particular sanctions imposed.

g. If the commission determines that no disciplinary action is warranted on the facts asserted, the certified well or well plugging contractor shall be notified of the decision in writing.

h. If the commission determines that an opportunity for formal hearing is required to impose any disciplinary sanction specified in 82.10(2), the director shall proceed in accordance with 567—Chapter 7.

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

567—82.11(455B,272C) Certificate revocation. Upon certificate revocation in accordance with Iowa Code section 455B.190A, application for certification may be allowed after two years from the revocation date. Any such applicant shall pass an examination and be certified in the same manner as other applicants. The department shall determine which fees in 567—82.5(455B) apply.

[ARC 9213C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.187 and 455B.190A.

[Filed 11/20/92, Notice 9/16/92—published 12/9/92, effective 1/13/93¹]

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[Filed ARC 9213C (Notice ARC 8599C, IAB 1/8/25), IAB 5/14/25, effective 6/18/25]

¹ Effective date of 567—82.1(455B), 82.2(2), 82.3(455B), and 82.6(455B) (published 12/9/92 IAB) delayed until adjournment of the 1993 General Assembly by the Administrative Rules Review Committee at its meeting held January 5, 1993.

CHAPTER 83 LABORATORY CERTIFICATION

[Prior to 4/10/96, see 567—Chapter 42]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

PART A GENERAL

567—83.1(455B) Authority, purpose, and applicability.

83.1(1) Authority. Pursuant to Iowa Code section 455B.113, a laboratory certification program is required for laboratories performing analyses of samples that are required to be submitted to the department as a result of Iowa Code provisions, rules, operation permits, or administrative orders. Pursuant to Iowa Code section 455B.114, the department may suspend or revoke the certification of a laboratory upon its determination that the laboratory no longer fulfills one or more of the requirements for certification.

83.1(2) Purpose. The purpose of these rules is to provide the procedures for laboratories to use to apply for and maintain certification, to establish laboratory certification fees, and to provide the appropriate methods and references for evaluating laboratory competence including the requirements for laboratories to become certified.

83.1(3) Applicability to environmental program areas. This chapter applies to the following laboratories:

a. Water supply (drinking water). All laboratories conducting drinking water analyses pursuant to 567—Chapters 40, 41, and 43.

b. Underground storage tanks. All laboratories conducting underground storage tank (UST) analyses for petroleum constituents pursuant to 567—Chapter 135. Routine on-site monitoring conducted by or for UST owners for leak detection or a nonregulatory purpose is excluded from this requirement.

c. Wastewater (nonpotable water). All laboratories conducting analyses of wastewater, groundwater or sewage sludge (municipal biosolids), or manure pursuant to 567—Chapters 63, 65, 67, and 69.

d. Solid waste and contaminated sites. All laboratories conducting analyses of solid waste parameters pursuant to 567—Chapters 100 through 129, contaminated site parameters pursuant to 567—Chapters 133 and 137, and regulated substances other than petroleum parameters regulated under 567—Chapter 135.

83.1(4) Exclusions. Any parameter that must be analyzed immediately upon sample collection is excluded from the requirements of this chapter. Any samples collected or testing conducted that is not part of the specific monitoring required by the department for regulatory purposes are also excluded from the requirements of this chapter.

[ARC 9214C, IAB 5/14/25, effective 6/18/25]

567—83.2(455B) Definitions.

“Batch” means environmental samples that are prepared, analyzed, or both together with the same process and personnel, using the same lot(s) of reagents. A preparation batch is composed of 1 to 20 environmental samples of the same quality systems matrix (water supply, wastewater, etc.), meeting the above-mentioned criteria and with a maximum time between the start of processing of the first and last sample in the batch to be 24 hours. An analytical batch is composed of prepared environmental samples (extracts, digestates or concentrates) that are analyzed together as a group. An analytical batch can include prepared samples originating from various quality system matrices and can exceed 20 samples. If there is a conflict between this definition and the requirements of an approved method, the more stringent requirements shall apply.

“Certified” means a laboratory demonstrates to the satisfaction of the department its ability to consistently produce valid data within the acceptance limits as specified within the department’s requirements for certification and meets the minimum requirements of this chapter and all applicable regulatory requirements. A laboratory may be certified for an analyte, an analytical series, or an

environmental program area, except in the UST program area, where certification for individual analytes is not allowed.

“*Corrective action report*” or “*CAR*” means documentation that demonstrates a laboratory has satisfied cited deficiencies or deviations.

“*Critical staff*” means an analyst who is the only person at a laboratory performing a particular function or analysis (no backup analyst).

“*Demonstration of capability*” or “*DOC*” means a procedure used to demonstrate the ability of an analyst to generate acceptable accuracy for each method the analyst performs.

“*Discharge monitoring report-quality assurance*” or “*DMRQA*” means an effluent performance test study regulated by the National Pollutant Discharge Elimination System (NPDES) program and administered by the EPA.

“*Environmental program area*” means the water supply (drinking water) program, underground storage tank program, wastewater program (nonpotable water), or solid waste and contaminated site program pursuant to 83.1(3).

“*Essential staff*” means an analyst who is primarily responsible for a particular analysis/program and handles the administrative or technical tasks associated with the analysis or program.

“*Holding time*” means the maximum time a sample may be held before beginning of an associated analysis.

“*Level of quantitation*” or “*LOQ*” means the analyte concentration that produces a signal sufficiently stronger than the blank, such that it can be detected with a specified level of uncertainty during routine operations.

“*Manual for the Certification of Laboratories Analyzing Environmental Samples for the Iowa Department of Natural Resources*” is incorporated by reference in this chapter.

Chapter 1 pertains to certification of laboratories analyzing samples of drinking water and incorporates by reference the Manual for the Certification of Laboratories Analyzing Drinking Water, 5th edition, January 2005, EPA document 815-R-05-004; Supplement 1, June 2008, EPA 815-F-08-006; and Supplement 2, November 2012, EPA 815-F-12-006.

Chapter 2 (2020), pertains to laboratories analyzing samples for the UST program.

Chapter 3 (2017), pertains to laboratories analyzing samples for wastewater and sewage sludge disposal programs.

Chapter 4 (2017), pertains to laboratories analyzing samples for the solid waste and contaminated site programs.

“*Method detection limit*” or “*MDL*” means the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

“*National environmental laboratory accreditation program*” or “*NELAP*” means the third-party accreditation program that is managed by the NELAC Institute (TNI), a 501(c)(3) nonprofit organization, and that is based on consensus standards representing the best professional practices for laboratories.

“*Quality assurance plan*” or “*QA plan*” means a document that describes the key elements of laboratory functions that provide quality testing results to the client. The key elements include but are not limited to a description of the laboratory organizational structure and lines of responsibility; sampling requirements, procedures, and locations; sampling handling procedures; calibration procedures and frequencies; procedures for data reduction, validation, and reporting; quality control procedures including type, frequency and acceptance criteria; procedure(s) used to determine data precision and accuracy; corrective action contingencies; and preventative maintenance and schedules.

“*Proficiency test sample*” or “*PT sample*” means a reference sample provided to a laboratory for the purpose of demonstrating that a laboratory can successfully analyze the sample within limits of performance specified by the department. The true value of the concentration of the reference material is unknown to the laboratory at the time of analysis.

“*Provisional certification*” or “*provisional status*” means a laboratory has deficiencies, which must be corrected within the specified time frames in 83.6(3)“d,” but demonstrates to the satisfaction of the

department its ability to consistently produce valid data within the acceptance limits as specified within the department's certification requirements.

"Reporting limit" means a value established by the laboratory that is at or above the LOQ consistent with the method and compliance reporting requirements.

"Revoked certification" means a laboratory no longer fulfills the requirements of this chapter, and certification is revoked by the director upon determination of the director that the laboratory no longer fulfills the requirements for certification (Iowa Code section 455B.114).

"Signature authority" means the person with the managerial, educational, and technical experience authorized to sign analytical reports on behalf of the laboratory.

"Standard operating procedure" or *"SOP"* is a set of written instructions that describe, in detail, how to perform a laboratory method or process safely, consistently, and effectively.

"SHL" means the State Hygienic Laboratory at the University of Iowa.

"Suspended certification" means a temporary suspension of certification for a laboratory, conditional upon meeting the time frames in 83.6(5) "d" for the correction of the deficiency.

"Temporary certification" or *"temporary status"* means short-term transitional certification granted to a new laboratory that has no history of generating compliance data.

"Traceability" means the unbroken chain of events in the process of a sample being collected, received at the laboratory, prepared for analysis, analyzed, data reviewed and reported, and final disposal of the sample.

[ARC 9214C, IAB 5/14/25, effective 6/18/25]

PART B CERTIFICATION PROCESS

567—83.3(455B) Application for laboratory certification.

83.3(1) *Application forms.* Application for laboratory certification shall be made on department form 542-0492 (July 2021) and shall be accompanied by the nonrefundable fee specified in 83.3(2). The application for certification renewal shall be made at least 60 days prior to the certification expiration date. The department may require submission of additional information necessary to evaluate the application. All documentation and fees must be submitted to the department prior to the on-site audit. Failure to submit a complete application may result in denial of the renewal or certificate update.

83.3(2) *Fees and expenses.*

a. A nonrefundable fee for the administration, completion of on-site laboratory surveys and assessments, and enforcement of laboratory certification requirements shall be paid with the certification application.

(1) The on-site audit will not be conducted and certification will not be issued until the fees and expenses are paid and all other certification requirements are met. The fee for certification will not be refunded if an on-site audit is not performed.

(2) Out-of-state laboratories will be responsible for paying the expenses of an on-site audit, in addition to the standard certification fee if required, and the department or its agent will bill the out-of-state laboratory directly for the expenses.

(3) When a laboratory's certification status is changed to provisional or suspended and the period for correcting deficiencies extends beyond the certification period, the laboratory must continue to pay the required fees in order to maintain its certification status.

(4) Additional fees will be assessed for the following, and the department or its agent will bill the laboratory directly.

1. The laboratory is responsible for paying for any additional on-site audits, at a fee of \$300 per audit. An example of this is when an additional on-site audit is required when a laboratory seeks certification for an entirely new set of parameters for which it had previously not been certified.

2. When an on-site audit is required to inspect for deficiencies that the laboratory must correct, the fee is \$500 per audit.

- b.* Where a laboratory is certified for the same analyte in more than one environmental program area, the laboratory must meet all the applicable certification requirements in addition to the payment of the fees.
- c.* In general, the department does not certify calculations. However, it is acceptable to report calculated results to clients and for regulatory reporting purposes.
- d.* Applicable fees shall be based on the type of analytical service provided as follows:

ANALYTICAL GROUP	REGULATORY PROGRAM & PARAMETERS ¹	FEE
Asbestos	SDWA	\$400
Basic Drinking Water	SDWA (includes total coliform bacteria, <i>E. coli</i> , heterotrophic plate count, nitrate, nitrite, & fluoride)	\$800
Basic Wastewater	CWA (includes BOD ₅ , CBOD ₅ , TSS, & ammonia)	\$400
Bacteria	CWA (includes total coliform, fecal coliform, and <i>E. coli</i>)	\$800
	SDWA (basic drinking water) & CWA combined	\$1,300
Dioxin	SDWA	\$800
Effluent Toxicity Testing	CWA	\$800
Inorganics, including metals	CWA metals, inorganic compounds, and physical characteristics (\$400 per analyte up to a maximum of \$1,600)	\$400 to 1,600
	SDWA (includes metals, ammonia, cyanide, fluoride, bromate, bromide, chlorite, total organic carbon & other inorganic chemicals)	\$1,600
	SW/CS	\$1,600
	CWA & SDWA combined	\$2,400
	CWA & SW/CS combined	\$2,400
	SDWA & SW/CS combined	\$2,400
	CWA, SDWA, and SW/CS combined	\$2,800
Radionuclides	CWA	\$400
	SDWA (includes gross alpha, gross beta, photon emitters, radium, strontium, tritium, & uranium)	\$400
	SDWA & CWA combined	\$650
Synthetic Organic Chemicals (SOC)	CWA	\$1,600
	SDWA	\$1,600
	SW/CS	\$1,600
	CWA & SDWA combined	\$2,400
	CWA & SW/CS combined	\$2,400
	SDWA & SW/CS combined	\$2,400
	CWA, SDWA, & SW/CS combined	\$2,800
Volatile Organic Chemicals (VOC)	CWA	\$1,600
	SDWA	\$1,600
	SW/CS	\$1,600
	CWA & SDWA combined	\$2,400
	CWA & SW/CS combined	\$2,400
	SDWA & SW/CS combined	\$2,400
	CWA, SDWA, & SW/CS combined	\$2,800
Underground Storage Tank Program Methods (UST)	OA1 & OA2 for UST, CWA, & SW/CS programs	\$1,600
	OA1, OA2, & Air Gas for UST, CWA, & SW/CS programs	\$2,000
Other analytes not included in the above categories	SDWA, CWA, UST, or SW/CS	\$400 per analyte

¹CWA: Analysis of wastewater samples for the federal Clean Water Act.

SDWA: Analysis of drinking water samples for the federal Safe Drinking Water Act.

SW/CS: Analysis of water, soil, or solid samples for the solid waste or contaminated sites programs.

UST: Analysis of water and soil samples for the underground storage tank program.

e. Fees shall be paid by cashier's check, check, money order, credit card, electronic payment, or other means acceptable to the department, made payable to the Iowa department of natural resources laboratory certification program. Credit card or electronic payment may incur an additional fee. Purchase orders are not an acceptable form of payment. The fee shall be paid at least 60 days prior to the expiration date of any certification held by a laboratory. If a laboratory does not submit the application and fee by the expiration date, the laboratory is prohibited from conducting certified analytical tests until the application and fee are received by the department.

83.3(3) Reciprocity. Reciprocal certification of out-of-state laboratories by Iowa, and of Iowa laboratories by other states, is allowed. If the reciprocal state has a certification program for the area the lab is applying for in Iowa, the laboratory is required to obtain certification from their reciprocal state prior to receiving certification from Iowa. A laboratory must meet all Iowa certification criteria and pay all applicable fees as listed in this chapter. Any laboratory that is granted reciprocal certification in Iowa using primary certification from another state or provider is required to report any change in certification status from the accrediting state or provider to the department within 15 days of notification. A copy of the assessment report including the laboratory's approved corrective actions must be submitted to the department within 15 days after it is approved by the resident state or third-party accreditation provider. A laboratory that loses primary certification, either in its resident state program or third-party accreditation program, will also immediately lose certification for the same program area and parameters in Iowa, pursuant to 83.6(6) "a"(8).

a. *Out-of-state laboratories.* Where an out-of-state laboratory has received an on-site audit within its own state, the fee for certification shall not be reduced if an on-site audit is not performed by Iowa.

b. *Third-party accreditation.* The department will accept third-party accreditation from a state NELAP accreditation authority. The laboratory must provide the most recent on-site assessment and approved corrective action report.

[ARC 9214C, IAB 5/14/25, effective 6/18/25]

567—83.4(455B) Procedures for new laboratory certification or changes in certification. Laboratories that wish to become certified to conduct testing for an analyte or a method after the deadline for initial certification has passed, and any laboratory seeking initial certification, shall follow the procedures specified in rule 567—83.5(455B) for laboratory recertification. For changes in certification, the relevant fee must accompany the application where appropriate. New laboratories with no history of generating compliance data in any program area will be issued a temporary certification for a period of up to six months after the initial on-site audit. The laboratory may be re-audited in person or a document review may be conducted at the discretion of the SHL auditor(s).

[ARC 9214C, IAB 5/14/25, effective 6/18/25]

567—83.5(455B) Laboratory recertification. Laboratories shall be recertified every two years after initial certification. Applications for recertification must be on department form 542-0492 (June 2021) and must be submitted at least 60 days prior to the renewal date. Applications shall be accompanied by the nonrefundable fee specified in 83.3(2). To be recertified, laboratories must meet the following requirements.

83.5(1) Approved methodology. Laboratories must use methods promulgated or approved by the EPA or by the department. Notwithstanding an approval by the EPA, the department may use discretion in determining which methods may be used in Iowa. A laboratory may not analyze and report data from samples collected for an environmental program area until certified in that area. The laboratory shall submit supporting documentation such as calibration curves, MDL studies, LOQs, or other information upon request. The following are adopted by reference:

a. *Drinking Water* – 40 CFR Part 141 Subpart C (Monitoring and Analytical Requirements) as amended February 5, 2024; 40 CFR §141.74 (Filtration and Disinfection) as amended February 13, 2013; 40 CFR §141.89 (Control of Lead and Copper) as amended January 15, 2021; 40 CFR §141.131 (Disinfection By-Products) as amended February 13, 2013; 40 CFR §141.402 (Groundwater Rule) as amended February 13, 2013; 40 CFR §141.704 (Enhanced Treatment for Cryptosporidium) as amended

June 29, 2009; 40 CFR §141.852 (Revised TCR) as amended February 26, 2014; 40 CFR Part 901 (PFAS) as amended through June 25, 2024; 40 CFR §143.4 (Secondary Regulations) as amended June 29, 2009.

b. Wastewater (nonpotable water) – 40 CFR Part 136, June 17, 2024.

c. Municipal biosolids (sewage sludge) – 40 CFR Part 136, as amended June 17, 2024, and Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846 Update VII) as amended July 30, 2021.

d. Solid waste and contaminated sites – Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846 Update VII) as amended July 30, 2021.

e. Underground storage tanks – Iowa Methods OA-1 and OA-2, December 10, 2019, and EPA method 8260 – Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846 Update VII) as amended July 30, 2021.

83.5(2) Proficiency testing samples. Certified laboratories must satisfactorily analyze PTs at least once every 12 months for each analyte by each method in each program area for which the laboratory intends to retain certification unless a PT sample is not available for the particular analyte, method, or program area. Results must be submitted electronically by the PT provider to the department at labcert@dnr.iowa.gov along with a statement of the method used once the study is published. The laboratory must maintain records of all PT samples including summary pages, explanations, and footnotes, pursuant to the recordkeeping requirements in 83.5(8) “b.”

a. Test requirements.

(1) PT samples shall be analyzed in accordance with the laboratory’s routine standard operating procedures using the same quality control, acceptance criteria, and staff as used for the analysis of routine environmental samples. PT samples may not be analyzed multiple times for the purpose of averaging results to be reported to the PT provider.

(2) The PT sample shall be analyzed by a different analyst(s) or analytical team in following years, if there are multiple analysts in the laboratory.

(3) Once the results of a PT sample are submitted to the PT provider, remaining PT samples may be used as check samples or for demonstration of capability of analysts.

(4) Laboratories that receive unacceptable PT result(s) shall notify the department within 10 days of the unacceptable result(s). This does not include the required corrective action report.

b. Performance testing providers and acceptance limits. All PT samples must be obtained from a NELAP accredited provider. Performance test results shall be evaluated using criteria from NELAP field of proficiency tables except where noted otherwise. If there is a difference between the NELAP field of proficiency tables and federal rules, the rules shall prevail. Approved PT vendors and fields of proficiency tables may be found at nelap-institute.org.

83.5(3) Notification of major changes. Laboratories must notify the department, in writing, of major changes in critical or essential personnel, equipment, laboratory location, or other major change that might alter or impair analytical capability. The department may issue a notice of violation based on cause.

a. Major equipment. Laboratories must notify the department 90 days, whenever possible, prior to installation of major equipment when the technology is not currently being utilized by the laboratory. This includes, but is not limited to, inductively coupled plasma spectrophotometers, mass spectrometers, gas chromatographs, liquid chromatographs, and continuous spectrophotometers. The installation of a new water bath or incubator does not need to be reported. If requested, the laboratory must submit the DOC to the department for review and approval prior to reporting compliance data using the new equipment.

b. Laboratory relocation. Laboratories must notify the department 90 days prior to a laboratory relocation. Laboratories must complete a DOC for each major piece of equipment once it has been relocated to the new laboratory. If requested, the laboratory must submit the DOC to the department for review and approval prior to reporting compliance data.

c. Personnel changes. Laboratories must notify the department 30 days prior to, whenever possible, but in no circumstance later than ten days after, the departure of critical or essential personnel. If requested, a DOC must be submitted to the department before the laboratory may report environmental data. DOC records for all staff must be maintained on file for review by an auditor. The loss of a critical staff person means the lab will not be able to analyze samples and must subcontract samples for a specific method(s) or

program area(s) until another person is hired to perform the particular function or analysis and has completed an initial DOC. The loss of an essential staff person means that existing staff must undergo additional training before they can assume the role.

d. Laboratory shutdown. Laboratories must notify the department within five days if the laboratory has shut down due to a natural or man-made disaster, a cybersecurity incident, or other occurrence that renders the laboratory unable to perform analyses for Iowa clients.

e. Data quality issues. If a laboratory becomes aware that there are systematic data quality issues that affect the result(s) for one or more analytes, the laboratory must notify the department within five days. The laboratory must resolve the issues, submit a corrective action report, and submit an amended analytical report to the client(s) and the department within 30 days.

83.5(4) Annual requirements. Laboratories are required to perform the following updates on an annual basis. Documentation of these updates must be maintained in paper or electronic form, or a combination thereof, pursuant to the recordkeeping requirements in 83.5(8) “b” and shall be made available during the on-site audit, or if requested by the department.

- a.* Balance maintenance and weight verification;
- b.* Working thermometer verification;
- c.* Review the QA plan and document the date, reviewer, and any changes;
- d.* Review SOPs, and document the review and any changes to the SOPs. Confirm that QC requirements are performed with each analysis and that additional QC requirements are conducted monthly, quarterly, or annually as needed;
- e.* Review sample handling, preservation and storage requirements if they are not addressed in the SOP;
- f.* Conduct a continuing DOC for analysts;
- g.* Run and document calibration curves;
- h.* Perform annual PTs;
- i.* Review manufacturer equipment maintenance schedules, perform scheduled maintenance, and document the maintenance performed;
- j.* Replace and document the source of reference cultures used for microbiological analyses; and
- k.* Check spreadsheets annually to determine that calculated results have not changed due to software updates. Spreadsheet calculations may need to be checked manually.

In addition to the above requirements, it is recommended that the laboratory review the safety plan with all employees and conduct an internal audit annually.

83.5(5) Site audits.

a. SHL certification. The department has designated the SHL as its appraisal authority for laboratory certification. The SHL is responsible for attaining and maintaining laboratory certification for the SDWA program that is acceptable to the EPA. The SHL shall obtain accreditation from a state NELAP accreditation authority in all department program areas specified in 83.1(3), where available. The SHL shall forward audit reports to the department according to the time frame in 83.3(3). The SHL is not required to pay the fees for laboratory certification.

b. On-site audits. Laboratories must consent to a periodic site audit by the department or its designee, at least every two years. However, on-site audits may be conducted more frequently if the laboratory undergoes a major change that may alter or impair analytical capability, fails a PE sample analysis, or if the department questions an aspect of data submitted that is not satisfactorily resolved. Laboratories certified by reciprocity generally are not required to have an on-site audit conducted by the SHL. However, the department and the SHL reserve the right to conduct an on-site audit.

83.5(6) Period of validity.

a. Certification shall be valid for a period not to exceed two years from the date of issuance. Certification shall remain in effect until certification is either renewed or revoked, provided a laboratory has submitted a timely and complete application, and paid the appropriate fee.

b. Laboratories that have not submitted a timely and complete application and have not paid the appropriate fee may not report compliance data if their certification has expired.

83.5(7) Reporting requirements. Laboratories may not analyze or report sample results for any analyte, analytical series, or environmental program area until an initial certification status of certified or temporary has been granted by the department. Any data generated before certification status is granted will be considered invalid for compliance purposes. A laboratory with provisional status may analyze and report analyses for compliance purposes. A certified laboratory may contract analyses to another certified laboratory. The responsibility lies with the primary certified laboratory contracting for services to verify that the secondary contracting laboratory is certified by the department and to ensure that reporting requirements and deadlines are met.

a. All program areas. Laboratories that generate data for clients must list all of the following elements on paper or electronic reports provided to clients.

- (1) Iowa certified laboratory number;
- (2) Laboratory name, address, and phone number;
- (3) Laboratory sample ID;
- (4) Client sample location ID;
- (5) Regulatory ID number, such as a permit number;
- (6) Date and time of sample collection;
- (7) Date and time of sample receipt and temperature (may be recorded on chain of custody, receiving sheet, or comments);
- (8) Sample collector name;
- (9) Date and time of analysis;
- (10) Analyst name;
- (11) Matrix;
- (12) Analyte;
- (13) Analytical method used;
- (14) The reporting limit;
- (15) Analysis result;
- (16) Units of measure;
- (17) Subcontracting laboratory or laboratories, if used;
- (18) Signature of signatory authorized to sign analytical reports; and
- (19) Chain of custody records.

b. Additional reporting for all program areas.

- (1) The use of whiteout to correct errors is strictly prohibited.
- (2) Laboratory records and final reports shall be recorded in ink or electronically signed.
- (3) A laboratory shall not express an analytical result as either:
 1. Lower than the LOQ, such as using the MDL; or
 2. As zero, unless specifically required by rule.
- (4) Laboratories reporting data for the purpose of a monthly operation report (MOR) or discharge monitoring report (DMR) must follow the instructions and use the templates specified by the program area(s).

c. Water supply program.

(1) Certified laboratories must report all analytical test results for all public water supply systems (PWS) using the electronic reporting system provided by the department. New laboratories shall be fully compliant with electronic data reporting requirements no later than 45 days after the laboratory begins analysis of compliance samples. If a PWS is required by the department to collect and analyze a sample for an analyte not normally required by 567—Chapters 41 and 43, the laboratory testing for that analyte must also be certified and report the results of that analyte to the department. A PWS may request that a laboratory add additional analytes for analysis after samples are received by the laboratory, but may not remove an analyte originally requested after the laboratory has initiated analysis of those analytes without written department approval. It is the laboratory's responsibility to correctly assign and track the sample identification number, the facility ID, and source/entry point data for all reported samples.

1. The following are examples of sample types for which data results must be reported:

- Routine: a regular sample that includes samples collected for compliance purposes at various sampling frequencies;
 - Repeat: a sample that must be collected after a positive result from a routine or previous repeat total coliform sample, per 567—paragraph 41.2(1) “j.” Repeat samples must be analyzed by the same laboratory that analyzed the associated original routine sample;
 - Confirmation: a sample that verifies a routine sample, normally used to determine compliance with a health-based standard;
 - Special: a nonroutine sample, such as raw, plant, and troubleshooting samples, which cannot be used to comply with monitoring requirements assigned by the department;
 - Maximum residence time: a sample collected at the maximum residence time location in the distribution system, usually for disinfection byproduct measurement; and
 - Replacement: a sample that replaces a missed sample from a prior monitoring period resulting in a monitoring violation.
2. The following additional types of data must be reported to the department:
 - MOR data that is required by the department to demonstrate compliance with public health standards; and
 - Raw water sampling results specifically covered by 567—Chapters 40 to 43 for new surface water or groundwater sources, or reconstruction of groundwater sources.
 3. The following are examples of data results that are not required to be reported by a laboratory to the department:
 - Routine MOR data; or
 - Distribution samples for the Total Coliform Rule 567—subrule 41.2(1) for water main repair or installation.
 4. The sample type cannot be changed after submittal to the laboratory, without written department approval. The prescreening, splitting, or selective reporting of compliance samples is not allowed.
 - (2) Certified laboratories must report all analytical results to the PWS for which the analyses were performed.
 - (3) Analytical results must be reported to and received by the department by the seventh day of the month following the month in which the samples were analyzed.
 - (4) In addition to the monthly reporting of analytical results, the following results must be reported within 24 hours of the completion of the analysis, including data reduction, to the department by email or other acceptable method acceptable to the department, and to the PWS for which the analyses were conducted:
 1. Results of positive routine coliform bacteria samples, and all repeat and follow-up samples; and
 2. Results of any contaminant that exceeds public drinking water standards (maximum contaminant level, treatment technique, action level, or health advisory), and any subsequent confirmation samples.
- Results available outside of routine business hours must be reported to the department’s Environmental Emergency Reporting Hotline at 515.725.8694.
- (5) If requested by the department, certified laboratories shall report their MDLs, LOQs, and any other pertinent information when reporting results for PWSs.
 - d. *UST program.* No additional information.
 - e. *Wastewater program.* No additional information.
 - f. *Solid waste and contaminated site programs.* No additional information.
- 83.5(8) Recordkeeping.**
- a. *Appraisal authority.* The laboratory certification program appraisal authority must retain the records for on-site laboratory audits and certification program reviews. The records must be maintained in an easily accessible manner for a period of six years, including the last two on-site audits. The records include correspondence used to determine compliance with the laboratory certification program requirements, and may include checklists, corrective action reports, final reports, certificates, PT study results, and any other related documents.
 - b. *Laboratories.* Laboratories shall retain laboratory records in paper or electronic form or a combination of both. Laboratory records include, but are not limited to, calibration curves; raw data;

calculations and supporting data such as chromatographs; analytical results; lists of chemicals and equipment used; QA plans; SOPs; and PT results. Laboratory records shall be retained according to the following schedule:

- (1) Drinking water: microbiology and turbidity, five years; chemical, ten years; lead and copper rule, twelve years.
- (2) Wastewater: all analytes, three years. Federal DMRQA reports, three years.
- (3) Sewage sludge (municipal biosolids): all analytes, five years.
- (4) Solid waste and contaminated sites: all analytes, five years.
- (5) Underground storage tanks: all analytes, five years.

[ARC 9214C, IAB 5/14/25, effective 6/18/25]

567—83.6(455B) Criteria and procedure for provisional, suspended, and revoked laboratory certification.

83.6(1) *Voluntary withdrawal of certification.* A laboratory may voluntarily withdraw certification for an analyte, a related analytical series, an environmental program area, or the entire laboratory at any time in lieu of receiving a downgraded certificate with a provisional, suspended, or revoked status.

83.6(2) *Provisional certification criteria.*

a. The department may downgrade certification to provisional status based on cause. The reasons for which a laboratory may be downgraded to provisionally certified status include, but are not limited to, the following list.

- (1) Failure to analyze a performance evaluation (PT) sample annually within acceptance limits;
- (2) Failure to notify the department within the time period specified in 83.5(3) of changes in essential personnel, equipment, laboratory facilities, or other major changes that might impair analytical capability;
- (3) Failure to satisfy the department that the laboratory is maintaining the required standard of quality based on an on-site audit;
- (4) Failure to report compliance data in a timely manner to the department or the client, thereby preventing timely compliance with environmental program regulations.

b. The department may assess an administrative penalty for a laboratory's failure to comply with the laboratory certification or reporting requirements.

83.6(3) *Provisional certification procedure.*

a. Laboratory notification. If a laboratory is subject to a downgrade to provisional status on the basis of 83.6(2), the department will notify the laboratory or owner in writing of the downgraded status. Certification may be downgraded to provisional for an analyte, a related analytical series, an environmental program area, or the entire laboratory.

b. Reporting. A provisionally certified laboratory may continue to analyze samples for compliance purposes.

c. Right to appeal. There is no appeal for this process, as it does not affect a laboratory's ability to analyze compliance samples and report to the department.

d. Correction of deficiencies.

(1) Once the department notifies a laboratory in writing that it has been downgraded to provisionally certified status, the laboratory must correct the problem within the following time frames, unless a written extension is obtained from the department. If the problem is not corrected, the laboratory is subject to suspension for that analyte, related analytical series, environmental program area, or the entire laboratory.

1. Unacceptable PT sample result within two months of notification.
2. Procedural deficiency within three months of notification.
3. Administrative deficiency within three months of notification.
4. Equipment deficiency within three months of notification.

(2) The laboratory shall submit a corrective action report(s), including documentation that demonstrates the laboratory has complied with the required corrective actions.

e. Reinstatement. Certification will be reinstated when the laboratory can demonstrate that all conditions for laboratory certification have been met to the department's satisfaction and that the deficiencies that caused provisional certification status have been corrected. The SHL may conduct an on-site audit to verify that corrective actions have been implemented.

83.6(4) *Suspended certification criteria.*

a. The department may downgrade certification to suspended status based on cause. The reasons for which a laboratory may be downgraded to suspended status include, but are not limited to, the following:

- (1) Failure to analyze a PT sample annually within acceptance limits;
- (2) Failure to correct previously identified deficiencies, which resulted in provisional certification status, within the prescribed time frames of 83.6(3) “d”(1);
- (3) Failure to satisfy the department that the laboratory is producing accurate data;
- (4) Failure to use required analytical methodology for analyses submitted to the department; or
- (5) Repeated failure to report compliance data in a timely manner.

b. Administrative penalty. The department may assess an administrative penalty for a laboratory’s failure to comply with the laboratory certification or reporting requirements.

c. Emergency certification suspension. The department may suspend certification without providing notice and opportunity to the laboratory to be heard if the department finds that the public health, safety, or welfare imperatively requires emergency action, and incorporates a finding to that effect in its administrative order, pursuant to 561—Chapter 7.

83.6(5) *Suspended certification procedure.*

a. *Laboratory notification.* If a laboratory is subject to downgrading to suspended status on the basis of 83.6(4), the department will notify the laboratory or owner in writing of its intent to suspend certification in accordance with 561—Chapter 7. Certification may be suspended for an analyte, a related analytical series, an environmental program area, or the entire laboratory.

b. *Reporting.* Once the suspension is effective, a laboratory must immediately discontinue analysis and reporting of compliance samples, may not analyze or report samples for compliance with departmental standards, and must notify the laboratory’s Iowa regulated clientele and other state certifying agencies of the change of the laboratory certification status within three days. Any results generated during the period of suspension may not be used for compliance purposes by the department.

c. *Right to appeal.*

(1) The laboratory may appeal this decision by filing a written notice of appeal and request an administrative hearing with the department director within 30 days of receipt of the notice of suspension of certification. Contested case procedures under 561—Chapter 7 shall govern administration of the appeal. The appeal must identify the specific portion(s) of the department action being appealed, be supported with a statement of the reason(s) for the challenge, and be signed by a responsible official from the laboratory.

(2) If no timely notice of appeal is filed, suspension is effective 30 days after receipt of the notice of suspension unless an emergency suspension order is in effect.

d. *Correction of deficiencies.*

(1) Once the department notifies a laboratory in writing that it has been downgraded to suspended status, the laboratory must correct the problem within the following timetable, unless a written extension is obtained from the department. If the problem is not corrected, the laboratory is subject to revocation for that analyte, related analytical series, environmental program area, or the entire laboratory.

1. Unacceptable PT sample result within two months of notification.
2. Procedural deficiency within three months of notification.
3. Administrative deficiency within three months of notification.
4. Equipment deficiency within three months of notification.

(2) The laboratory shall review the problems cited and, within the time period designated by the department, submit a corrective action report(s) including documentation that demonstrates the laboratory has complied with the required corrective actions. The department shall consider the adequacy of the response and notify the laboratory of its certification status and may follow up to ensure that corrective actions have been taken.

e. *Reinstatement.*

(1) Fee.

1. The laboratory will not be required to pay an additional fee if recertification affects an analyte or related analytical series, provided that:

- The laboratory is currently certified for other analytes, or

- A fee was paid within the two-year certification period for that related analytical series and the laboratory is certified for other parameters within that related analytical series.

2. A fee is required when suspension affects a related analytical series, effectively deleting that fee group from certification (such as all microbiological parameters in SDWA-MICRO), an environmental program area, or the entire laboratory. A fee is also required if an additional on-site audit is required.

(2) Certification will be reinstated when the laboratory can demonstrate that all conditions for laboratory certification have been met and that the deficiencies that caused the suspension have been corrected. This may include an on-site audit, successful analysis of unknown samples, or any other measure that the department deems appropriate.

83.6(6) *Revoked certification criteria.*

a. The department may revoke certification for cause. The reasons for which a laboratory's certification may be revoked include, but are not limited to, the following:

- (1) Failure to correct deficiencies according to the time period specified in 83.6(5) "d"(1);
- (2) Submission of a PT sample to another laboratory for analysis and reporting the data as its own;
- (3) Falsification of data or other deceptive practices;
- (4) Failure to use required analytical methodology for analyses submitted to the department;
- (5) Failure to satisfy the department that the laboratory is maintaining the required standard of quality based on the on-site audit;

(6) Persistent failure to report compliance data to the regulated client or the department in a timely manner, thereby preventing compliance with state regulations and endangering public health;

(7) Subverting compliance with state regulations by actions such as changing the sample type for a noncompliance sample to a compliance sample after its submission to the laboratory, allowing compliance samples to be changed to other noncompliance sample types, or selective reporting of split sample results; or

(8) For laboratories certified through a reciprocal agreement with another state or third-party accreditation program, loss of certification in either the resident state or third-party accreditation program is cause for immediate revocation of certification in Iowa for the same parameters or program areas for which certification was lost.

b. The department may assess an administrative penalty for a laboratory's failure to comply with the laboratory certification or reporting requirements.

c. Emergency revocation. The department may revoke certification without providing notice and opportunity to the laboratory to be heard if the department finds that the public health, safety, or welfare imperatively requires emergency action, and incorporates a finding to that effect in its administrative order, pursuant to 561—Chapter 7.

d. Laboratory-requested revocation (withdrawal of certification). The department may revoke certification upon receipt of a written request by the certified laboratory for removal from the certification program.

83.6(7) *Revoked certification procedure.*

a. *Laboratory notification.* Except for the instance when the laboratory voluntarily requests revocation in 83.6(6) "d," if a laboratory is subject to revocation on the basis of 83.6(6), the department will notify the party in writing of its intent to revoke certification in accordance with 561—Chapter 7. Certification may be revoked for an analyte, a related analytical series, an environmental program area, or the entire laboratory.

b. *Reporting.* Once revocation is effective, a laboratory must immediately discontinue analysis and reporting of compliance samples, shall not analyze or report samples for compliance with departmental standards, and must notify the laboratory's Iowa-regulated clientele and other state certifying agencies of the change of the laboratory certification status within three business days of receipt of the final notice. Any results generated after revocation may not be used for compliance purposes by the department.

c. *Right to appeal.* When a laboratory requests revocation pursuant to 83.6(6) "d," the revocation will be issued promptly and will be effective immediately with no appeal process.

(1) The laboratory may appeal this decision by filing a written notice of appeal and request for an administrative hearing with the department director within 30 days of receipt of the notice of revocation of

certification. Contested case procedures under 561—Chapter 7 shall govern further administration of the appeal. The appeal must identify the specific portion(s) of the department action being appealed, be supported with a statement of the reason(s) for the challenge, and be signed by a responsible official.

(2) If no timely notice of appeal is filed within the 30-day time period, revocation is effective 30 days after receipt of the notice of revocation.

d. Reinstatement. A laboratory that has had its certification revoked may apply for certification in accordance with rule 567—83.3(455B) once the deficiencies have been corrected.

[ARC 9214C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.113 through 455B.115.

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¹ Effective date of 42.2(1) “b”(9) and (10) delayed 70 days by the Administrative Rules Review Committee at its meeting held November 10, 1992.

² Effective date of Ch 83 delayed 70 days by the Administrative Rules Review Committee at its meeting held May 14, 1996.

CHAPTERS 84 to 89
Reserved

TITLE VII
WATER POLLUTION CONTROL STATE REVOLVING FUND
CHAPTER 90
CLEAN WATER STATE REVOLVING FUND
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 6/18/30

567—90.1(455B) Statutory authority, purpose, and general policy.

90.1(1) Statutory authority. The department of natural resources and the Iowa finance authority are jointly designated to administer the clean water state revolving fund (CWSRF). Authority to administer this fund is provided by Iowa Code sections 455B.291 through 455B.299 and the federal CWA. Section 603(c) of Title VI of the CWA allows the use of state revolving funds to assist in the construction of POTWs and WPC projects.

90.1(2) Purpose. This chapter provides the definitions, forms, general project and program administration rules, criteria for loan eligibility, and criteria for rating and ranking WPC projects for the CWSRF point source and NPS pollution control programs. The selection criteria, methods for selecting projects or programs for loans, and the extent to which these policies must be described in the IUP are required by 40 CFR §35.3150.

90.1(3) Administration. The department, in conjunction with the authority, has been delegated the responsibility of administering the CWSRF program described in this chapter and the DWSRF program described in 567—Chapter 44. The director may coordinate with the authority under the terms of an interagency agreement entered into pursuant to Iowa Code chapter 28E.

90.1(4) Program funding. The commission shall set funding targets for point source and NPS activities and adjust the fundable project list to ensure that the short- and long-term goals of the IUP are achieved. It is the intent of the commission to reserve a portion of the CWSRF funds to provide for the purpose of making low-interest loans for NPS WPC projects. The amount for each NPS program will be determined in the IUP. Loans of up to 100 percent of the eligible costs of WPC projects will be made available pursuant to these rules, rules established by the authority, and Title VI of the CWA.

90.1(5) State capitalization grant. The CWA authorizes the EPA to offer capitalization grants to states for use in a revolving fund loan program. A portion of the capitalization grant, as allowed by Title VI of the CWA, will be used to administer the CWSRF program.

90.1(6) Federal funding coordination. Projects may use CWSRF funds to complete the financing of projects partially funded by other federal programs.

90.1(7) Project determination. A project must comply with this chapter to be eligible for a CWSRF loan. The department shall use a priority rating system to rate eligible projects for funding. An eligible project may be either a point source project or an NPS project or activity. CWSRF assistance will be available to projects in priority order. Additional rating criteria for NPS activities will be established in the IUP and circumstances for use are described in 90.14(1). Projects or activities qualifying for CWSRF assistance shall be identified in the IUP on the state PPL, developed pursuant to this chapter, and only those projects or activities may be considered fundable. WPC projects that provide the best water quality improvements or protection based on the rating system and are ready to proceed are to be funded.

90.1(8) Decisions. Department decisions are final unless the recipient files a written petition for review with the director. The petition must be addressed to the director and clearly state the decision in question and the basis for the requested review. The recipient has the right to appeal a decision to the commission pursuant to Iowa Code chapter 17A or to the state court.

90.1(9) Public participation. The public has an opportunity annually, and quarterly as needed, to comment on both the fundable list and the short- and long-term goals of the IUP.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.2(455B) Definitions, abbreviations, and forms.

90.2(1) Definitions. In addition to the definitions and references in 567—Chapter 40, the following definitions are applicable to this chapter:

“*Comprehensive Nutrient Management Plan*” or “*CNMP*” means a conservation system that is unique to an AFO. A CNMP is a grouping of conservation practices and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. A CNMP incorporates practices to use animal manure and organic by-products as beneficial resources. A CNMP addresses natural resource concerns dealing with soil erosion, manure, and organic by-products and their potential impacts on all natural resources including water and air quality, which may derive from an AFO. A CNMP is developed to assist an AFO owner/operator in meeting all applicable local, tribal, state, and federal water quality goals or regulations. For nutrient-impaired stream segments or water bodies, additional management activities or conservation practices may be required by local, tribal, state, or federal water quality goals or regulations.

“*CWA*” or “*Clean Water Act*” means the federal Water Pollution Control Act effective July 1, 2024, 33 U.S.C. §1251 et seq.

“*CWSRF*” means the clean water state revolving fund, also known as the water pollution control works revolving loan fund as defined in Iowa Code section 455B.291.

“*Eligible entity*” means a person eligible under the provisions of the CWA, the SDWA, and the commission rules to receive loans for projects from either of the revolving loan funds.

“*Eligible project*” means, in the context of WPC facilities, the acquisition, construction, reconstruction, extension, equipping, improvement, or rehabilitation of any works and facilities useful for the collection, treatment and disposal of sewage and industrial waste in a sanitary manner including treatment works as defined in Section 212 of the CWA, and including construction and undertaking of NPS WPC projects and related development activities authorized under the CWA. Projects for the primary purpose of speculative growth are considered ineligible.

“*Energy conservation*” means renewable energy construction projects such as wind, solar, etc.

“*Facility plan*” means a report certified by a professional engineer licensed to practice in Iowa and prepared in conformance with Chapter 1 of the IWFDS. This report shall include an evaluation of the facility, identify problems, provide alternatives and a recommended solution, outline financing options and project timeline, and address other applicable issues ensuring the viability of the project and the facility to meet project goals and discharge requirements.

“*Fiscal year*” means the state fiscal year starting July 1 and ending June 30.

“*Intended use plan*” or “*IUP*” means a plan identifying the intended uses of funds available for loans in the WPC state revolving fund for each fiscal year as described in Section 606(c) of the CWA.

“*IWFDS*” means the Iowa Wastewater Facilities Design Standards, effective June 2025, located on the department’s website at www.iowadnr.gov.

“*Municipality*” means the city, county, sanitary district, state agency, or other governmental corporation or body empowered to provide sewage collection and treatment services, or any combination of two or more such governmental bodies, or corporations acting jointly, in connection with a project.

“*New AFO*” means an animal feeding operation that meets at least one of the following criteria:

1. It was constructed after January 1, 2006.
2. Animal production at the site was resumed after being discontinued for at least 12 months.
3. Production facilities were altered in order to house a different animal species than was produced previously.

“*Nontraditional project*” means a project whose primary purpose is not to protect or improve water quality. A secondary purpose of the project does include water quality improvement or protection.

“*NPS*” means nonpoint source pollution which does not have a single point of origin and/or is not introduced into a receiving stream from a specific outlet. NPS pollution sources are diffuse and may be a result of runoff, precipitation, atmospheric deposition, drainage, seepage, or hydrological modification.

“*POTW*” means publicly owned treatment works as defined in Section 212 of the CWA.

“*Private sewage disposal system*” or “*PSDS*” is defined in 567—subrule 69.1(2). For the purposes of this chapter, “PSDS” means the same as “onsite wastewater treatment system” or “onsite system.”

“*Project category*” means identified categories of projects that comprise mutually exclusive classes of facilities. Each category and the types of projects included in the category are listed below.

1. Category I. Secondary treatment—wastewater treatment costs necessary to meet the minimum level of treatment defined by the CWA.
2. Category II. Advanced treatment—wastewater treatment costs necessary to attain a level of treatment that is more stringent than standard secondary treatment or to produce a significant reduction in nonconventional or toxic pollutants present in the treated wastewater.
3. Category III–A. Infiltration/inflow (I/I) correction—costs for correction of sewer system I/I problems. Infiltration includes controlling the penetration of water into a sanitary or combined sewer system from the ground through defective pipes or manholes. Inflow includes controlling the penetration of water into the system from drains, storm sewers, and other improper entries. This category also includes costs for preliminary sewer system analysis and detailed sewer system evaluation surveys.
4. Category III–B. Sewer replacement/rehabilitation—costs for the reinforcement or reconstruction of structurally deteriorating sanitary or combined sewers. The corrective actions must be necessary to maintain the structural integrity of the system. Rehabilitation is considered to be extensive repair of existing sewers (collector and interceptor) beyond the scope of normal maintenance programs, when sewers are collapsing or structurally unsound. “Replacement” is the construction of parallel sewer or sewers that perform the function of existing sewers where existing sewers are to be abandoned. Sewer work associated with I/I elimination is considered a Category III–A need. Relief sewers do not fall within this category since they are newly constructed sewers with a function beyond that of existing sewers.
5. Category IV–A. New collector sewers and appurtenances—costs of new pipes used to collect and carry wastewater from a sanitary or industrial wastewater source to an interceptor sewer that will convey the wastewater to a treatment facility. The collection system is considered as those public sewers which have a principal purpose of providing service for individual users in existing residential and commercially developed areas to enable collection of wastewater in a centralized system. Pumping stations, force mains, and other related appurtenant structures are considered part of the collection system if their primary mechanical function relates to the collection system.
6. Category IV–B. New interceptor sewers and appurtenances—costs for constructing new interceptor sewers and pumping stations to convey wastewater from collection sewer systems to a treatment facility or to another interceptor sewer. Relief sewers are included in this category where additional sewer capacity is required to accommodate all wastewater in a separate sewer system to ensure that it is transported to a wastewater treatment plant for adequate treatment, and to prevent public health hazards within the service area. Relief sewers may include parallel sewers. Pumping stations and force mains and other related appurtenant structures are considered in this category if their primary mechanical function relates to the interceptor’s principal purpose. Equalization basins are included in this category.
7. Category V. Combined sewer overflow (CSO) correction—costs to prevent or control the periodic discharges of mixed stormwater and untreated wastewater (CSOs) that occur when the capacity of a sewer system is exceeded during a wet weather event. This category does not include costs for overflow control allocated to flood control, drainage improvement, or the treatment or control of stormwater in separate storm systems.
8. Stormwater management program categories. The following categories include costs to address the described stormwater management program activities:
 - Category VI. Gray infrastructure—costs to plan and implement structural and nonstructural measures to control the runoff of water resulting from precipitation (stormwater) with the purpose of improving and protecting water quality. This category includes controlling stormwater pollution from diffuse sources by reducing pollutants in runoff from commercial and residential areas served by the storm sewer, detecting and removing illicit discharges and improper disposal into storm sewers, monitoring pollutants in runoff from industrial facilities that flow into municipal separate storm sewer systems, and reducing pollutants in construction site runoff discharged to municipal separate storm sewers.
 - Category VI–A. Stormwater conveyance infrastructure—planning, design, and construction costs associated with stormwater conveyances including pipes, inlets, roadside ditches, and other similar mechanisms. These costs will be eligible if they are combined with practices described in Category VI–B or VI–C in order to achieve water quality protection or improvement.

- Category VI–B. Stormwater treatment systems—planning, design, and construction costs associated with stormwater treatment including wet ponds, dry ponds, manufactured devices, and other similar means. These costs will be eligible if these activities are implemented in order to achieve water quality protection or improvement.

- Category VI–C. Green infrastructure—planning, design, and construction costs associated with low-impact development and green infrastructure, such as bioretention, constructed wetlands, permeable pavement, rain gardens, green roofs, cisterns, rain barrels, vegetated swales, or restoration of riparian buffers and flood plains. Projects in this category can be both publicly owned and privately owned.

- Category VI–D. General stormwater management—costs associated with implementing a stormwater management program, such as geographic information systems or tracking systems, equipment such as street sweepers and vacuum trucks, stormwater education program startup costs, and stormwater management plan development.

9. NPS project categories. The following categories include costs to address NPS project categories with certain activities, as described:

- Category VII–A. NPS control: agriculture (cropland)—costs associated with agricultural activities related to croplands, such as plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting.

- Category VII–B. NPS control: agriculture (animals)—costs associated with agricultural activities related to animal production, such as confined animal facilities, open feedlots, and grazing.

- Category VII–C. NPS control: silviculture—costs associated with forestry activities such as removal of streamside vegetation, road construction and use, timber harvesting, and mechanical preparation for tree planting.

- Category VII–E. NPS control: groundwater protection (unknown source)—costs associated with groundwater protection needs such as wellhead and recharge protection activities.

- Category VII–F. NPS control: marinas—costs associated with boating and marinas, such as poorly flushed waterways, boat maintenance activities, sewage discharge from boats, and the physical alteration of shoreline, wetlands, and aquatic habitat during the construction and operation of marinas.

- Category VII–G. NPS control: resource extraction—costs associated with mining and quarrying activities.

- Category VII–H. NPS control: brownfields—costs associated with abandoned industrial sites that might have residual contamination (brownfields).

- Category VII–I. NPS control: storage tanks—costs associated with tanks designed to hold gasoline, other petroleum products, or chemicals. The tanks may be located above or below ground level.

- Category VII–J. NPS control: landfills—costs associated with sanitary landfills.

- Category VII–K. NPS control: hydromodification—costs to address the degradation of water resources as a result of altering the hydrological characteristics of noncoastal waters, including channelization and channel modification, dam, and streambank and shoreline erosion. Work involving wetland or riparian area protection or restoration is included in this category.

10. Category X. Recycled water distribution—costs associated with conveyance of treated wastewater that is being reused (recycled water), including associated rehabilitation/replacement needs.

11. Category XII. Decentralized sewage treatment—costs associated with the rehabilitation or replacement of PSDSs or clustered (community) systems. This category also includes the treatment portion of other decentralized sewage disposal technologies.

“Project completion” means the date the final loan certificate is signed by the recipient.

“Sponsor project” is defined in Iowa Code section 455B.199.

“State project priority list” or *“PPL”* means the list of projects in priority order that may qualify for CWSRF loan assistance.

90.2(2) Abbreviations. In addition to the abbreviations in 567—Chapter 40, the following abbreviations are applicable to this chapter.

Abbreviation	Meaning
AFO	animal feeding operation
BMP	best management practice

Abbreviation	Meaning
EPA	U.S. Environmental Protection Agency
GNS	general nonpoint source
LWQP	livestock water quality linked-deposit program
LWWP	local water protection project linked-deposit program
MMP	manure management plan
NRCS	USDA Natural Resource Conservation Service
NMP	nutrient management plan
OSWAP	onsite wastewater assistance linked-deposit program
SWCD	soil and water conservation district
USDA	U.S. Department of Agriculture
WPC	water pollution control

90.2(3) Forms. All CWSRF forms may be obtained from the department's state revolving fund section and may be downloaded from www.iowasrf.com. Recipients of assistance shall comply with the applicable department rules.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.3(455B) IUP preparation.

90.3(1) Development. The department shall prepare an IUP at least annually and on a quarterly basis as needed. The IUP will be subject to public participation and approved by the commission.

90.3(2) Notification. A public hearing process is included in the IUP adoption process to provide opportunity for public participation. A notice is published that explains the purpose of the IUP and how additional information may be obtained. All materials relating to the IUP will be posted at www.iowasrf.com.

90.3(3) Comments. Comments regarding the proposed IUP will be accepted during the notice period, at the public hearing, and in writing. After evaluation of all pertinent comments, the IUP will be revised, if necessary, and recommended for commission approval. Subsequent approval by the commission will establish the IUP to be used for loan assistance.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.4(455B) IUP contents. The IUP will identify the anticipated uses of loan funds available for that fiscal year and will include the following information:

90.4(1) State PPL. The state PPL contains the projects eligible for CWSRF direct loans. The PPL includes projects scheduled for loans from funds available during the fiscal year. Projects will be considered in priority order for placement on the fundable list.

a. The department will consider the following in developing the list of fundable projects for the IUP:

- (1) How the project conforms to the short- and long-term goals of the CWSRF;
- (2) The priority rating of the POTW project;
- (3) Whether a POTW project will be ready to proceed on a schedule consistent with time requirements for outlay of funds;

- (4) Whether the proposed project addresses the need upon which the eligible entity's priority is based;
- (5) The funds available, department priorities, and the department's administrative capacity; and
- (6) The applicant's conformance to process guidelines provided by the department.

b. The PPL will be reviewed at least annually or quarterly as needed to update schedules and project cost estimates.

90.4(2) Priority for loan assistance. A fundable project must be technically and administratively complete. A community is responsible for complying with the technical procedures for facility planning and preparation of plans and specifications, including department approval of those documents.

90.4(3) Notification of revisions. The department will notify, in writing, all communities that are removed from or placed on an approved fundable list based on revisions.

90.4(4) *Special considerations.* Exemptions to the point source rating criteria may be considered by the department, and funding variances may be granted by the commission for projects that have unique or unusual circumstances but that do not logically fit into the criteria. The commission may grant interest rate reductions or other favorable loan incentives to applicants that sponsor a project that improves the quality of the water in the watershed where a city water or wastewater facility is located.

90.4(5) *Additional contents.* The IUP will also include:

- a. The long- and short-term goals of the CWSRF;
- b. Information on the types of activities to be supported by the CWSRF. The IUP will identify requests for planning and design loans and funds to be directed to NPS programs;
- c. Assurances and specific proposals on how the state intends to meet the requirements of the operating agreement between the state of Iowa and the EPA;
- d. Loan interest rates and terms, interest rates and terms for linked deposit programs, and loan origination fees and servicing fees; and
- e. The method to be used by the department if the IUP is amended.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.5(455B) Point source project procedures.

90.5(1) *Application forms.* An applicant shall complete the application for placement on the IUP, provide documentation on the project, and submit the application package to the department. Forms may be downloaded from www.iowasrf.com.

90.5(2) *General requirements.* The following items must be included in a CWSRF application for point source projects:

- a. A facility plan that conforms to the IWFDS and is certified by a professional engineer licensed to practice in Iowa;
- b. A schedule for submission of plans and specifications for the project; and
- c. A project construction schedule.

90.5(3) *Timing.*

a. POTW project applications received by the department for eligible projects will be scored using the rating criteria in 567—90.7(455B) and will be placed on the PPL. Applications may be submitted on an ongoing basis and will be reviewed in accordance with the schedule in the IUP.

b. Applications received after the IUP is drafted will not be placed on the PPL but will be considered for loan assistance when the next IUP is prepared.

90.5(4) *Project initiation conference.* The department may require an applicant or their representative to meet with the department. If required, the eligible applicant's official representative (and usually the applicant's consultant) will meet with the department to discuss:

- a. CWSRF program policies, procedures, and guidelines;
- b. Allowable costs;
- c. Wastewater treatment alternatives and technologies;
- d. Environmental impacts and review considerations;
- e. Public participation;
- f. Scheduling; and
- g. Other information as needed.

90.5(5) *Review criteria for point source projects.* The department shall review CWSRF applications from eligible applicants and verify the following items:

- a. The project is on the PPL;
- b. The applicant has prepared an adequate facility plan report;
- c. The project will be in conformance with any applicable areawide water quality management plans;
- d. The applicant has adopted or will adopt an acceptable user charge system;
- e. The applicant has demonstrated its ability to provide the necessary legal, institutional, managerial and financial capability to ensure adequate construction, operation and maintenance. If the department has reasonable grounds to believe that an applicant's wastewater treatment facilities are not viable, the department may require the applicant to submit management and financial plans as prescribed in Iowa Code section 455B.174; and

f. The applicant has provided an acceptable project schedule for project initiation and completion.

90.5(6) Allowable and unallowable costs. Allowable costs shall be limited to those eligible costs deemed necessary, reasonable, and directly related to the efficient completion of the project. Unallowable costs include, but are not limited to, the following:

- a. Cost of service lines and in-house plumbing;
- b. Administrative costs of the recipient;
- c. Purchase of vehicles and tools;
- d. Land purchase and easement or rights-of-way costs, except as authorized under the CWA;
- e. Pretreatment program development costs, unless required by federal regulations; and
- f. Operation and maintenance costs.

90.5(7) Audit and inspection. The recipient shall provide access at all times for the department, the authority, the state auditor, and the EPA Office of the Inspector General to all project records and documents for inspection and audit purposes for a period of three years after the date of last loan payment. The same access to the project site(s) shall be provided for inspection purposes.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.6(455B) Point source project requirements. All wastewater treatment system projects receiving assistance from the CWSRF which entered into binding loan commitments on or after October 1, 1994, and did not initiate construction of the projects in whole or in part prior to October 1, 1994, shall meet the following requirements:

90.6(1) Planning. The planning phase of a project consists of those necessary plans and studies that directly relate to a facility's need to comply with enforceable requirements of the CWA and state statutes. This phase consists of a systematic evaluation of feasible alternatives considering the unique demographic, topographic, hydrologic, and institutional characteristics of the planning area. Facilities planning must support selection of the proposed alternative. The planning phase must include the following:

a. *Facility plan.* The facility plan must contain a description of the proposed project and the complete system of which it is a part. The facility plan must be prepared in accordance with Chapter 1 of the IWFDS and meet the applicable provisions of this subrule.

b. *Environmental review.* Loan recipients shall conduct environmental review of projects using procedures in 40 CFR Part 6, September 19, 2007, as a part of facility planning. An applicant should work with the department as early as possible in the facilities planning process to determine if the project qualifies for a categorical exclusion from 40 CFR Part 6 or whether a finding of no significant impact is required. In conjunction with the facility planning process as described in 40 CFR §35.2030(c), December 19, 2014, a potential applicant may request formal determination under 40 CFR Part 6. All of 40 CFR Part 6, September 19, 2007, pertaining to Procedures for Implementing the Requirements of the Council on Environmental Quality of the National Environmental Policy Act, is hereby adopted by reference and incorporated herein. However, all references to the EPA as performing acts or reviews shall be substituted with references to the department for the purposes of this chapter.

90.6(2) Point source project design and construction. The project design and construction phase must include all of the following:

a. *Recipient capability.* The recipient must demonstrate to the department that it has the legal, institutional, managerial, and financial capability to ensure adequate construction, operation and maintenance of treatment works.

b. *Disadvantaged business enterprise (DBE).* The recipient must comply with the requirements of DBE participation found in 40 CFR Part 33, May 19, 2022.

c. *Site.* When it is necessary to acquire real property as part of the project and within the project period, the recipient may be required to submit documentation of the acquisition, including the legal description, the date the property was acquired, and an appraisal report from a qualified appraiser. If required, submittal to the department shall occur prior to contract award.

d. *Project changes.* Prior to the final loan disbursement, the recipient must submit to the department for approval all modifications to the project, including changes to the plans and specifications and changes in the contract (change orders). The recipient is responsible for any costs or actions necessary should the changes be implemented prior to departmental review and subsequently found to be unapprovable.

e. State inspections. Department personnel shall have the right to examine all construction aspects of the project, including materials and equipment delivered and stored on site for use on the project.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.7(455B) Point source project priority rating system. The rating criteria consider the use and classification of the receiving waters, water quality of the receiving waters, groundwater protection, project category, project purpose, and a tiebreaker. Priority ranking for POTW projects shall be based on the total points awarded for all the categories; the greater the total number of points, the higher the ranking. For POTW projects, the ranking will be done when the IUP is prepared. The tiebreaker category will be used when necessary.

90.7(1) Use classification of receiving waters. This category addresses the receiving water that is impacted or potentially impacted by the existing situation and that would be improved or protected by the proposed project. Points for sludge stabilization, sewers, and lift station projects are based on the designated use of the waters that receive or could receive the effluent discharge. Points will be awarded and be cumulative for all designated use classifications of the receiving water.

Use and Classification of Receiving Waters	Points
Outstanding Iowa waters	45
Class A1	50
Class A2	45
Class A3	50
Class C	40
Class B (CW1)	50
Class B (CW2)	30
Class B (WW1)	30
Class HH	30
Class B (WW2)	25
Class B (WW3)	20
Class B (LW)	35

90.7(2) Water quality of receiving waters. This category addresses the water quality in the receiving stream and whether or not the water has been designated as impaired for one or more uses. Points will be awarded for both A and B in the table below and then totaled for this category.

a. Bodies of water that are impaired by pollutants and probable pollutant source categories for the impairments are identified in the CWA Section 303(d) list of waters in the integrated report of impaired waters status. Projects primarily impacting these waters will be awarded points if the water body that receives or could receive the wastewater discharge is included on the Section 303(d) list and the probable pollutant source is a point source.

b. Waters are also identified in the CWA Section 305(b) report on their use attainment status. Projects primarily impacting these waters are awarded points depending on the use impairment identified for the water body that receives or could receive the wastewater discharge. If no use impairment is identified, indicating the water was not assessed, the partially supported status points will be awarded.

Indication of Water Quality	Points
A. Integrated Report overall category (score only overall category)	
4a, 4b, or 5a	15
5b or 5p	10
4c or 4d	5
B. Use support level of designated uses (score all applicable uses) Class A, Class B, Class C, Class HH	

Indication of Water Quality	Points
Fully supported	5
Not supported	15
Not assessed	7

90.7(3) *Protection of groundwater resources.* This category considers the use of the aquifer affected by the project.

Groundwater Category	Points
Wellhead protection area for public water supply	40
Unconfined aquifer that serves as a drinking water source	20
Other groundwater protection	10

90.7(4) *Project category.* For this category, points are based on the project's type and its relative impact on public health and the environment. Points will be awarded for the primary project category.

Centralized Wastewater Treatment Project Category	Points
Category I. Secondary treatment	40
Category II. Advanced treatment	50
Category III–A. Infiltration/inflow correction	30
Category III–B. Sewer replacement/rehabilitation	30
Category IV–A. New collector sewers and appurtenances	10
Category IV–B. New interceptor sewers and appurtenances	20
Category V. CSO correction	40
Stormwater Project Category	
Category VI–A. Gray infrastructure—only projects where sanitary sewer or treatment require it	30
Conservation Project Category	
Category X. Water conservation (water reuse)	10
Other Category	
Energy conservation (renewable energy)—solar, wind, etc.	10
Refinance of existing projects that meet CWSRF eligibility criteria	5

90.7(5) *Project purpose.* For this category, points are based on the project's purpose and expected outcome. Points will be awarded only for the primary purpose.

Project Purpose	Points
Allows facility to meet new water quality standards	50
Protects or restores the physical, chemical, and biological integrity of water resources at a specific site	50
Reduces the loading of a parameter that has been identified as an impairment to the receiving water or watershed as identified through the total maximum daily load (TMDL) process	40
Provides regional consolidation in wastewater treatment or system management	30
Brings facility into compliance with a National Pollution Discharge Elimination System (NPDES) permit or other administrative or judicial enforcement action as may be required by the department or the EPA	25
Eliminates or remediates a source of groundwater pollution	20
Meets existing or reasonable future needs of the community in order to maintain compliance with an NPDES permit	15

Provides operational reliability improvements, apart from projects addressing compliance and enforcement	10

90.7(6) Total points. Total points are calculated using the following formula: Total Points = Use Classification + Water Quality or Groundwater Protection + Project Category + Project Purpose

90.7(7) Tiebreaker. Several projects may receive the same total points on the fundable list. If sufficient loan funds are not available to fund the projects, ties will be broken by determining which project has the highest score in each category in the following order:

Use Classification of Receiving Streams	Highest
Water Quality of Receiving Streams (a+b)	
Groundwater Protection	
Project Category	
Project Purpose	Lowest



[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.8 and 90.9 Reserved.

567—90.10(455B) NPS project procedures—onsite wastewater system assistance linked-deposit program (OSWAP). The purpose of the OSWAP is to assist homeowners to rehabilitate or improve existing PSDSs.

90.10(1) Eligibility conditions and restrictions. Assistance under the OSWAP shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF.

a. Location restrictions. Assistance is available for the improvement or rehabilitation of PSDSs serving homes that are not connected to a POTW.

b. County eligibility. Assistance shall be provided only for systems located in counties that have an environmental health program that meets the requirements of 567—Chapter 69 for PSDSs. At a minimum, counties shall carry out statutory responsibilities as provided in Iowa Code section 455B.172 and provide for:

(1) Site evaluations to determine the appropriate design and size of PSDSs prior to permitting and installation.

(2) Inspection of PSDSs at the time of renovation or construction.

(3) Assurance of regular system maintenance and monitoring for the life of the loan.

c. Eligible project costs. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the repair, rehabilitation, or replacement of a PSDS.

d. Applicant eligibility. Assistance is limited to applicants who meet the applicable provisions of 567—Chapter 69 and all other local provisions for the siting and construction of PSDSs.

e. Eligible projects. Assistance can be provided only for the repair, rehabilitation, or replacement of existing PSDSs. Assistance is not available for new housing.

90.10(2) Applying for assistance.

a. Prior to applying for a loan from a participating lending institution, an eligible individual or entity must demonstrate appropriate permitting from the county in which the PSDS is located.

b. Application for assistance shall be made on forms provided by the department or its agent. Forms may be downloaded from www.iowasrf.com.

c. Applications for assistance shall include:

(1) A description of the type and general specifications of the proposed work;

(2) An estimate of the population and number of households to be served; and

(3) A description of the system maintenance and monitoring program.

90.10(3) County review and approval.

a. The county shall review applications to determine if a project meets the applicable provisions of 567—Chapter 69 and all other relevant local provisions for the siting and construction of PSDSs.

b. For projects that meet relevant criteria, the county shall issue a permit or certificate. The county permit or certificate shall be accompanied by a cost estimate.

c. A county may deny an application for noncompliance with applicable state and local criteria. Written notification of the denial shall be provided to the applicant and shall state the reason(s) for denial.

90.10(4) *Eligible costs.* All costs directly related to the design, permitting, construction, and financing of a PSDS are eligible for loans. Eligible costs include the removal of existing structures, earth moving, or any land purchases directly related to proper wastewater treatment.

90.10(5) *Ineligible costs.* Costs for additional earthwork, replanting, or any other aesthetic improvements are not eligible. Maintenance or monitoring costs will not be allowed as part of a loan.

90.10(6) *Recipient recordkeeping.* The loan recipient shall:

a. Maintain adequate records that document all costs associated with the project;

b. Provide access to these records to the department, the state auditor, the EPA SRF project manager, and the EPA Office of the Inspector General; and

c. Retain all project records and documents for inspection and audit purposes for a period of three years from the date of the final loan payment.

90.10(7) *Site access.* The loan recipient shall:

a. Provide the department and the administrative authority access to the construction site to verify that the loan was used for the purpose intended and that the constructed works meet applicable state and local environmental requirements and ordinances for PSDSs; and

b. Provide access to the system for periodic monitoring by the department and administrative authority, at times mutually agreed upon with the system owner, for the duration of the loan.

90.10(8) *Priority allocation of funds and IUP.* The department shall, in the annual IUP, describe the amount of funding available for loans under the OSWAP for the coming state fiscal year.

90.10(9) *Targeted assistance.* The department may budget a portion of the annual available funds identified in the IUP for financing PSDSs in targeted areas. Such targeted areas may include impaired watersheds, high-density housing areas, agricultural drainage areas, or other environmentally sensitive or degraded areas where the repair and rehabilitation of PSDSs are needed to preserve and protect water quality. The annual IUP shall specify the need for targeted assistance, the areas covered, and the estimate of funds needed to address the water quality problems.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.11(455B) NPS project procedures—livestock water quality linked-deposit program (LWQP).

The purpose of the LWQP is to assist owners of existing AFOs to meet state and federal requirements or to prevent, minimize, or eliminate water pollution.

90.11(1) *Eligibility conditions and restrictions.* Assistance shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF.

a. *Eligible project costs.* All costs directly related to the design, permitting, construction, and financing of the WPC facilities are eligible. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the facilities required to provide WPC as required by the department or to prevent, minimize, or eliminate water pollution.

b. *Applicant eligibility.* Assistance is limited to livestock producers operating AFOs according to federal law. Concentrated AFOs, as defined in 40 CFR §122.23, are not eligible.

(1) Loans will be made only to livestock producers that are operators of record or have legal control of the property containing the AFO for the duration of the loan.

(2) The department has the discretion to deny applications for producers if:

1. The department has issued an administrative order to the producer pursuant to Iowa Code section 455B.175;

2. The department notifies the producer in writing of intent to recommend referral or the commission refers the action to the attorney general pursuant to Iowa Code section 455B.175; or

3. The attorney general has commenced legal proceedings against the producer pursuant to Iowa Code section 455B.112.

c. *Eligible projects.* The WPC facilities considered eligible for assistance include manure storage structures, solids settling basins, composting facilities and equipment, lagoons (including fencing), portions

of feeding floors or loafing areas used for waste collection, water and sediment control basins, vegetative filters or buffers, surface water diversion structures, agitation or transfer pumps, dry bedded confinement feeding operation buildings or structures pursuant to Iowa Code chapter 459B when all or part of an open feedlot is replaced, and other practices shown to improve or protect water quality. Replacement AFOs may be eligible where an existing AFO is eliminated to prevent a water quality impairment or mitigate a documented impairment. Engineering or technical service fees associated with the aforementioned practices are also eligible. A one-time purchase of attachments integral to the manure management system, such as blades, buckets, choppers, or spreaders, may be eligible at the time that an open feedlot is replaced with a dry bedded confinement building.

d. Funding formula.

(1) Loans for water quality projects for facilities being expanded by an increase in the animal unit capacity shall be funded according to the following formula:

Existing animal unit capacity/new animal unit capacity $\times$ total eligible project cost $\times$ 1.5 = maximum linked deposit amount

Example: 450 AUC / 900 AUC $\times$ \$500,000 $\times$ 1.5 = \$375,000

Example: 300 AUC / 600 AUC $\times$ \$300,000 $\times$ 1.5 = \$225,000

Example: 50 AUC / 900 AUC $\times$ \$500,000 $\times$ 1.5 = \$41,666

(2) If existing areas in open feedlots are kept open where some pens are replaced and the operation is expanded through the addition of a dry bedded confinement feeding operation building, the remaining open lot areas must comply with 567—65.101(459A).

90.11(2) Applying for assistance. Application for project approval shall be made on forms provided by the department or its agent. Forms may be downloaded from www.iowasrf.com.

90.11(3) Project review and approval.

a. Applications shall be submitted to the local SWCD. The local SWCD will evaluate the application, provide an estimated cost, and certify that the practice is eligible and compatible with state water quality goals.

b. All practices must comply with 567—Chapter 65 and shall be constructed to applicable USDA NRCS standards. NRCS staff or another technical service provider shall attest that the practice will be constructed to these specifications and standards.

90.11(4) Project duration. The project is to be maintained, kept in place, or operated as proposed for the life of the loan. If an open lot is closed and replaced with an eligible replacement facility, the department or its agent shall place a restrictive covenant that prohibits the operation of an open feedlot at the replacement site for the life of the loan. The site or portion of the site that may not house animals shall be defined by the local SWCD.

90.11(5) Manure management plan (MMP) required. The livestock producer shall have an MMP that meets the requirements of 567—65.17(459), a nutrient management plan (NMP) as defined in 567—65.112(459A), or a comprehensive NMP (CNMP), to be eligible for the loan or, as part of the loan, develop an MMP, NMP, or CNMP.

a. Costs for development of an MMP, NMP, or CNMP are eligible costs.

b. Costs for updating an MMP, NMP, or CNMP are eligible costs if required for the implementation of a water quality project financed through the LWQP.

90.11(6) Ineligible costs. Costs for development of a new AFO are ineligible. Other ineligible costs include but are not limited to the following:

a. Costs for the design, permitting, construction, or financing of WPC facilities that would allow an AFO to expand and become a concentrated AFO;

b. Costs for the purchase of land to be used for application of wastewater or manure;

c. Operation and maintenance costs; and

d. Refinancing costs for WPC facilities constructed prior to approval by the department or its agent.

90.11(7) Recipient recordkeeping. The loan recipient shall:

a. Maintain adequate records that document all costs associated with the project;

b. Provide access to these records to the department, the state auditor, the EPA SRF project manager, and the EPA Office of the Inspector General; and

c. Retain all project records and documents for inspection and audit purposes for a period of three years from the date of the final loan payment.

90.11(8) Site access. The livestock producer shall:

a. Provide the department and its agent access to the construction site to verify that the loan was used for the purpose intended and that the construction work meets the applicable state and federal requirements for AFOs; and

b. Provide the department and its agent periodic access to the AFO, pursuant to the biosecurity requirements in 567—paragraph 65.113(9) “b,” for the duration of the loan to ensure that the constructed facility is being operated and maintained as designed.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.12(455B) NPS project procedures—local water protection project linked-deposit program (LWPP). The purpose of the LWPP is to assist landowners with local water protection projects that will provide water quality improvement or protection.

90.12(1) Eligibility conditions and restrictions. Assistance under the CWSRF shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF.

a. *Eligible project costs.* The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the practices required to provide water quality improvements.

b. *Applicant eligibility.* Assistance is available to any person who is an owner of record or has legal control over land that needs local water protection projects installed to control runoff of sediments, nutrients, pesticides or other NPS pollutants into waters of the state.

c. *Eligible practices.* The LWPP projects that are considered eligible include, but are not limited to, contour buffer strips, diversion, fence, field border, field windbreak, filter strips, grade stabilization structure, grassed waterway, pasture and hayland planting, planned grazing system, pond, riparian forest and vegetative buffers, sediment basin, terrace, underground outlet with secondary water quality treatment, waste management system, water and sediment control basin, stream bank stabilization and restoration, and other practices that are shown to improve or protect water quality.

90.12(2) Applying for assistance. Application for project approval shall be made on forms provided by the department or its agent. Forms may be downloaded from www.iowasrf.com.

90.12(3) Project review and approval.

a. Applications shall be submitted to the local SWCD. The local SWCD shall evaluate the application, provide an estimated cost, and certify that the practice is compatible with state water quality goals.

b. All practices shall be constructed to meet NRCS standards and specifications. The NRCS or another technical service provider shall attest that the practice will be constructed to these specifications and standards.

90.12(4) Project duration. The project is to be maintained, kept in place, or operated as proposed for the life span of the practice, but in no case for less than the life of the loan.

90.12(5) Eligible costs. All costs directly related to and necessary for the implementation of LWPPs approved in the memorandum of project approval are eligible costs.

90.12(6) Ineligible costs. Ineligible costs include costs for overbuilding a practice beyond what is required to maintain or improve water quality and costs for the purchase of land.

90.12(7) Site access. The applicant shall provide the department or its agent access to the project site to verify that the loan was used for the purpose intended.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.13(455B) NPS project procedures—stormwater linked-deposit program. The purpose of this program is to assist private landowners with the construction of stormwater BMPs that will provide water quality improvement or protection.

90.13(1) Eligibility conditions and restrictions. Assistance under the CWSRF shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF.

a. Eligible project costs. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the practices required to provide water quality improvements.

b. Applicant eligibility. Assistance is available to any person who is an owner of record or has legal control over land that needs stormwater BMPs installed to control runoff of sediments, nutrients, pesticides, or other NPS pollutants.

c. Eligible practices. Eligible practices include but are not limited to grade stabilization structure, grassed waterway, stormwater wetland, native landscaping, soil quality restoration, riparian forest and vegetative buffers, sediment basin, underground outlet with water quality treatment, stream bank stabilization, bioretention cell, greenroof, and other practices that are shown to improve or protect water quality.

90.13(2) Applying for assistance. Application for project approval shall be made on forms provided by the department or its agent. Forms may be downloaded from www.iowasrf.com.

90.13(3) Project review and approval.

a. Applications shall be submitted to the local SWCD. The local SWCD will evaluate the application, provide an estimated cost, and certify that the practice is compatible with state water quality goals.

b. It is recommended that all practices be constructed to meet Iowa Stormwater Management Manual or NRCS standards and specifications as posted on the department's website at www.iowadnr.gov and the NRCS website at www.nrcs.usda.gov, respectively, as of September 1, 2024. The NRCS or another technical service provider shall attest that the practice is designed to these specifications and standards, or shall attest that the practice is based on these standards and designed with sound engineering principles.

90.13(4) Project duration. The project is to be maintained, kept in place or operated as proposed for the life span of the practice, but in no case for less than the life of the loan.

90.13(5) Eligible costs. All costs directly related to and necessary for the implementation of the stormwater BMP approved in the memorandum of project approval are eligible costs.

90.13(6) Ineligible costs. Ineligible costs include costs for overbuilding a practice beyond what is required to maintain or improve water quality and costs for the purchase of land.

90.13(7) Site access. The applicant shall provide the department or its agent access to the project site to verify that the loan was used for the purpose intended.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

567—90.14(455B) NPS project procedures—GNS loan program. The purpose of this program is to assist projects that will provide water quality improvements or water quality protection. This program allows for funding of the water quality protection portion of nontraditional projects.

90.14(1) Project ranking. Projects and activities under NPS project categories VI-B through D, VII-A through K, and XII will all receive a total score of five when placed on the PPL. Once 90 percent of NPS program funds have been allocated, additional NPS project scoring criteria published in the IUP will be used to rank NPS projects for funding and placement on the PPL. Until that time, the loan assistance is based on a first-come, first-funded concept.

90.14(2) Eligibility conditions and restrictions. Assistance under the CWSRF GNS program shall be in the form of low-interest loans made directly or by participating lending institutions through a participation arrangement with the CWSRF.

a. Eligible project costs. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the facilities or practices required to provide water quality improvements, restoration, or protection. Participation in nontraditional projects where the primary purpose is not water quality protection or improvement will be limited to the portion of the project that is directly related to water quality improvement, restoration, or protection.

b. Applicant eligibility. Assistance is available to projects for which facilities are needed to protect, restore, or improve water quality from NPS pollution. Only applicants that are owners of record of the property or have long-term control of the property where the project is to be implemented are eligible. In applications where the WPC project is a plan or document that will direct water quality protection or improvement efforts, loans will be made to applicants that have the capacity and capability of implementing the plan and repaying the loan.

c. *Eligible projects.* Eligible projects include, but are not limited to, practices to address NPS pollution control needs associated with stormwater treatment and green infrastructure, silviculture, groundwater protection, marinas, resource extraction, brownfield remediation, aboveground and underground storage tanks, sanitary landfills, hydromodification, and watershed planning. Nontraditional NPS projects that may have a water quality protection or improvement component include, but are not limited to, bird sanctuaries and wildlife enhancement projects, vegetative plants, sediment removal and other lake restoration practices, and education programs.

90.14(3) *Applying for assistance.* Applications for GNS project approval shall be made on forms provided by the department. Forms may be downloaded from www.iowasrf.com. Applications shall include an explanation of how the water quality will be protected, improved, or restored by the proposed project. Applications may be submitted on an ongoing basis and will be reviewed in accordance with the schedule in the IUP.

90.14(4) *Project review and approval.* The department will evaluate eligibility and project design and provide the applicant a memorandum of approval for the proposed WPC project.

90.14(5) *Eligible costs.* All costs directly related to the implementation of the project approved in the memorandum of approval are eligible costs.

90.14(6) *Ineligible costs.* Costs for livestock water quality facilities are not eligible under this program and are provided for in 567—90.11(455B). Costs for the purchase of land are not eligible costs unless specifically approved by the commission.

90.14(7) *Site access.* The recipient shall provide the department and its agent access to the project site to verify that the loan was used for the purpose intended.

[ARC 9215C, IAB 5/14/25, effective 6/18/25]

These rules are intended to implement Iowa Code sections 455B.199, 455B.291 through 455B.299, 466.8 and 466.9.

[Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]

[Filed emergency 11/14/86—published 12/3/86, effective 12/3/86]

[Filed 9/25/03, Notice 7/9/03—published 10/15/03, effective 11/19/03]

[Filed 2/24/06, Notice 12/21/05—published 3/15/06, effective 4/19/06]

[Filed ARC 8596B (Notice ARC 8312B, IAB 11/18/09), IAB 3/10/10, effective 4/14/10]

[Filed ARC 9215C (Notice ARC 8637C, IAB 1/8/25), IAB 5/14/25, effective 6/18/25]

CHAPTER 91
CRITERIA FOR RATING AND RANKING PROJECTS
FOR THE WATER POLLUTION CONTROL STATE REVOLVING FUND

[Prior to 7/1/83, DEQ 19.2(12)]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded **ARC 9215C**, IAB 5/14/25, effective 6/18/25

CHAPTER 92
CLEAN WATER STATE REVOLVING FUND
Rescinded **ARC 9215C**, IAB 5/14/25, effective 6/18/25

CHAPTER 93
NONPOINT SOURCE POLLUTION CONTROL SET-ASIDE PROGRAMS
Rescinded **ARC 9215C**, IAB 5/14/25, effective 6/18/25

CHAPTERS 94 to 99
Reserved

TITLE VIII
SOLID WASTE MANAGEMENT
AND DISPOSAL

CHAPTER 100

SCOPE OF TITLE—DEFINITIONS—RULES OF PRACTICE

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—100.1(455B,455D) Scope of title. The department has jurisdiction over the management, dumping, depositing, and disposal of solid waste by establishing standards for sanitary disposal projects and by regulating solid waste through a system of general rules and specific permits. The construction and operation of any sanitary disposal project requires a specific permit from the department.

This chapter provides general definitions applicable to Title VIII (solid waste management and disposal) of the commission's rules and general conditions of solid waste disposal.

This rule is intended to implement Iowa Code section 455B.304 and chapter 455D.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—100.2(455B,455D) Definitions. For the purpose of this title, the following terms shall have the meaning indicated in this chapter. The definitions set out in Iowa Code section 455B.301 shall be considered to be incorporated verbatim in these rules.

“Airport” means public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.

“Annular space” means the open space formed between the borehole and the well casing.

“Aquifer” means a saturated geologic formation or combination of formations which has appreciably greater ability to transmit water than do adjacent formations. Typically, an aquifer is capable of yielding usable quantities of water to a well.

“Areas susceptible to mass movement” means those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the MSWLF site, because of natural or man-induced events, results in the down slope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil function, block sliding, and rockfall.

“Attendant” means an employee of a sanitary disposal project who is not employed or assigned to operate the equipment used on the site.

“Bird hazard” means an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

“Cathode ray tube” or *“CRT”* means a vacuum tube composed primarily of leaded glass which is the visual or video display component of an electronic device. An intact CRT means a CRT whose vacuum has not been released. A broken CRT means glass removed from its housing or casing whose vacuum has been released.

“CFR” means Code of Federal Regulations.

“Commission” means the environmental protection commission.

“Compost” means organic material resulting from biological decomposition of waste which can be used as a soil conditioner or soil amendment.

“Composting” means the controlled, biological decomposition of selected solid organic waste materials under aerobic conditions resulting in an innocuous final product.

“Comprehensive plan” means a course of action developed and established cooperatively between cities, counties and municipal solid waste sanitary disposal projects regarding their chosen integrated solid waste management system, its participants, waste reduction strategies, and disposal methods.

“Comprehensive plan amendment” means a notification, filed between comprehensive plan updates, that the planning agency seeks to change the participation or change the designated disposal project(s) as set out in the most recent approved comprehensive plan submittal.

“Comprehensive plan update” means a planning document that provides status reports on the integrated solid waste management system and that describes revision to the information and evaluation of the integrated solid waste management system and the proposed course of action for the next planning cycle.

“Confined aquifer” means an aquifer with a confining bed above and below. Water in a confined aquifer is under pressure such that water rises above the top of the aquifer in a well which penetrates the aquifer.

“Confining bed” means a geologic formation exhibiting relatively low ability to transmit water compared to adjacent formations. Confining beds are typically not capable of yielding usable quantities of water to a well.

“Construction and demolition waste” means waste building materials including wood, metals and rubble which result from construction or demolition of structures. Such waste shall also include trees.

“Construction and demolition waste disposal site” means a sanitary landfill which accepts only construction and demolition wastes.

“Consumer price index” means the measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. For the purpose of this title, consumer price index refers to All Urban Consumers (CPI-U), All Items, as published by the U.S. Bureau of Labor Statistics.

“Contaminated animal carcasses” means waste including carcasses, body parts and bedding of animals that were exposed to infectious agents during research, production of biologicals, or testing of pharmaceuticals.

“Contaminated sharps” means all discarded sharp items derived from patient care in medical, research, or industrial facilities including glass vials containing materials defined as infectious, suture needles, hypodermic needles, scalpel blades, and Pasteur pipettes.

“Contaminated soil” means soil that contains any harmful constituent in a concentration that may harm human health.

“CRT collection” means any activity by a CRT recycling facility or CRT collection facility involving the collection of discarded CRTs that is not a short-term CRT collection event.

“CRT collection facility” means a property where ongoing CRT collection is the only CRT recycling activity performed.

“CRT glass” means any glass generated from CRTs.

“CRT recycling” means any process by which discarded CRTs that would otherwise become waste are collected, processed and returned to use in the form of raw materials or products. CRT recycling includes but is not limited to receiving broken or intact CRTs, intentionally breaking intact CRTs or further breaking or separating broken CRTs, and sorting or otherwise managing glass removed from CRT monitors.

“CRT recycling facility” means a property where CRT recycling takes place. A CRT recycling facility may also collect CRTs.

“Cultures and stocks of infectious agents” means specimen cultures collected from medical and pathological laboratories, cultures and stocks of infectious agents from research and industrial laboratories, wastes from the production of biological agents, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate or mix cultures.

“Department” means the Iowa department of natural resources.

“Discarded” means no longer to be used for the original intended purpose and means the letting go or throwing away of materials that have become useless or superfluous though often not intrinsically valueless. CRTs that are returned to the original owner are not “discarded.”

“Displacement” means the relative movement of any two sides of a fault measured in any direction.

“Downgradient” means direction of decreasing hydraulic head.

“Downgradient well” means a well which has been installed downgradient of the site and is capable of detecting the migration of contaminants from the site.

“FAA certified airport” means an airport serving air carriers certified by the Civil Aeronautics Board that has been issued an airport operating certificate from the Administrator of the Federal Aviation Administration pursuant to Section 612 of the Federal Aviation Act, 49 U.S.C. §1432, and 49 CFR Part

139. (NOTE: This definition includes the municipal airports in or near Iowa as follows: Moline, Illinois; Omaha, Nebraska; and Burlington, Cedar Rapids, Des Moines, Dubuque, Fort Dodge, Mason City, Ottumwa, Sioux City, and Waterloo, Iowa.)

"Fault" means a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.

"Firewood processing facilities" means facilities which process or allow the public to process trees into firewood.

"Fiscal year" means the state fiscal year from July 1 through June 30.

"Flood plain" means the area adjoining a river or stream which has been or may be hereafter covered by flood water.

"Free liquid" means the liquid produced when a 100-milliliter or 100-gram representative sample is placed on a standard mesh number 60 (fine mesh size) conical paint filter for five minutes. Method 9095 EPA SW 846.

"Garbage" means all solid and semisolid, putrescible animal and vegetable wastes resulting from the handling, preparing, cooking, storing, serving and consuming of food or of material intended for use as food, and all offal, excluding useful industrial byproducts, and shall include all such substances from all public and private establishments and from all residences.

"Geologic cross section" means a drawing of a subsurface profile showing the various strata encountered based on at least three soil borings.

"Groundwater flow path" means the route of water (and contaminant) travel within the groundwater system.

"High water table" is the position of the water table which occurs in the spring in years of normal or above normal precipitation.

"Holocene" means the most recent epoch of the Quaternary Period, extending from the end of the Pleistocene Epoch to the present.

"Human blood and blood products" means human serum, plasma, other blood components, bulk blood, or containerized blood in quantities greater than 20 milliliters.

"Hydraulic head" means the energy contained at a point in the groundwater system. Hydraulic head is measured as the elevation to which water rises in a piezometer.

"Incineration" means the processing and burning of waste for the purpose of volume and weight reduction in facilities designed for such use.

"Incorporation" means to mix into the soil by tilling, disking, or other suitable means, thereby creating a loose and divided soil texture.

"Industrial process wastes" means waste that is generated as a result of manufacturing activities, product processing or commercial activities. It does not include office waste, cafeteria waste, or other types that are not the direct result of production processes.

"Infectious" means containing pathogens with sufficient virulence and quantity so that exposure to an infectious agent by a susceptible host could result in an infectious disease when the infectious agent is improperly treated, stored, transplanted, or disposed of.

"Infectious waste" means waste which is infectious, including but not limited to contaminated sharps, cultures and stocks of infectious agents, blood and blood products, pathological waste, and contaminated animal carcasses from hospitals or research laboratories.

"Initial comprehensive plan" means a first or new comprehensive plan filed with the department pursuant to the provisions of Iowa Code section 455B.306.

"Integrated solid waste management" means any solid waste management system which is focused on planned development of programs and facilities that reduce waste volume and toxicity, recycle marketable materials and provide for safe disposal of any residuals.

"Karst terranes" means areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terranes include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys.

“Land application” means a method through which sludge is applied to the ground surface. Land application may include subsurface injection.

“Landfarm” means the area of land used to landfarm a single application of a particular source and type of PCS. Landfarms are created when a permitted landfarm applicator, or party under the applicator’s supervision, applies PCS to the land. No other PCS may be applied within 15 feet of the area of land used as a landfarm until the landfarm is closed pursuant to rule 567—120.12(455B).

“Landfarm applicator” means an entity permitted by the department to apply PCS to the land to create one or more landfarms.

“Landfarming” means a surface-level soil remediation technology for petroleum contaminated soils that reduces concentrations of petroleum constituents through biodegradation to a level safe for human health and the environment. This technology usually involves spreading excavated contaminated soils in a thin layer on the ground surface and stimulating aerobic microbial activity within the soils through aeration. The enhanced microbial activity results in degradation of adsorbed petroleum product constituents through microbial respiration. Some petroleum product constituents volatilize during the landfarming process.

“Landfarm plot” means the specific operating area of a landfarm upon which a particular source and type of PCS is applied.

“Landfarm season” means the period of the year when the ground is not frozen or snow-covered and runoff from these situations is not expected to transport PCS beyond the landfarm area.

“Landfill property” means the entire area of the landfill including the disposal site and any other contiguous property proposed for actual landfill use.

“Land pollution” means the presence in or on the land of any solid waste in such quantity, of such nature and for such duration and under such condition as would affect injuriously any waters of the state, cause air pollution or create a nuisance.

“Lithified earth material” means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth surface.

“Local governments” means those counties or municipalities using the sanitary disposal project.

“Lower explosive limit” means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25° Celsius and atmospheric pressure.

“Maximum horizontal acceleration in lithified earth material” means the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 90 percent or greater probability that the acceleration will not be exceeded in 250 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

“Mean” is the sum of all the measurements divided by the number of measurements.

“Monitoring well” means any well installed solely for the sampling of groundwater quality at a given location and depth and constructed in a manner approved by the department.

“Municipal solid waste landfill (MSWLF)” means a discrete area of land or an excavation that receives household waste, and that is not a land application site, surface impoundment, injection well, or waste pile, as those terms are defined under 40 Code of Federal Regulations Part 257.2. An MSWLF also may receive other types of RCRA subtitle D wastes, such as commercial solid waste, nonhazardous dry sludge, and industrial solid waste. An MSWLF may be publicly or privately owned. An MSWLF may be a new MSWLF site, an existing MSWLF site, or a lateral expansion.

“Municipal solid waste sanitary disposal project” means all facilities and appurtenances, including all real and personal property connected with such facilities, which are acquired, purchased, constructed, reconstructed, equipped, improved, extended, maintained, or operated to facilitate the final disposition of household waste without creating a significant hazard to the public health or safety. A municipal solid waste sanitary disposal project also may receive other types of Resource Conservation and Recovery Act (RCRA) Subtitle D wastes, such as construction and demolition debris and commercial and industrial solid waste.

“Nonstandard PCS” means soil contaminated with a petroleum product other than gasoline, diesel fuel, kerosene, jet fuel, motor oil, hydraulic fluid, or some combination thereof.

“Open burning” means any burning of combustible materials where the products of combustion are emitted into the open air without passing through a chimney or stack.

“Open dump” means any exposed accumulation of solid waste at a site other than a sanitary disposal project operating under a permit from the department.

“Open dumping” means the depositing of solid wastes on the surface of the ground or into a body or stream of water.

“Operating area” means the immediate portion of a sanitary disposal project used for unloading and handling of solid waste to prepare it for processing or final disposal.

“Operator” means an employee of the sanitary disposal project who is employed and assigned to operate the equipment used on the site.

“Pathological waste” means human tissues and body parts that are removed during surgery or autopsy.

“Perched saturated zone” is a localized saturated zone occurring above the regional zone of saturation. The perched saturated zone’s presence is caused by a lens of relatively impermeable material within the unsaturated zone that impedes the downward movement of water toward the zone of saturation.

“Petroleum contaminated soil” or *“PCS”* means soil contaminated with petroleum products including, but not limited to, gasoline, diesel fuel, kerosene, jet fuel, motor oil, hydraulic fluid, or some combination thereof.

“Piezometers” are devices used to measure hydraulic head at a specific point in the groundwater system. Piezometers are generally small diameter wells sealed along the entire length and open to water only at the bottom through a short section of well screen, which is the point where hydraulic head is measured. A piezometer may be constructed similar to a monitoring well or may be a driven well point.

“Plan participants” means any individual, group, government or private entity that has direct involvement in an integrated solid waste management system.

“Planning agency” means the designated contact agency on file with the department.

“Planning area” means the combined jurisdiction of the local governments and the designated municipal solid waste sanitary disposal project(s) involved in a comprehensive plan. A planning area may include one or more municipal solid waste sanitary disposal projects.

“Planning cycle” means the length of time between the due date for each comprehensive plan update submittal as approved by the department, which shall be five years effective March 1, 2011.

“Pollution control waste” means any solid waste residue extracted by, or resulting from, the operation of pollution control equipment.

“Poor foundation conditions” means those areas where features exist which indicate that a natural or man-induced event may result in inadequate foundation support for the structural components of an MSWLF site.

“Potentiometric surface” is the imaginary surface that represents the level to which water from an aquifer (confined or unconfined) will rise in wells.

“Processing facility” means the site and equipment for the preliminary and incomplete disposal of solid waste, including but not limited to transfer, open burning, incomplete land disposal, incineration, composting, reduction, shredding and compression.

“Public agency” is defined in Iowa Code section 28E.2.

“Public water supply system” means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Such term includes: (1) any collection, treatment, storage, and distribution facilities under control of the supplier of water and used primarily in connection with such system, and (2) any collection (including wells) or pretreatment storage facilities not under such control which are used primarily in connection with such supply system. A public water supply system is either a “community water system” or a “noncommunity water system.”

a. *“Community water system”* means a public water supply system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

b. *“Noncommunity water system”* means a public water supply system that is not a community water system.

“Recycling” means any process by which waste or materials which otherwise become waste are collected, separated, or processed and reused or returned to use in the form of raw materials or products. Recycling includes, but is not limited to, the composting of yard waste which has been previously separated from other waste and collected by the sanitary facility, but does not include any form of energy recovery.

“Refuse” means putrescible and nonputrescible wastes including but not limited to garbage, rubbish, ashes, incinerator ash, incinerator residues, street cleanings, market and industrial solid wastes and sewage treatment wastes in dry or semisolid form.

“Refuse collection service” means a publicly or privately operated agency, business or service engaged in the collecting and transporting of solid waste for disposal purposes.

“Rubbish” means nonputrescible solid waste consisting of combustible and noncombustible wastes, such as ashes, paper, cardboard, tin cans, yard clippings, wood, glass, bedding, crockery or litter of any kind.

“Salvageable material” means discarded material no longer of value for its original purpose but which has value if reclaimed.

“Salvaging” means the systematic removal of salvageable material in a formal and orderly manner as a part of the normal operating procedure of a sanitary disposal project.

“Sanitary disposal” means a method of treating solid waste so that it does not produce a hazard to the public health or safety or create a nuisance.

“Sanitary disposal project” is defined in Iowa Code section 455B.301.

“Sanitary landfill operator” means an individual having active, daily, on-site responsibility for day-to-day operation of a department-permitted sanitary landfill. This individual must also have the authority to turn waste away at the gate when the waste is considered unacceptable.

“Scavenging” means the uncontrolled removal of materials from the unloading or working area of a sanitary disposal project.

“Seismic impact zone” means an area with a 10 percent or greater probability that the maximum horizontal acceleration in the lithified earth material, expressed as a percentage of the earth’s gravitational pull, will exceed 0.10g in 250 years.

“Service area” means an area served by a specific municipal solid waste sanitary disposal project defined in terms of the jurisdictions of the local governments using the facility. A planning area may include more than one service area. This definition does not apply to 567—Chapter 111.

“Sewage sludge” is defined in 567—Chapter 67.

“Shelby tube” is a thin-walled, seamless steel tube with a sharp cutting edge which is used to obtain undisturbed samples of cohesive or moderately cohesive soils (silts and clays).

“Shoreland” means land within 300 feet of the high water mark of any natural or artificial, publicly or privately owned lake or any impoundment of water used as a source of public water supply.

“Short-term CRT collection event” means any temporary activity involving the collection of discarded CRTs for recycling that is not on the premises of a CRT recycling facility or CRT collection facility.

“Site” means any location, place or tract of land used for collection, storage, conversion, utilization, incineration or landfilling of solid waste, to include the landfill area, nonfill work areas, borrow areas plus a 100-foot wide perimeter surrounding the working areas or the property line if it is closer than 100 feet to the working areas.

“Sludge” means any solid, semisolid, or liquid waste generated from a commercial or industrial wastewater treatment plant, water supply treatment plant or air pollution control facility or any other such waste having similar characteristics and effects.

“Soil boring” means a hole drilled or driven into the subsurface for the purpose of determining subsurface characteristics.

“Solid waste” has the same meaning as found in Iowa Code section 455B.301. Pursuant to Iowa Code section 455B.301(29) “b,” the commission has determined that solid waste includes those wastes exempted from federal hazardous waste regulation pursuant to 40 CFR 261.4(b) as amended through November 16, 2016, except to the extent that any such exempted substances are liquid wastes or wastewater. This definition applies to all chapters within Title VIII. To the extent that there is a conflict, this definition controls.

“Solid waste collection” means the gathering of solid waste from public and private places.

“Solid waste incinerator operator” means an individual with active, daily, on-site responsibility for day-to-day operation of a department-permitted solid waste incinerator. This individual must also have the authority to turn waste away when it has been determined to be unacceptable.

“Solid waste storage” means the holding of solid waste pending intermediate or final disposal.

“Solid waste transportation” means the conveying of solid waste from one place to another by means of vehicle, rail car, water vessel, conveyor or other means.

“Source of PCS” means the contaminated area from which the PCS originated. Examples of a source include, but are not limited to, a specific gas station or spill location.

“Special wastes” means any industrial process waste, pollution control waste, or toxic waste which presents a threat to human health or the environment or a waste with inherent properties which make the disposal of the waste in a sanitary landfill difficult to manage. Special waste does not include domestic, office, commercial, medical, or industrial waste that does not require special handling or limitations on its disposal. Special waste does not include hazardous wastes which are regulated under the federal Resource Conservation and Recovery Act (RCRA), hazardous waste as defined in Iowa Code section 455B.411, subsection 3, or hazardous wastes included in the list compiled in accordance with Iowa Code section 455B.464.

“Specific yield” is the ratio of the volume of water that a given mass of saturated rock or soil will yield by gravity to the volume of that mass. This ratio is stated as a percentage.

“Split spoon sampler” means a device used in conjunction with a drilling rig to obtain core samples from unconsolidated strata.

“Stabilized sludge” means sludge that has been processed to a point where it has the ability to resist further change, produces minimal odor, and has achieved a substantial reduction in the pathogenic organism content. (The department recognizes principles of stabilization other than the conventional biological processes. Whether these processes produce a stabilized sludge will be evaluated on an individual basis.)

“Standard deviation” means the square root of the variance.

“Standard PCS” means soil contaminated with gasoline, diesel fuel, kerosene, jet fuel, motor oil, hydraulic fluid, or some combination thereof.

“Storage coefficient” is the volume of water an aquifer releases from or takes into storage per unit surface area of aquifer per unit change in head.

“Structural components” means liners, leachate collection systems, final covers, run-on/run-off systems, and any other component used in the construction and operation of the MSWLF that is necessary for protection of human health and the environment.

“Tar ball” means a ball or conglomeration of tarlike petroleum constituents. Tar balls may form when PCS that contains a high concentration of long-chain or high molecular weight hydrocarbons is landfarmed.

“Toxic wastes” means materials containing poisons, biocides, acids, caustics, pathological wastes, and similar harmful wastes which may require special handling and disposal procedures to protect the environment and the persons involved in the storage, transport and disposal of the wastes.

“Transfer station” means a fixed or mobile intermediate solid waste disposal facility for transferring loads of solid waste, with or without reduction of volume, to another transportation unit.

“Transmissivity” is the rate at which water is transmitted through a unit width of an aquifer under a unit hydraulic gradient.

“Tree chipping facilities” means facilities which chip trees and brush for the purpose of mulch production.

“Trees” means trunks, limbs, stumps, or branches from trees or shrubs and untreated, uncoated, chemically unchanged wood wastes. This shall not include wood products which are part of an otherwise defined waste or have been contaminated by coatings, treatments or metals.

“Tremie tube” means a pipe used to fill the annular space in a well from the bottom up.

“Type of PCS” means the specific petroleum product or combination thereof that contaminated the soil. Examples of type include, but are not limited to, gasoline, diesel fuel, kerosene, jet fuel, motor oil, hydraulic fluid, or some combination thereof.

“Unconfined aquifer” means an aquifer which does not have a confining bed above it. The level of water in a well in an unconfined aquifer is below the top of the aquifer formation.

“Unsaturated zone” is the subsurface zone above the water table in which the interstitial spaces are only partially filled with water.

“Unstable area” means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terranes.

“Upgradient” means direction of increasing hydraulic head.

“Upgradient well” means a well which is capable of yielding groundwater samples that are representative of regional conditions and are not affected by the landfill site. Such a well is typically placed upgradient of the site, if possible, and, if not, is placed in an upgradient direction and as near the site as feasible.

“Variance” means the sum of the squared differences between the actual measurement and the mean divided by one less than the number of measurements.

“Waste reduction” means practices which reduce, avoid, or eliminate both the generation of solid waste and the use of toxic materials so as to reduce risks to health and the environment and to avoid, reduce or eliminate the generation of wastes or environmental pollution at the source and not merely achieved by shifting a waste output or waste stream from one environmental medium to another environmental medium. Waste reduction includes, but is not limited to, home yard waste composting, which prevents yard waste from entering the waste stream.

“Water table” means the water surface below the ground at which the unsaturated zone ends and the saturated zone begins.

“Yard waste” means debris such as grass clippings, leaves, garden waste, brush and trees. Yard waste does not include tree stumps.

“Zone of saturation” is the subsurface zone below the water table in which the interstitial spaces are completely filled with water.

This rule is intended to implement Iowa Code section 455B.304 and Iowa Code chapter 455D.

[ARC 2756C, IAB 10/12/16, effective 11/16/16; ARC 6352C, IAB 6/15/22, effective 7/20/22; ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—100.3(17A,455B) Forms and rules of practice. Rescinded ARC 6982C, IAB 4/19/23, effective 5/24/23.

567—100.4(455B) General conditions of solid waste disposal. Except as provided otherwise in 567—Chapters 100 to 121, a private or public agency shall not dump or deposit or permit the dumping or depositing of any solid waste at any place other than a sanitary disposal project approved by the director, or pursuant to a permit granted by the department which allows the disposal of solid waste on land owned or leased by the agency.

100.4(1) Definitions. For the purposes of this rule:

“Farm animals” means cattle, swine, sheep or lambs, horses, turkeys, chickens and other domestic animals;

“Farm buildings” means barns, machine sheds, storage cribs, animal confinement buildings, and homes located on the premises and used in conjunction with crop production or with livestock or poultry raising and feeding operations; and

“Farm waste” means machinery, vehicles and equipment used in conjunction with crop production or with livestock or poultry raising and feeding operations, trees, brush and grubbed stumps generated on the same property, or ashes from the burning thereof, but specifically does not include agricultural chemicals, fertilizers or manures, or domestic household wastes.

100.4(2) Special requirements for farm waste, farm buildings, and dead animals.

a. A private agency may dispose of farm waste and farm buildings without first having obtained a sanitary disposal project permit, in accordance with paragraph 100.4(2)“c,” provided that:

(1) The farm waste was owned by the private agency and was used on the premises where disposal occurs.

(2) Prior to disposal of vehicles, machinery, and equipment, all fluids shall be drained, including motor oils, motor fuels, lubricating fluids, coolants and solvents, and agricultural chemicals; and all batteries and rubber tires shall be removed.

(3) Prior to disposal of storage or feeding equipment, the equipment shall be emptied of all contents not otherwise authorized for burial pursuant to these rules.

(4) Farm buildings have been emptied of contents not otherwise authorized for burial pursuant to these rules and have been buried on the premises where they were located.

(5) All materials drained or removed from farm waste or farm buildings prior to disposal shall be recycled, reused or disposed of in accordance with Iowa Code chapter 455B and the rules implementing that chapter.

(6) The farm waste and farm buildings are buried in soils listed in tables contained in the county soil surveys and soil interpretation records (published by the U.S. Soil Conservation Service) as being moderately well drained, well drained, somewhat excessively drained, or excessively drained soils. Other soils may be used if artificial drainage is installed to obtain water-level depth more than two feet below the burial depth of the waste.

(7) The lowest elevation of the burial pit is six feet or less below the surface.

(8) The farm waste and farm buildings are immediately covered with a minimum of 6 inches of soil and finally covered with a total minimum of 24 inches of soil.

b. A private agency may dispose of dead farm animals without first having obtained a sanitary disposal project permit, provided that the disposal is in accordance with paragraph 100.4(2) "c," the rules of the department of agriculture and land stewardship, and:

(1) The dead farm animals result from operations located on the premises where disposal occurs.

(2) A maximum loading rate of 7 cattle, 44 swine, 73 sheep or lambs or 400 poultry carcasses on any given acre per year. All other species will be limited to 2 carcasses per acre. Animals that die within two months of birth may be buried without regard to number.

(3) The dead animals are buried in soils listed in tables contained in the county soil surveys and soil interpretation records (published by the U.S. Soil Conservation Service) as being moderately well drained, well drained, somewhat excessively drained, or excessively drained soils. Other soils may be used if artificial drainage is installed to obtain water-level depth more than two feet below the burial depth of the waste.

(4) The lowest elevation of the burial pit is six feet or less below the surface.

(5) The dead farm animals are immediately covered with a minimum of 6 inches of soil and finally covered with a total minimum of 30 inches of soil.

c. Farm waste, farm buildings, and dead farm animals must be disposed of in accordance with the following separation distances:

(1) At least 100 feet from any private and 200 feet from any public well which is being used or would be used without major renovation for domestic purposes.

(2) At least 50 feet from adjacent property line.

(3) At least 500 feet from an existing neighboring residence.

(4) More than 100 feet from any body of surface water such as a stream, lake, pond, or intermittent stream, except as provided in (6) below.

(5) Outside the boundaries of a flood plain, wetland, or shoreline area, except as provided in (6) below.

(6) Trees, brush and grubbed stumps generated as a result of clearing, snagging, maintenance or repair of drainage ditches or outlets may be buried within 100 feet of a surface water, and within a flood plain or shoreline area.

567—100.5(455B) Disruption and excavation of sanitary landfills or closed dumps. Rescinded ARC 6982C, IAB 4/19/23, effective 5/24/23.

These rules are intended to implement Iowa Code section 455B.307.

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CHAPTER 101
SOLID WASTE COMPREHENSIVE PLANNING REQUIREMENTS

[Prior to 7/1/83, DEQ Ch 26]
[Prior to 12/3/86, Water, Air and Waste Management [900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—101.1(455B,455D) Purpose. The purpose of these rules is to provide general definitions and direction for comprehensive integrated solid waste management planning for every city and county of this state and to provide an orderly and efficient process for the assessment and collection of fees for the disposal of solid waste at a sanitary landfill.

[ARC 8037B, IAB 8/12/09, effective 9/16/09]

567—101.2(455B,455D) Definitions. For the purposes of this chapter, the definitions found in 567—100.2(455B,455D) shall apply.

[ARC 8037B, IAB 8/12/09, effective 9/16/09; ARC 2756C, IAB 10/12/16, effective 11/16/16]

567—101.3(455B,455D) Waste management hierarchy. Rescinded ARC 2756C, IAB 10/12/16, effective 11/16/16.

567—101.4(455B,455D) Duties of cities and counties. Every city and county of this state shall, for the solid waste generated within the jurisdiction of its political subdivision, provide for the establishment and operation of an integrated solid waste management system consistent with the waste management hierarchy under Iowa Code section 455B.301A and designed to meet the state's waste reduction and recycling goals. Integrated systems and municipal solid waste sanitary disposal projects may be established separately or through cooperative efforts, including Iowa Code chapter 28E agreements as provided by law.

101.4(1) To meet these responsibilities, cities and counties may execute, with public and private agencies, contracts, leases, or other necessary instruments, purchase land and do all things necessary not prohibited by law for the implementation of waste management programs, collection of solid waste, establishment and operation of municipal solid waste sanitary disposal projects, and general administration of the same.

101.4(2) If a planning agency refuses any particular solid waste type for management or disposal, the planning agency must identify another municipal solid waste sanitary disposal project for that waste within the planning area. If no other municipal solid waste sanitary disposal project exists within the planning area, the planning agency must, in cooperation with the waste generator, establish or arrange for access to another municipal solid waste sanitary disposal project. Municipal solid waste sanitary disposal projects are required to maintain written approval from both the department and the planning agency in the planning area of origin in order to accept any Iowa-generated waste from outside the planning area.

101.4(3) All cities and counties or Iowa Code chapter 28E agencies established for the purpose of managing solid waste or implementing integrated solid waste management systems, or both, on behalf of cities and counties shall demonstrate compliance with the provisions of this chapter by their participation in a comprehensive plan approved by the department.

[ARC 8037B, IAB 8/12/09, effective 9/16/09; ARC 2756C, IAB 10/12/16, effective 11/16/16]

567—101.5(455B,455D) Contracts with permitted agencies.

101.5(1) Every city, county, and other public agency which complies with the requirements of Iowa Code chapter 455B for the disposal of solid waste by means of a contract with an agency holding a municipal solid waste sanitary disposal project permit or by means of a contract with a hauler that has a contract with an agency holding a municipal solid waste sanitary disposal project permit shall submit to the department notification of that executed contract. All such agencies shall have on file at the department at all times a list of valid contracts. Notification of any renewal of the contract or any new or amended contract shall be submitted.

101.5(2) All public agencies which contract with a hauler to comply with the requirements of part 1 of division IV of Iowa Code chapter 455B shall include, as terms of that contract, a requirement that all

solid waste collected by the hauler for that agency shall be disposed of or deposited at a municipal solid waste sanitary disposal project designated within said agency's comprehensive plan in accordance with the rules of the department.

[ARC 8037B, IAB 8/12/09, effective 9/16/09]

567—101.6(455B,455D) State volume reduction and recycling goals. The goal of the state is to reduce the amount of materials in the waste stream, existing as of July 1, 1988, by an intermediate goal of 25 percent, and by a final goal of at least 50 percent, through the practice of waste volume reduction at the source and through recycling. The updated goal progress calculations provided by the department for each planning area shall be used by the department in reporting to the general assembly on the state's progress toward meeting the 25 and 50 percent goals. The specific methodology for determining goal progress is outlined in rule 567—101.7(455B,455D).

[ARC 2756C, IAB 10/12/16, effective 11/16/16]

567—101.7(455B,455D) Base year adjustment method. Planning agencies may request that the department complete a goal progress recalculation once per fiscal year to resolve any discrepancies and to further evaluate progress toward the state's waste volume reduction and recycling goals. At the time of approval of a comprehensive plan or comprehensive plan update, the department will use the most current complete fiscal year data set available to complete goal progress calculations, which will be used to meet the requirements outlined in rule 567—101.14(455B,455D).

101.7(1) The base year adjustment method (see Formula 1) controls for population, employment, and taxable sales to more accurately determine progress toward the state's waste volume reduction and recycling goals. Factors included within the base year adjustment method include:

- a. Base year residential waste disposal tonnage - (A).
- b. Base year commercial waste disposal tonnage - (B).
- c. Base year population data (U.S. Bureau of the Census) - (C).
- d. Base year employment data - total nonfarm (Iowa Department of Workforce Development) - (D).
- e. Base year taxable sales data (Iowa Department of Revenue) - (E).
- f. Base year consumer price index - (F).
- g. Most current complete fiscal year data set available for waste disposal tonnage - (G).
- h. Most current complete fiscal year data set available for population (U.S. Bureau of the Census) - (H).
- i. Most current complete fiscal year data set available for employment - total nonfarm (Iowa Department of Workforce Development) - (I).
- j. Most current complete fiscal year data set available for taxable sales (Iowa Department of Revenue) - (J).
- k. Most current complete fiscal year data set available for consumer price index - (K).

Formula I

$$100\% - \left[\frac{A \left[\frac{H}{C} + \left[\frac{\frac{I}{D} + \frac{J - \frac{F}{K}}{E}}{2} \right] \right] + B \left[\frac{I}{D} + \left[\frac{\frac{J - \frac{F}{K}}{E}}{2} \right] \right]}{G} \right] \times 100\%$$

101.7(2) Planning agencies must document the amount of waste disposed of in both the base year and the most current fiscal year where a complete data set is available. If no changes have occurred within the planning area that would affect the base year, then only data for the most current fiscal year for which a complete data set is available need to be presented in the comprehensive plan update, since information on each planning area's base year tonnage is presented in prior comprehensive plan submittals. Tonnage data sources that each planning agency must identify include, but are not limited to:

- a. Landfill(s) within the planning area and its respective service area(s).

b. Transfer station(s) or hauler(s) transporting waste into or out of the planning area for final disposal.

c. Incineration with or without energy recovery of waste within the planning area.

d. Allowable base year adjustment method exemptions, including exceptional events, waste originating from out of state, and solid waste generated outside the planning area.

101.7(3) Waste generated as part of an exceptional event or contaminated soils removed as part of a brownfield or contaminated site cleanup should not negatively affect a planning area's goal progress calculation.

a. Exceptional events include, but are not limited to, such unforeseen disasters as storms, fires, floods, tornadoes, or train wrecks. Exceptional events do not include economic development, derelict housing removal, or other planned activities/demolitions. Written requests to exempt exceptional event debris from goal progress calculations shall be made to the department on the required Quarterly Solid Waste Fee Schedule and Retained Fees Report, DNR Form 542-3276.

Requests for goal progress calculation exemptions must be made within six months after initial disposal of the debris. The determination to exempt exceptional-event debris from goal progress calculations shall be made solely by the department and shall not be made independently by individual municipal solid waste sanitary disposal projects or planning agencies. Upon review of the request, the department will notify the municipal solid waste sanitary disposal project and planning agency of the determination in writing or request further documentation.

(1) Exemption requests shall, at a minimum, include:

1. Date(s) of duration of the exceptional event.
2. Type of event (i.e., flood, tornado, combination thereof).
3. Description of affected area(s), including approximate number of buildings and addresses, if available.
4. Type(s) of waste to be exempted.
5. Actual tonnage of debris disposed of during the quarter.
6. Preliminary estimate of the total tonnage to be exempted (i.e., tons already disposed of and potential tons to be disposed of in future quarters).

(2) Additional documentation to verify the exceptional event and the debris it generated may be requested by the department. Failure to submit requested documentation may result in denial of the goal progress calculation exemption request. Documentation may include:

1. Protocol used by the municipal solid waste sanitary disposal project staff for determining which waste(s) coming into the facility was attributed to the exceptional event.
2. Summary of existing policies to divert storm debris from disposal, as well as the amount of waste(s) diverted.
3. Copies of scale tickets and summary report of scale tickets.
4. Federal Emergency Management Agency (FEMA) reports, if any.
5. Newspaper articles or pictures of affected areas.
6. Supporting documentation indicating estimated remaining tonnage expected as a result of the exceptional event (i.e., supporting documentation from local insurance companies or municipal building inspectors).
7. Contact information for the person(s) responsible for compiling the exceptional event report(s).

b. Contaminated soils removed as part of a brownfield or contaminated site cleanup should not negatively affect a planning area's goal progress calculation. If the contaminated soil is to be disposed of in a municipal solid waste sanitary disposal project, the municipal solid waste sanitary disposal project or planning agency must request the goal progress exemption in writing, in accordance with the procedures outlined in this rule. Written requests to exempt contaminated soil from goal progress calculations shall be made to the department on the Quarterly Solid Waste Fee Schedule and Retained Fees Report, DNR Form 542-3276. Requests for goal progress exemptions must be made within six months after initial disposal of the contaminated soil.

The determination to exempt contaminated soil from goal progress calculations shall be made solely by the department and shall not be made independently by individual municipal solid waste sanitary disposal

projects or planning agencies. The department shall notify the municipal solid waste sanitary disposal project or planning agency in writing of the determination or shall request further clarification to make an exemption decision. Failure to submit additional information requested by the department regarding the request to exempt contaminated soil may result in a denial of the goal progress calculation exemption request. Contaminated soil occurrences not eligible for goal progress exemption include, but are not limited to, illegal municipal solid waste disposal sites and contaminated soils formed for the sole purpose of requesting goal progress exemption. Exemption requests shall include, at a minimum, the following:

(1) Contact information of the primary and any other government agency overseeing or involved with site cleanup.

(2) Address of the brownfield or contaminated site.

(3) Date(s) when the site was believed to have been contaminated, if known.

(4) Type of operation and owners of the operation that led to the contamination, if known.

(5) Constituents of concern present in the soil.

(6) Types of miscellaneous waste mixed with the soil, if any.

(7) Appropriate testing for identified contaminants of the contaminated soil.

(8) Actual tonnage of contaminated soil disposed of during the quarter.

(9) Preliminary estimate of the total tonnage to be exempted (i.e., tons of contaminated soil already disposed of and potential tons to be disposed of in future quarters).

(10) Narrative justification to explain why disposal in a municipal solid waste sanitary disposal project is the best site cleanup methodology.

[ARC 8037B, IAB 8/12/09, effective 9/16/09; ARC 2756C, IAB 10/12/16, effective 11/16/16]

567—101.8(455B,455D) Submittal of initial comprehensive plans and comprehensive plan updates.

Initial comprehensive plans and comprehensive plan updates filed with the department must include a signed electronic submission certificate. Comprehensive plan updates shall be submitted in accordance with the schedule and instructions provided by the department 12 months prior to the due date of the first comprehensive plan update for each planning cycle.

[ARC 8037B, IAB 8/12/09, effective 9/16/09; ARC 2756C, IAB 10/12/16, effective 11/16/16]

567—101.9(455B,455D) Review of initial comprehensive plans and comprehensive plan updates.

Initial comprehensive plans and comprehensive plan updates submitted in accordance with rule 567—101.13(455B,455D) shall be reviewed by the department for compliance with this chapter. The director may reject, suggest modification of, or approve a comprehensive plan based upon the criteria outlined in rule 567—101.13(455B,455D).

567—101.10(455B,455D) Municipal solid waste and recycling survey. Rescinded ARC 2756C, IAB 10/12/16, effective 11/16/16.

567—101.11(455B,455D) Online database. Rescinded ARC 2756C, IAB 10/12/16, effective 11/16/16.

567—101.12(455B,455D) Solid waste comprehensive plan types. A city, county, or private agency operating or planning to operate a municipal solid waste sanitary disposal project shall file with the director one of two types of comprehensive plans detailing the method by which the city, county, or private agency will comply with solid waste comprehensive planning requirements. The first type is a comprehensive plan in which solid waste is disposed of in a sanitary landfill within the planning area. The second type is a comprehensive plan in which all solid waste is consolidated at, and transported from, a permitted transfer station for disposal at a sanitary landfill in another comprehensive planning area or state.

101.12(1) A planning area that closes all of the municipal solid waste sanitary landfills located in the planning area and chooses instead to use a municipal solid waste sanitary landfill in another planning area may choose to retain its autonomy as long as the sanitary landfill in the other planning area complies with all the requirements of this chapter, and all solid waste generated within the planning area closing its landfills is consolidated at, and transported from, a permitted transfer station. For purposes of this subrule,

a planning area closing its own landfills that chooses to retain its autonomy shall not be required to join the planning area that contains the landfill it is using for final disposal of its solid waste.

101.12(2) If a planning area chooses to retain autonomy pursuant to this rule, the planning area receiving solid waste from the planning area sending it shall not be required to include the sending planning area in its comprehensive plan provided that no services other than the acceptance of solid waste for disposal are shared between the two planning areas. A planning area receiving solid waste shall only be responsible for the permitting, planning, and waste reduction and diversion programs within that planning area.

101.12(3) If the department determines that solid waste cannot reasonably be consolidated and transported from a particular transfer station (e.g., asbestos or bulky construction and demolition waste), the department may establish permit conditions to address the transport and disposal of the solid waste. A planning area sending solid waste for disposal in another planning area may retain autonomy pursuant to subrule 101.12(1) only if both comprehensive planning areas enter into an agreement pursuant to Iowa Code chapter 28E that includes both of the following:

a. A detailed methodology of the manner in which solid waste will be tracked and reported between the two planning areas.

b. A detailed methodology of the manner in which the receiving sanitary landfill will collect, remit, and report tonnage fees, pursuant to Iowa Code section 455B.310, paid by the planning area that is transporting the solid waste. The methodology shall include both the remittances of tonnage fees to the state and the retained tonnage fees.

[ARC 8037B, IAB 8/12/09, effective 9/16/09]

567—101.13(455B,455D) Types of comprehensive plan submittals to be filed. There are three types of comprehensive plan submittals: initial, updates, and amendments. The purpose of these types of comprehensive plans is the development of a specific plan and schedule for implementing technically and economically feasible solid waste management methods that will prevent or minimize any adverse environmental impact and meet the state's waste volume reduction and recycling goals pursuant to rule 567—101.6(455B,455D).

Cities and counties planning to use a municipal solid waste sanitary disposal project in Iowa must participate in a comprehensive plan with all other cities and counties using that municipal solid waste sanitary disposal project. Cities and counties planning to use an out-of-state disposal facility(ies) must file a comprehensive plan that identifies the out-of-state facility(ies) used. Cities or counties using an out-of-state disposal facility(ies) are still required to meet all comprehensive plan submittal requirements.

If it is demonstrated to the department that any of the provisions outlined in paragraphs “1” through “3” below will not impact the planning area significantly, then the department may consider accepting a comprehensive plan amendment. If during the planning cycle a change occurs to an existing planning area, the submission of an initial comprehensive plan may be required. An initial comprehensive plan is needed if:

1. A new planning area is established.
2. A change increases or decreases the population or the disposal tonnage of the planning area by more than 30 percent.
3. The solid waste disposal method has changed or a new method has been initiated, including siting of a new municipal solid waste landfill or municipal solid waste incinerator.

101.13(1) Content of an initial comprehensive plan. In fulfillment of the requirements of Iowa Code section 455B.301A and Iowa Code chapter 455D, an initial comprehensive plan shall include the following information:

a. A description of the planning area and the public and private agencies involved in the integrated solid waste management system, including a description of each agency's role in managing solid waste generated in the area.

b. A resolution or resolutions from all local governments or 28E agencies established for the purpose of managing solid waste or implementing integrated solid waste management systems, or both, on behalf of local governments, and letters of cooperation from privately owned municipal solid waste sanitary disposal projects participating in the comprehensive plan. The resolution(s) shall include a statement that the

comprehensive plan participants have reviewed the initial comprehensive plan and will adopt the implementation schedule contained within the initial comprehensive plan. Letters of cooperation from private agencies shall include a statement that the private agencies have reviewed the comprehensive plan and support the waste volume reduction and recycling efforts outlined therein. The letter of cooperation shall briefly summarize the implementation schedule. If a local government included in the planning area refuses to provide a resolution, then that local government must prepare its own comprehensive plan and is no longer considered to be in the original planning area. In such cases, the original comprehensive plan may still be approved if it includes a brief addendum stating the effect of the change on the waste stream, but the municipal solid waste sanitary disposal project(s) in the planning area may no longer accept waste from the local government that has withdrawn from the comprehensive plan. Privately owned municipal solid waste sanitary disposal projects failing to provide letters of cooperation will be unable to receive a permit or permit renewal. If a city, county, or other public agency complies with comprehensive planning requirements by means of a contract(s) with an agency holding a municipal solid waste sanitary disposal project permit or with a hauler(s) that has a contract(s) with an agency holding a municipal solid waste sanitary disposal project permit, a list of those contracts shall be submitted as provided in rule 567—101.5(455B,455D).

- c. A detailed description of public participation, including:
 - (1) Details of ongoing strategies to provide the public with opportunities to provide input.
 - (2) A list of all public hearings or meetings that were held in conjunction with the development of the initial comprehensive plan and the methods used to publicize public meetings on the initial comprehensive plan.
 - (3) An account of opportunities for the public to comment on the initial comprehensive plan and minutes from any meetings regarding initial comprehensive plan development.
 - (4) Proof that a minimum of two public meetings were held during the development of the initial comprehensive plan. The first meeting shall inform the public of the initial comprehensive plan development process, while the second meeting shall provide the public with an opportunity for review and comment on the initial comprehensive plan.
- d. A description of past local and regional planning activities.
- e. A report of the base year waste stream in total tons per year. Progress toward meeting the state's waste volume reduction and recycling goals pursuant to rule 567—101.6(455B,455D) shall be demonstrated through methods described in this chapter.
- f. A description of population, employment, and industrial production as of the planning area's base year waste stream.
- g. A description of the current waste composition and waste generation rates and a projection of waste composition and waste generation rates during the next planning cycle. This description should include the effects of anticipated planning area modifications on waste generation and composition in the future. These factors may include economic changes, population changes, loss or addition of communities to the planning area, and any other modification expected to affect the amount of waste generated.
- h. A description of the current integrated solid waste management system that contains a specific methodology for meeting the state's waste volume reduction and recycling goals pursuant to rule 567—101.6(455B,455D). This description shall include:
 - (1) Details of strategies and educational efforts designed to:
 - 1. Increase public awareness about proper recycling and disposal options for motor oil and lead-acid batteries.
 - 2. Encourage residents of the planning area to dispose of household appliances properly.
 - 3. Encourage tire stewardship and proper tire recycling and disposal.
 - 4. Encourage backyard composting and proper management of yard waste.
 - 5. Encourage residents of the planning area to properly manage household hazardous waste.
 - (2) A list of collectors/recyclers used by the permitted municipal solid waste sanitary disposal project(s) for the proper management of tires or household appliances.
 - (3) A detailed narrative of all other existing waste management programs in the planning area that addresses all components of the state's waste management hierarchy. This narrative must include specific

methodologies for the separation of glass, paper, plastic and metal. For each specific waste management program, the following shall be included:

1. Program description.
 2. Responsibility for program oversight.
 3. Funding source(s).
 4. Public education strategies employed.
 5. Targeted audiences (business and industry, urban residents, rural residents, local governments, and public institutions).
 6. The anticipated impact on the waste stream and diversion during the next planning cycle.
- (4) A discussion of the strengths and weaknesses of existing programs, efforts and strategies in the current integrated solid waste management system.
- (5) An evaluation of the planning area's progress toward meeting the state's waste volume reduction and recycling goals. This evaluation shall address the goal progress calculation that was most recently provided in writing by the department. The department, upon written notification of intent to submit an initial comprehensive plan, will, within 30 days after receipt of notification, perform a goal progress calculation using the most current complete fiscal year data set available.
- i. An assessment of alternative waste management systems, programs and strategies that addresses each of the following tiers of the state's waste management hierarchy:
- (1) Source reduction options including, but not limited to, backyard composting and management of household hazardous waste.
 - (2) Recycling and reuse options.
 - (3) Combustion options with or without energy recovery. Any programs using incineration, with or without energy recovery, must include methodologies for prior removal of recyclable and reusable material, material that will result in uncontrolled toxic or hazardous air emissions when burned, and hazardous or toxic materials which are not rendered nonhazardous or nontoxic by incineration.
 - (4) Use of other existing or planned sanitary landfills or transfer stations.
- j. If construction of a new or purchase of an existing municipal solid waste sanitary disposal project is considered or proposed, an initial comprehensive plan shall include:
- (1) A summary of established and anticipated regulatory requirements regarding future siting, operation, closure and postclosure of each facility.
 - (2) A financial plan detailing the actual cost of the municipal solid waste sanitary disposal project, including the funding sources of the project, and a description that spans two planning cycles of the methods of financing. The financial plan shall address:
 1. Initial capital expenditures, including land acquisition, if applicable.
 2. Local approval costs, including legal, engineering, and administrative fees.
 3. Long-term costs, operations, closure and postclosure.
 4. A mechanism to fund closure and postclosure costs.
 5. Projected annual revenues.
 - (3) A description of expected environmental impacts from the construction of a new or purchase of an existing municipal solid waste sanitary disposal project.
- ¹(4) Rescinded IAB 7/4/07, effective 10/1/07.
- k. A specific plan and schedule for implementing the initial comprehensive plan during the next planning cycle. Items that shall be addressed include:
- (1) Proposed activities and locations.
 - (2) Responsible organization(s).
 - (3) Implementation milestones.
 - (4) Public education strategies.
 - (5) Anticipated impact on the waste stream and diversion.

101.13(2) *Comprehensive plan updates for municipal solid waste sanitary disposal projects.* The department shall notify a planning agency of the due dates of the comprehensive plan update submittal a minimum of 12 months prior to the beginning of the planning cycle. In fulfillment of the requirements of

Iowa Code section 455B.301A and Iowa Code chapter 455D, a comprehensive plan update shall include the following information:

a. A narrative that describes any permanent change in the planning area that has resulted in change in the waste stream, if applicable. An amendment to the comprehensive plan update is required prior to the facility's receiving waste on an ongoing basis from outside the delineated planning area.

b. A resolution or resolutions from all local governments or 28E agencies established for the purpose of managing solid waste or implementing integrated solid waste management systems, or both, on behalf of local governments, and letters of cooperation from privately owned municipal solid waste sanitary disposal projects participating in the comprehensive plan update. The resolution(s) shall include a statement that the comprehensive plan participants have reviewed the comprehensive plan update and will adopt the implementation schedule contained in the comprehensive plan update. Letters of cooperation from private agencies shall include a statement that they have reviewed the comprehensive plan update and support the waste reduction and recycling efforts outlined therein. The letter of cooperation shall briefly summarize the implementation schedule. If a local government included in the planning area refuses to provide a resolution, then that local government must prepare its own comprehensive plan and is no longer considered to be in the original planning area. In such cases, the original comprehensive plan update may still be approved if it includes a brief addendum stating the effect of the change on the waste stream, but the municipal solid waste sanitary disposal project(s) in the planning area may no longer accept waste from the local government that has withdrawn from the comprehensive plan. Privately owned municipal solid waste sanitary disposal projects failing to provide letters of cooperation will be unable to receive a permit or permit renewal. If a city, county, or other public agency complies with comprehensive planning requirements by means of a contract(s) with an agency holding a municipal solid waste sanitary disposal project permit or with a hauler(s) that has a contract(s) with an agency holding a municipal solid waste sanitary disposal project permit, a list of those contracts shall be submitted as provided in rule 567—101.5(455B,455D).

c. A description of public participation, including:

- (1) A summary of ongoing strategies to provide the public with opportunities to provide input.
- (2) A list of all public hearings or meetings that were held in conjunction with the development of the comprehensive plan update and the methods used to publicize public meetings.
- (3) Proof that a minimum of two public meetings were held during the development of the comprehensive plan update. The first meeting shall inform the public of the comprehensive plan update development process, while the second meeting shall provide the public with an opportunity for review and comment on the comprehensive plan update.

(4) An account of opportunities for the public to comment on the comprehensive plan update and minutes from any meetings regarding comprehensive plan update development.

d. A report of the base year waste stream in total tons per year. This base year data and landfill tonnage information for the most current completed fiscal year data set available will be used to demonstrate progress toward meeting the state's waste volume reduction and recycling goals pursuant to rule 567—101.6(455B,455D) through methods described in this chapter.

e. A description of changes in population, employment, and industrial production since the last approved comprehensive plan or comprehensive plan update.

f. A description of current waste composition and waste generation rates, including:

- (1) Changes since the last approved comprehensive plan or comprehensive plan update.
- (2) The effects of anticipated planning area modifications on waste generation and composition in the future. These factors may include economic changes, population changes, loss or addition of communities to the planning area and any other modification expected to affect the amount of waste generated.

g. A discussion of changes to the integrated solid waste management system since the last approved comprehensive plan or comprehensive plan update, including:

- (1) New and evolving strategies, efforts, and programs implemented within the planning area to:
 1. Increase public awareness about proper recycling and disposal options for motor oil and lead-acid batteries.
 2. Encourage residents of the planning area to dispose of household appliances properly.

3. Encourage tire stewardship and proper tire recycling and disposal.
 4. Encourage backyard composting and proper management of yard waste.
 5. Encourage residents of the planning area to properly manage household hazardous waste.
 6. Provide for the separation of glass, paper, plastic and metal.
- (2) A list of collectors/recyclers used by the permitted municipal solid waste sanitary disposal project(s) for the proper management of tires or household appliances.
- (3) A detailed narrative of all waste management programs implemented since the last approved comprehensive plan or comprehensive plan update that addresses all components of the state's waste management hierarchy. For each specific waste management program implemented since the last approved comprehensive plan or comprehensive plan update, the following shall be included:
1. Program description.
 2. Responsibility for program oversight.
 3. Public education strategies employed.
 4. Targeted audiences (business and industry, urban residents, rural residents, local governments, and public institutions).
 5. The anticipated impact on the waste stream and diversion during the next planning cycle.
- h.* An evaluation of progress toward meeting the state's waste volume reduction and recycling goals using the goal progress calculation provided by the department 12 months prior to the due date of the comprehensive plan update, if requested by the planning agency. This analysis may use any combination of the following methodologies:
- (1) Trend analysis of goal progress since the initial comprehensive plan.
 - (2) Formal, stakeholder-based collaborative goal-setting process leading to development of long-range integrated solid waste management system goals. The process shall include development of detailed objective-based strategies to achieve the desired goals. If programs have been implemented since the establishment of the goals, the comprehensive plan update shall include analysis of their impact on the long-range goals.
- (3) An analysis of the effectiveness or benefit of existing programs, individually and in aggregate, including a discussion of opportunities and need for improvement, modification or expansion.
- i.* Analysis of the impact of alternative solid waste management methods not currently employed, but being considered within the planning area.
- j.* A specific plan and schedule for implementing the comprehensive plan during the next planning cycle. Items that shall be addressed include:
- (1) Proposed activities and locations.
 - (2) Responsible organization(s).
 - (3) Implementation milestones.
 - (4) Public education strategies.
 - (5) Anticipated impact on the waste stream and diversion.
- k.* Annual reports submitted by planning agencies designated as environmental management systems, pursuant to Iowa Code section 455J.7, which satisfy the comprehensive plan update submittal requirements of this subrule.

101.13(3) to 101.13(6) Rescinded IAB 8/12/09, effective 9/16/09.

101.13(7) *Comprehensive plan amendments.* If a municipal solid waste sanitary disposal project or city or county requests to be included in a planning area after completion of an initial comprehensive plan or a comprehensive plan update but before the next comprehensive plan update is due, and the planning area participants agree to include the city, county, or municipal solid waste sanitary disposal project, the following procedure is required:

- a.* A letter must be submitted to the department by the facility operator describing the facility's operation and the amount of waste to be managed, or by the city or county describing that local government's intention to participate in the specified comprehensive plan.
- b.* In a letter that must be submitted to the department, the planning agency must agree to accept the city, county, or municipal solid waste sanitary disposal project in the planning agency's planning area and must state how the change will affect the planning area's waste stream, including an explanation of the

change in the planning area, the amount of waste involved and details of waste reduction and recycling efforts that will be implemented in any new communities, if applicable.

c. The next comprehensive plan update submitted by the planning agency shall include the amended city, county, or municipal solid waste sanitary disposal project.

d. If a city or county joins a planning area, a resolution must be submitted to the department stating the city's or county's commitment to the comprehensive plan of the planning area, and stating that the city or county will work to implement the comprehensive plan of the planning area.

101.13(8) *Failure to meet the 25 percent waste volume reduction and recycling goal.* Rescinded **ARC 2756C**, IAB 10/12/16, effective 11/16/16.

[**ARC 8037B**, IAB 8/12/09, effective 9/16/09; **ARC 2756C**, IAB 10/12/16, effective 11/16/16]

¹ Effective date of rescission of 101.13(1)“j”(4) delayed 70 days by the Administrative Rules Review Committee at its meeting held September 11, 2007.

567—101.14(455B,455D) Fees for disposal of solid waste at sanitary landfills.

101.14(1) *Authority, purpose and applicability.*

a. *Authority.* Pursuant to Iowa Code section 455B.310, the department has authority to collect fees for the disposal of solid waste at sanitary landfills. All tonnage fees received by the department under this rule shall be deposited in the solid waste account of the groundwater protection fund created under Iowa Code section 455E.11(1).

b. *Purpose.* The purpose of this rule is to provide an orderly and efficient process for the assessment and collection of fees for the disposal of solid waste at a sanitary landfill. This rule clarifies the applicability of the fees and sets forth a fee schedule, means of filing, and record-keeping requirements.

c. *Applicability.* Except as provided in subrule 101.14(2), operators of all sanitary landfills located within Iowa and subject to the permitting requirements of the department shall pay a fee for each ton of solid waste disposed of in the landfill.

101.14(2) *Exclusion.* Fees do not apply to wastes which will not be buried at a sanitary landfill if such material is salvaged or recycled in accordance with the provisions of the landfill permit.

101.14(3) *Fee schedule.*

a. The base tonnage fee is \$4.25 per ton of solid waste.

b. The statewide goal progress average is 36 percent, as determined by the department on July 1, 1999.

c. If at any time the department notifies a planning agency or municipal solid waste sanitary disposal project(s) in writing that the planning area has failed to meet the 25 percent goal, all municipal solid waste sanitary disposal projects within that planning area that are required to remit state tonnage fees shall collect an additional 50 cents per ton, in addition to the base tonnage fee starting with the next scheduled fee payment. All municipal solid waste sanitary disposal projects within the planning area that are required to remit state tonnage fees shall remit to the department \$3.30 per ton for the tonnage fees collected, and the sanitary landfill operator(s) shall retain the remaining \$1.45 per ton. Of the tonnage fee retained by the sanitary landfill operator(s), 95 cents per ton is to be used for comprehensive plan implementation and 50 cents per ton is to be used for environmental protection activities and for comprehensive planning. Environmental protection activities include the development of a closure or postclosure plan, the development of a plan for the control and treatment of leachate including the preparation of facility plans and detailed plans and specifications, the preparation of a financial plan, or other environmental protection activities. Moneys due to the department under this paragraph shall be remitted until such time as evidence of attainment of the 25 percent goal by the planning area is documented and approved in writing by the department.

d. If at any time the department notifies a planning agency and municipal solid waste sanitary disposal project(s) in writing that the planning area has met or exceeded the 25 percent goal, all municipal solid waste sanitary disposal projects within that planning area that are required to remit state tonnage fees shall reduce by 60 cents per ton the total amount of the base tonnage fee collected, starting with the next scheduled fee payment.

(1) If the planning area meets the 25 percent goal but is under the statewide average described in paragraph 101.14(3)“b,” all municipal solid waste sanitary disposal projects within that planning area that are required to remit state tonnage fees shall remit to the department \$2.20 per ton for the tonnage fees collected, and the sanitary landfill operator(s) shall retain the remaining \$1.45 per ton. Of the tonnage fee retained by the sanitary landfill operator(s), 95 cents per ton is to be used for comprehensive plan implementation and 50 cents per ton is to be used for environmental protection activities and for comprehensive planning. Environmental protection activities include the development of a closure or postclosure plan, the development of a plan for the control and treatment of leachate including the preparation of facility plans and detailed plans and specifications, the preparation of a financial plan, or other environmental protection activities. Moneys due to the department under this paragraph shall be remitted until such time as evidence of a change in the planning area’s progress toward meeting the state’s waste volume reduction and recycling goals is documented and approved in writing by the department.

(2) If the planning area meets the 25 percent goal and exceeds the statewide average described in paragraph 101.14(3)“b,” all municipal solid waste sanitary disposal projects within that planning area that are required to remit state tonnage fees shall remit to the department \$2.10 per ton for the tonnage fees collected, and the sanitary landfill operator(s) shall retain the remaining \$1.55 per ton. Of the tonnage fee retained by the sanitary landfill operator(s), \$1.05 per ton is to be used for comprehensive plan implementation and 50 cents per ton is to be used for environmental protection activities and for comprehensive planning. Environmental protection activities include the development of a closure or postclosure plan, the development of a plan for the control and treatment of leachate including the preparation of facility plans and detailed plans and specifications, the preparation of a financial plan, or other environmental protection activities. Moneys due to the department under this paragraph shall be remitted until such time as evidence of a change in the planning area’s progress toward meeting the state’s waste volume reduction and recycling goals is documented and approved in writing by the department.

e. If at any time the department notifies a planning agency or municipal solid waste sanitary disposal project(s) in writing that the planning area has met or exceeded the 50 percent goal, all municipal solid waste sanitary disposal projects within that planning area that are required to remit state tonnage fees shall reduce by \$1.00 per ton the total amount of the base tonnage fee collected, starting with the next scheduled fee payment. All municipal solid waste sanitary disposal projects within the planning area that are required to remit state tonnage fees shall remit to the department \$1.95 per ton for the tonnage fees collected, and the sanitary landfill operator(s) shall retain the remaining \$1.30 per ton. Of the tonnage fee retained by the sanitary landfill operator(s), 80 cents per ton is to be used for comprehensive plan implementation and 50 cents per ton is to be used for environmental protection activities and for comprehensive planning. Environmental protection activities include the development of a closure or postclosure plan, the development of a plan for the control and treatment of leachate including the preparation of facility plans and detailed plans and specifications, the preparation of a financial plan, or other environmental protection activities. Moneys due to the department under this paragraph shall be remitted until such time as evidence of a change in the planning area’s progress toward meeting the state’s waste volume reduction and recycling goals is documented and approved in writing by the department.

Table 1 sets forth the solid waste tonnage fee schedule.

Table 1	
Planning areas with less than 25% diversion level:	
Collect	\$4.75 per ton
Remit	\$3.30 per ton to the department
Retain	\$1.45 per ton (\$0.95 per ton for implementing planning, \$0.50 per ton for environmental protection, comprehensive plan development and implementation)
Planning areas over 25% diversion, under the state average, and under 50%:	
Collect	\$3.65 per ton
Remit	\$2.20 per ton to the department
Retain	\$1.45 per ton (\$0.95 per ton for implementing planning, \$0.50 per ton for environmental protection, comprehensive plan development and implementation)
Planning areas over 25% diversion, over the state average, and under 50%:	

Collect	\$3.65 per ton
Remit	\$2.10 per ton to the department
Retain	\$1.55 per ton (\$1.05 per ton for implementing planning, \$0.50 per ton for environmental protection, comprehensive plan development and implementation)
Planning areas over 50% diversion:	
Collect	\$3.25 per ton
Remit	\$1.95 per ton to the department
Retain	\$1.30 per ton (\$0.80 per ton for implementing planning, \$0.50 per ton for environmental protection, comprehensive plan development and implementation)

f. Retained tonnage fees collected pursuant to this subrule shall be approved by the department and used for implementation of programs and services designed to satisfy the requirements of this chapter.

g. For purposes of calculating tonnage fees, sanitary landfills shall utilize scales and shall base the fee assessment on the net scale weight of solid wastes disposed of at the landfill during the reporting period.

h. If special conditions existing at a sanitary landfill make it impractical to use the landfill's scales to determine waste tonnages, the landfill may propose, for department review and approval, an alternate method for determining the weight of disposed solid waste.

101.14(4) Form, manner, time and place of filing.

a. *Form.* Any person to whom or entity to which this rule applies shall file a completed DNR Form 542-3276, Quarterly Solid Waste Fee Schedule and Retained Fees Report.

b. *Manner, time and place.* Fees are to be paid on a quarterly basis. Sanitary landfills serving more than one planning area, as expressed in rule 101.12(455B,455D), shall submit separate Quarterly Solid Waste Fee Schedule and Retained Fees Reports for each planning area. The fees and report on retained fees will be due January 1, April 1, July 1, and October 1 for the quarters ending September 30, December 31, March 31, and June 30, respectively. The completed form shall be submitted with the appropriate fees to Accounting, Department of Natural Resources, Wallace State Office Building, 502 East 9th Street, Des Moines, Iowa 50319.

101.14(5) Reporting and record keeping.

a. *Operating records.* Those sanitary landfill operators who are subject to the fee assessment requirements of this rule shall maintain adequate records to determine and document the weight of solid waste received at and disposed of in the sanitary landfill during the calendar year. Planning areas entering into an agreement pursuant to Iowa Code Supplement section 455B.306(2) shall submit documentation to the department and a planning area receiving the solid waste under such an agreement shall, in addition, submit evidence to the department demonstrating that required retained fees were returned in a timely manner to other planning area(s) under the agreement.

b. *Retention of records.* All records used in determining the solid waste fee assessment must be kept for a period of at least three years from the end of the calendar year which the records represent.

c. *Availability of records.* All records required under this rule must be furnished upon request and be made available at all reasonable times for inspection to any officer, employee, or representative of the department who is duly designated by the director.

101.14(6) Failure to pay fees. If it is found that a person or entity has failed to pay the fees assessed by this rule, the director shall enforce the collection of the delinquent fees. A person or entity required to pay fees as required by Iowa Code section 455B.310 that fails or refuses to pay the fees by the due date shall be assessed a penalty of 2 percent of the quarterly fee due, to be assessed on January 2, April 2, July 2, and October 2, and on a monthly basis on the first day of each month thereafter, until paid. A person or entity required to retain fees as required by Iowa Code section 455B.310 that fails or refuses to report the use of the retained fees by the due date shall be assessed a penalty of 2 percent of the retained fees due to the department, with said penalty to be assessed on January 2, April 2, July 2, and October 2, and on a monthly basis on the first day of each month thereafter, until paid. All penalties shall be paid in addition to the fees due.

[ARC 8037B, IAB 8/12/09, effective 9/16/09]

These rules are intended to implement Iowa Code sections 455B.301A, 455B.302, 455B.306, 455B.310 and 455D.3.

[Filed 9/1/74; amended 2/13/74, 6/2/75]

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IAB 8/12/09, effective 9/16/09]

[Filed ARC 2756C (Notice ARC 2630C, IAB 7/20/16), IAB 10/12/16, effective 11/16/16]

¹ Rules 101.4 and 101.7 rescinded, rules 101.5, 101.6 and 101.8 renumbered as 101.4 to 101.6, IAB 9/12/84.

² Effective date of rescission of 101.13(1)“j”(4) delayed 70 days by the Administrative Rules Review Committee at its meeting held September 11, 2007.

CHAPTER 102
PERMITS AND RULES OF PRACTICE

[Prior to 7/1/83, DEQ Ch 27]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—102.1(455B) Permit required. No public or private agency shall construct or operate a sanitary disposal project without first obtaining a permit from the director.

567—102.2(455B) Types of permits. There are four types of permits issued by the director. These are described in this rule.

102.2(1) *Sanitary disposal project permit.* This permit is issued by the director under the authority of Iowa Code section 455B.305. Such permits are issued for a term of three years and are renewable for similar terms.

a. Applications for renewal to be timely filed must be received at the department's office at least 90 days before the expiration date of the existing permit on a form provided by the department.

b. The department shall conduct an inspection of the sanitary disposal project following receipt of the application for renewal. Following the inspection, the permit holder shall be notified of all measures needed to bring the sanitary disposal project into conformance with Iowa Code chapter 455B and these rules.

c. A permit shall be renewed when a properly completed application has been received and all corrective measures required under 102.2(1) "*b*" have been completed.

102.2(2) *Temporary permit.* This permit is issued by the director under the authority of Iowa Code subsection 455B.307(1) for solid waste disposal sites which do not comply with the requirements of Iowa Code chapter 455B and these rules. Such permits are issued for a term of one year, and are renewable. Temporary permits may be renewed if the director finds that the public interest will be best served by granting a renewal and the terms of the previous temporary permit have been complied with.

a. Temporary permits shall incorporate as a condition a compliance schedule specifying how and when the applicant will meet the requirements of Iowa Code chapter 455B and these rules.

b. The decision of the director whether to issue a temporary permit, being discretionary, shall be a final decision. Once a temporary permit has been issued, it may be suspended or revoked only as provided in Iowa Code section 455B.305 and 567—Chapter 7.

102.2(3) *Developmental permit.* The director may issue a developmental permit for construction and operation of a sanitary disposal project which is not specifically described in these rules if the permit applicant demonstrates at a public hearing that the proposed project can provide satisfactory disposal of solid waste without adverse health-related or environmental effects.

a. No such permit shall be issued until the director, after public hearing, considers and approves the proposed project.

b. Developmental permits shall be issued for a term no less than one year and no more than three years.

c. Developmental permits may be renewed if the director finds, following public hearing, that the sanitary disposal project provided satisfactory disposal of solid waste without adverse health-related or environmental effects over the term of the prior permit.

102.2(4) *Closure permit.* This permit is issued by the director under the authority of Iowa Code section 455B.305 for sanitary disposal projects which no longer accept solid waste. Such permits are issued for a term of 30 years. The term of subsequent renewal of the permit, if the postclosure period is extended, will be determined on a site-specific basis. A sanitary disposal project shall require a closure permit until the department determines that postclosure maintenance, postclosure monitoring, and operation of required leachate control system are no longer necessary.

a. Application shall be filed at the time of departmental notification of intended closure as required by this rule.

b. The application for issuance of this permit shall be based on a previously approved comprehensive plan and other rules adopted pursuant to the authority of Iowa Code section 455B.306.

c. This permit shall require submission of an annual audit report detailing the status of the financial instrument and other funds as required to guarantee completion of postclosure and monitoring requirements.

d. This permit may be modified by the issuance of an amendment by the department. Requests for permit amendments may be initiated by the department or by the permit holder.

e. At the end of the applicable postclosure period, and upon satisfactory completion of all required postclosure activities as established by Iowa Code chapter 455B, written notification shall be issued by the director stating that a permit is no longer required for the facility.

This rule is intended to implement Iowa Code section 455B.304.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—102.3(455B) Applications for permits.

102.3(1) *Application requirements for permits and renewals.* More information can be found in subrule 102.2(1).

102.3(2) *Time limit on submittal of information.*

a. *Sanitary disposal project permit applications.* If an application for a sanitary disposal project permit is found to be incomplete by the department, the applicant will be notified of that fact and of the specific deficiencies. Thirty days following such notification, the application may be returned by the department as incomplete without prejudice to the applicant's right to reapply. The applicant may be granted, upon request, an additional 30 days to complete the application.

b. *Applications for renewal or amendment of a sanitary disposal project.* If an application for a sanitary disposal project permit renewal or amendment is found to be incomplete by the department, the applicant will be notified of that fact and of the specific deficiencies. Thirty days following such notification, the application may be denied by the department.

This rule is intended to implement Iowa Code section 455B.304.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—102.4(455B) Preparation of plans. All plans and specifications submitted in the application for a sanitary disposal project permit or a developmental permit shall be prepared in conformance with Iowa Code chapter 114 and shall be submitted in triplicate.

567—102.5(455B) Construction and operation. All sanitary disposal projects shall be constructed and operated according to the plans and specifications as approved by the department and the terms of the permit. The approved plans and specifications shall constitute a term of the permit.

567—102.6(455B) Compliance with rule changes.

102.6(1) *Design and construction.* Sanitary disposal projects designed and constructed in accordance with rules in effect at the time of construction shall not be required to be redesigned or reconstructed due to subsequent rule changes unless the department finds that such facilities are causing pollution. Such facilities shall be brought into compliance with rules in effect at the time of reconstruction, enlarging, or otherwise modifying the sanitary disposal project, or at the time of permit renewal.

102.6(2) *Operation.* If any new rule conflicts with an operating procedure prescribed in the engineering plans or the permit of a sanitary disposal project, the operation shall conform with the new rule.

567—102.7(455B) Amendments. Sanitary disposal project permits, temporary permits, and developmental permits may be modified by the issuance of an amendment by the department, except as provided in 102.6(1).

567—102.8(455B) Transfer of title and permit. If title to an operational sanitary disposal project is transferred, and the transferee desires to continue operation of the project, the transferee shall apply in writing to the department within 30 days of the transfer for a transfer of the permit.

102.8(1) The department shall transfer the permit when it determines that the sanitary disposal project is in compliance with Iowa Code chapter 455B and these rules and the terms of the permit, and that the transferee possesses the equipment and personnel to operate the project in conformance with chapter 455B and these rules and the terms of the permit.

102.8(2) No permit is valid after 60 days following transfer of title, unless the permit has been transferred by the department to the new titleholder pursuant to this rule.

567—102.9(455B) Permit conditions. Any permit may be issued subject to conditions specified in writing which are necessary to ensure the sanitary disposal project can be constructed and operated in compliance with these rules.

567—102.10(455B) Effect of revocation. If a permit held by any public or private agency for a sanitary disposal project is revoked by the director, no new permit shall be issued to that agency for that disposal project for a period of one year from the date of revocation. This shall not prohibit the issuance of a permit for the disposal project to another public or private agency.

This rule is intended to implement Iowa Code section 455B.305.

567—102.11(455B) Inspection prior to start-up. The department shall be notified when the initial construction of a sanitary disposal project has been completed, in order that an inspection may be made to determine that the project is constructed as designed. No solid waste shall be accepted by a sanitary disposal project until that project has been inspected and approved by the department.

567—102.12(455B) Primary plan requirements for all sanitary disposal projects. Every application for any permit issued by the department shall include the following. In addition, every application shall include the particular information required by the chapter describing the type of project to be constructed.

102.12(1) The name, address and telephone number of:

- a. Owner of site where project will be located.
- b. Permit applicant.
- c. Official responsible for operation of project.
- d. Design engineer.
- e. Agency to be served by the project, if any.
- f. Responsible official of agency served, if any.

102.12(2) A legal description of the site.

102.12(3) A map or aerial photograph locating the boundaries of the site and identifying:

- a. North or other principal compass points.
- b. Zoning and land use within one-half mile.
- c. Haul routes to and from the site with load limits or other restrictions.
- d. Homes and buildings within one-half mile.
- e. Section lines or other legal boundaries.
- f. Any nearby runway used or planned to be used by turbojet or piston-type aircraft at FAA certificated airports.

102.12(4) Type, source, and expected volume or weight of waste to be handled per day, week or year.

102.12(5) An organizational chart.

102.12(6) A detailed description of the disposal process to be used.

102.12(7) A table listing the equipment to be used, its design capacities and expected loads.

102.12(8) A contingency plan detailing specific procedures to be followed in case of equipment breakdown, maintenance downtime, or fire in equipment or vehicles, including methods to be used to remove or dispose of accumulated waste.

102.12(9) Proof of the applicant's ownership of the site or legal entitlement to use the site for the disposal of solid waste for the term of the permit for which application is made.

102.12(10) Closure/postclosure plan. A closure/postclosure plan shall be submitted which:

- a. Details how and when the facility will be closed in accordance with applicable requirements.

b. Describes the proposed groundwater monitoring plan, leachate control system, and site inspection and maintenance activities necessary to comply with 567—Chapter 110.

c. States the name, address and telephone number of the person or office to serve as a contact with regard to the facility during the postclosure period.

d. The closure/postclosure plan shall be submitted at the time of the first permit renewal after enactment of this rule, but not less than 180 days prior to closure.

102.12(11) Such other information as may be required by the director.

This rule is intended to implement Iowa Code section 455B.305.

567—102.13(455B) Operating requirements for all sanitary disposal projects. Every application for any permit issued by the department shall detail the means by which the following operating requirements shall be complied with. All sanitary disposal projects shall be operated in conformance with these requirements.

102.13(1) Open burning shall be prohibited except when permitted by 567—Chapter 23. Any burning to be conducted at the site shall be at a location and separate and distinct from the operating area.

102.13(2) Litter shall be confined to the property on which the sanitary disposal project is located. At the conclusion of each day of operation, any litter strewn beyond the confines of the operating area shall be collected and stored in covered leakproof containers or properly disposed.

102.13(3) Scavenging shall be prohibited. Any salvaging to be conducted must be described in the permit application and all salvaged materials must be stored and removed from the sanitary disposal project site in conformance with the permit conditions.

102.13(4) Effective means shall be taken to control flies, other insects, rodents and other vermin.

102.13(5) Equipment designated in the plans and specifications or equivalent equipment shall be used to operate the site at all times.

102.13(6) The major internal roads shall be of all weather construction and maintained in good condition. Dust shall be controlled on internal roads.

102.13(7) Sites open to the public shall have a permanent sign posted at the site entrance specifying:

a. Name of the operation.

b. The site permit number.

c. The hours and days the site is open to the public.

d. The categories of waste which will be accepted for disposal or, as an alternative, identifies the categories of waste which are prohibited.

e. Telephone number of official responsible for the operation.

102.13(8) Free liquids or waste containing free liquids. No free liquids or waste containing free liquids shall be disposed in a sanitary landfill.

102.13(9) General closure requirements.

a. The owner or operator shall notify the department in writing at least 180 days prior to closure of the facility or suspension of operations.

b. Notice of closure shall be posted at least 180 days prior to closure at the facility indicating the date of closure and alternative solid waste management facilities. Notice of closure shall also be published at least 180 days prior to closure in a newspaper of local circulation. This notice shall include the date of closure and alternative solid waste management facilities.

c. Implementation of the closure/postclosure plan shall be completed within 90 days of the closure of the facility. The owner and an engineer registered in Iowa shall certify that the closure/postclosure plan has been implemented in compliance with the rules, the closure/postclosure plan and the permit.

d. Upon completion of closure activities, as-built plans shall be submitted showing changes from the original design plans, test results indicating compliance with final cover as applicable, waste removal, equipment decontamination, and other forms of documentation as required, to include a copy of the notation filed with the county recorder.

This rule is intended to implement Iowa Code section 455B.304.

567—102.14(455B) Emergency response and remedial action plans.

102.14(1) Purpose. The purpose of this rule is to implement Iowa Code section 455B.306(6) “d” by providing the criteria for developing a detailed emergency response and remedial action plan (ERRAP) for permitted sanitary disposal projects.

102.14(2) Applicability. The requirements of this rule apply to the owners or operators of all sanitary disposal projects that are permitted under 567—102.2(455B). Permitted project types include: municipal and industrial waste landfills; construction and demolition waste landfills; coal combustion residue landfills; waste storage facilities; waste processing facilities; recycling and material recovery facilities; transfer stations; composting facilities; incinerator facilities; regional collection centers; land application facilities; and any facility deemed necessary to have a project permit under sanitary disposal project definition. Centralized regional collection center ERRAP documents shall specifically address the ERRAP requirements for each of the regional collection center’s satellite facilities. This rule is not applicable to waste tire management facilities.

102.14(3) Submittal requirements.

a. The owner or operator of facilities that are subject to this rule and have been permitted prior to October 24, 2001, shall submit a complete detailed ERRAP that meets the requirements set forth in this rule no later than December 31, 2001.

b. Applications for a new permit after October 24, 2001, shall incorporate a complete detailed ERRAP that meets the requirements set forth in this rule.

c. An updated ERRAP that meets the requirements of this rule shall be submitted at the time of each permit renewal or permit reissuance application that is due after December 31, 2001.

d. An updated ERRAP shall be included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP.

e. Facilities that submitted an ERRAP meeting the requirements defined under Iowa Code section 455B.306(6) “d” by May 1, 2001, including regional collection centers that, prior to this date, have met the contingency plan submittal requirement described in 567—Chapter 211, and were approved by the department prior to October 24, 2001, are not required to submit an updated ERRAP that meets the requirements of this rule until the next permit renewal application due date after December 31, 2001.

f. Three sets of ERRAP documents shall be submitted for department approval.

102.14(4) Content. The content of ERRAP documents shall be concise and readily usable as a reference manual by facility managers and operators during emergency conditions. The ERRAP document content shall address at least the following primary issues in detail, unless project conditions render the specific issue as not applicable. The rationale for exclusion of any issue areas that are determined not to be applicable must be provided in either the body of the plan or as a supplement to facilitate department review. Additional emergency response and remedial action plan requirements unique to the facility shall be addressed, as applicable.

a. *Facility information.*

- (1) Permitted agency.
- (2) DNR permit number.
- (3) Facility description.
- (4) Responsible official and contact information.
- (5) Project location.
- (6) Site and environs map.

b. *Regulatory requirements.*

- (1) Iowa Code section 455B.306(6) “d” criteria citation.
- (2) Reference to provisions of the permit.

c. *Emergency conditions—response activities—remedial action.*

- (1) Failure of utilities.
 1. Short-term (48 hours or less).
 2. Long-term (over 48 hours).
- (2) Weather-related events.

1. Tornado.
2. Windstorms.
3. Intense rainstorms and erosion.
4. Lightning strikes.
5. Flooding.
6. Event and postevent conditions.
- (3) Fire and explosions.
 1. Waste materials.
 2. Buildings and site.
 3. Equipment.
 4. Fuels.
 5. Utilities.
 6. Facilities.
 7. Working area.
 8. Hot loads.
 9. Waste gases.
 10. Evacuation.
- (4) Regulated waste spills and releases.
 1. Waste materials.
 2. Leachate.
 3. Waste gases.
 4. Waste stockpiles and storage facilities.
 5. Waste transport systems.
 6. Litter and airborne particulates.
 7. Site drainage systems.
 8. Off-site releases.
- (5) Hazardous material spills and releases.
 1. Load check control points.
 2. Mixed waste deliveries.
 3. Fuels.
 4. Waste gases.
 5. Site drainage systems.
 6. Off-site releases.
- (6) Mass movement of land and waste.
 1. Earthquakes.
 2. Slope failure.
 3. Waste shifts.
 4. Waste subsidence.
- (7) Emergency and release notifications and reporting.
 1. Federal agencies.
 2. State agencies.
 3. County and city agencies.
 4. News media.
 5. Public and private facilities with special populations within five miles.
 6. Emergency response agencies and contact information.
 7. Reporting requirements and forms.
- (8) Emergency waste management procedures.
 1. Communications.
 2. Temporary discontinuation of services—short- and long-term.
 3. Facilities access and rerouting.
 4. Waste acceptance.
 5. Wastes in process.

- (9) Primary emergency equipment inventory.
 - 1. Major equipment.
 - 2. Fire hydrants and water sources.
 - 3. Off-site equipment resources.
- (10) Emergency aid.
 - 1. Responder contacts.
 - 2. Medical services.
 - 3. Contracts and agreements.
- (11) ERRAP training requirements.
 - 1. Training providers.
 - 2. Employee orientation.
 - 3. Annual training updates.
 - 4. Training completion and record keeping.
- (12) Reference tables, figures and maps.

567—102.15(455B) Solid waste incinerator operator certification. Solid waste incinerator operators shall be trained, tested, and certified by a department-approved certification program.

102.15(1) A solid waste incinerator operator shall be on duty during all hours of operation of a solid waste incinerator, consistent with the respective certification.

102.15(2) To become a certified operator, an individual shall complete a basic operator training course that has been approved by the department or alternative, equivalent training approved by the department and shall pass a departmental examination as specified by this rule. An operator certified by another state may have reciprocity subject to approval by the department.

102.15(3) A solid waste incinerator operator certification is valid from the date of issuance until June 30 of the following even-numbered year.

102.15(4) Basic operator training course. The required basic operator training course for a certified solid waste incinerator operator shall have at least 12 contact hours and shall address the following areas, at a minimum:

- a.* Description of types of wastes;
- b.* Incinerator design;
- c.* Interpreting and using engineering plans;
- d.* Incinerator operations;
- e.* Environmental monitoring;
- f.* Applicable laws and regulations;
- g.* Permitting processes;
- h.* Incinerator maintenance; and
- i.* Ash and residue disposal.

102.15(5) Alternative basic operator training must be approved by the department. It shall be the applicant's responsibility to submit any documentation the department may require to evaluate the equivalency of alternative training.

102.15(6) Fees.

- a.* The examination fee for each examination is \$20.
- b.* The initial certification fee is \$8 for each one-half year of a two-year period from the date of issuance to June 30 of the next even-numbered year.
- c.* The certification renewal fee is \$24.
- d.* The penalty fee is \$12.

102.15(7) Examinations.

- a.* The operator certification examinations will be based on the basic operator training course curriculum.
- b.* All persons wishing to take the examination required to become a certified operator of a solid waste incinerator shall complete the Operator Certification Examination Application, Form 542-1354. A listing of dates and locations of examinations is available from the department upon request. The application form requires the applicant to indicate the basic operator training course taken. Evidence of

training course completion must be submitted with the application for certification. The completed application and the application fee shall be sent to the Department of Natural Resources, 502 East 9th Street, Des Moines, Iowa 50319. Application for examination must be received by the department at least 30 days prior to the date of examination.

c. A properly completed application for examination shall be valid for one year from the date the application is approved by the department.

d. Upon failure of the first examination, the applicant may be reexamined at the next scheduled examination. Upon failure of the second examination, the applicant shall be required to wait a period of 180 days before taking a subsequent examination.

e. Upon each reexamination when a valid application is on file, the applicant shall submit to the department the examination fee at least ten days prior to the date of examination.

f. Failure to successfully complete the examination within one year from the date of approval of the application shall invalidate the application.

g. Completed examinations will be retained by the department for a period of one year, after which they will be destroyed.

h. Oral examinations may be given at the discretion of the department.

102.15(8) Certification.

a. All operators who passed the operator certification examination by July 1, 1991, are exempt from taking the required operator training course. Beginning July 1, 1991, all operators will be required to take the basic operator training course and pass the examination in order to become certified.

b. Application for certification must be received by the department within 30 days of the date the applicant receives notification of successful completion of the examination. All applications for certification shall be made on a form provided by the department and shall be accompanied by the certification fee.

c. Applications for certification by examination that are received more than 30 days but less than 60 days after notification of successful completion of the examination shall be accompanied by the certification fee and the penalty fee. Applicants who do not apply for certification within 60 days of notice of successful completion of the examination will not be certified on the basis of that examination.

d. For applicants who have been certified under other state mandatory certification programs, the equivalency of which has been previously reviewed and accepted by the department, certification without examination will be recommended.

e. For applicants who have been certified under voluntary certification programs in other states, certification will be considered. The applicant must have successfully completed a basic operator training course and an examination generally equivalent to the Iowa examination. The department may require the applicant to successfully complete the Iowa examination.

f. Applicants who seek Iowa certification pursuant to paragraph 102.15(8) “*d*” or 102.15(8) “*e*” shall submit an application for examination accompanied by a letter requesting certification pursuant to this subrule. Application for certification pursuant to this subrule shall be received by the department in accordance with paragraphs 102.15(8) “*b*” and 102.15(8) “*c*.”

102.15(9) All certificates shall expire every two years, on even-numbered years, and must be renewed every two years to maintain certification. The renewal application and fee are due prior to expiration of certification.

a. Late application for renewal of a certificate may be made provided that such late application shall be received by the department or postmarked within 30 days of the expiration of the certificate. Such late application shall be on forms provided by the department and accompanied by the penalty fee and the certification renewal fee.

b. If a certificate holder fails to apply for renewal within 30 days following expiration of the certificate, the right to renew the certificate automatically terminates. Certification may be allowed at any time following such termination, provided that the applicant successfully completes an examination. The applicant must then apply for certification in accordance with subrule 102.15(8).

c. An operator shall not continue to operate a solid waste incinerator after expiration of a certificate without renewal thereof.

d. Continuing education credits must be earned during the two-year certification period. All certified operators must earn ten contact hours per certificate during each two-year period. The two-year period will begin upon certification.

e. Only those operators fulfilling the continuing education requirements before the end of each two-year period will be allowed to renew their certificates. The certificates of operators not fulfilling the continuing education requirements shall be void upon expiration, unless an extension is granted.

f. All activities for which continuing education credit will be granted must be related to the subject matter of the particular certificate to which the credit is being applied.

g. The department may, in individual cases involving hardship or extenuating circumstances, grant an extension of time of up to three months within which the applicant may fulfill the minimum continuing education requirements. Hardship or extenuating circumstances include documented health-related confinement or other circumstances beyond the control of the certified operator that prevent attendance at the required activities. All requests for extensions must be made 60 days prior to expiration of certification.

h. The certified operator is responsible for notifying the department of the continuing education credits earned during the period. The continuing education credits earned during the period shall be shown on the application for renewal.

i. A certified operator shall be deemed to have complied with the continuing education requirements of this rule during periods that the operator serves honorably on active duty in the military service; or during periods that the operator is a resident of another state or district having a continuing education requirement for operators and meets all the requirements of that state or district for practice there; or during periods that the person is a government employee working as an operator and is assigned to duty outside of the United States; or during other periods of active practice and absence from the state approved by the department.

102.15(10) Discipline of certified operators.

a. Disciplinary action may be taken on any of the following grounds:

(1) Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified operator. Duties of certified operators include compliance with rules and permit conditions applicable to incinerator operation.

(2) Failure to submit required records of operation or other reports required under applicable permits or rules of the department, including failure to submit complete records or reports.

(3) Knowingly making any false statement, representation, or certification on any application, record, report, or document required to be maintained or submitted under any applicable permit or rule of the department.

b. Disciplinary sanctions allowable are as follows:

(1) Revocation of a certificate.

(2) Probation under specified conditions relevant to the specific grounds for disciplinary action. Additional education or training or reexamination may be required as a condition of probation.

c. The procedure for discipline is as follows:

(1) The department shall initiate disciplinary action. The commission may direct that the department investigate any alleged factual situation that may be grounds for disciplinary action under paragraph 102.15(10) "a" and report the results of the investigation to the commission.

(2) A disciplinary action may be prosecuted by the department.

(3) Written notice shall be given to an operator against whom disciplinary action is being considered. The notice shall state the informal and formal procedures available for determining the matter. The operator shall be given 20 days to present any relevant facts and indicate the operator's position in the matter and to indicate whether informal resolution of the matter may be reached.

(4) An operator who receives notice shall communicate verbally, in writing, or in person with the department, and efforts shall be made to clarify the respective positions of the operator and department.

(5) The applicant's failure to communicate facts and positions relevant to the matter by the required date may be considered when appropriate disciplinary action is determined.

(6) If agreement as to appropriate disciplinary sanction, if any, can be reached with the operator and the commission concurs, a written stipulation and settlement between the department and the operator shall

be entered into. The stipulation and settlement shall recite the basic facts and violations alleged, any facts brought forth by the operator, and the reasons for the particular sanctions imposed.

(7) If an agreement as to appropriate disciplinary action, if any, cannot be reached, the department may initiate formal hearing procedures. Notice and formal hearing shall be in accordance with 561—Chapter 7 related to contested and certain other cases pertaining to licensee discipline.

102.15(11) Upon revocation of a certificate, application for certification may be allowed after two years from the date of revocation. Any such applicant must successfully complete an examination and be certified in the same manner as a new applicant.

102.15(12) A temporary operator of a solid waste incinerator may be designated for a period of six months when an existing certified operator is no longer available to the facility. The facility must make application to the department, explain why a temporary certification is needed, identify the temporary operator, and identify the efforts that will be made to obtain a certified operator. A temporary operator designation shall not be approved for greater than a six-month period except for extenuating circumstances. In any event, not more than one six-month extension to the temporary operator designation may be granted. Approval of a temporary operator designation may be rescinded for cause as set forth in subrule 102.15(10).

This rule is intended to implement Iowa Code section 455B.304(12).

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—102.16(455B) Disruption and excavation of sanitary landfills or closed dumps. No person shall excavate, disrupt, or remove any deposited material from any active or discontinued sanitary landfill or closed dump without first having notified the department in writing.

102.16(1) Notification shall include an operational plan stating the area involved, lines and grades defining limits of excavation, estimated number of cubic yards of material to be excavated, sanitary disposal project where material is to be disposed, and estimated time required for excavation procedures.

102.16(2) An excavation shall be confined to an area consistent with the number of pieces of digging equipment and trucks used for haulage.

102.16(3) The disposal of all solid waste resulting from excavation shall be in conformity with Iowa Code chapter 455B and applicable solid or hazardous waste regulations.

This rule is intended to implement Iowa Code section 455B.304.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

These rules are intended to implement Iowa Code sections 455B.304 and 455B.305.

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CHAPTER 103
SANITARY LANDFILLS: COAL COMBUSTION RESIDUE

[Prior to 7/1/83, DEQ Ch 28]
[Prior to 12/3/86, Water, Air and Waste Management [900]]

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567—103.1(455B) Coal combustion residue landfills. The following are the minimum requirements for siting, designing, and operating a solid waste landfill accepting only coal combustion residue.

This chapter stands alone and is not affected by references in other rules, except for the variance provision in 567—101.2(455B). “Coal combustion residue” means any solid waste produced by the burning of coal, either by itself or in conjunction with natural gas or other carbon-based fuels. “Coal combustion residue” includes, but is not limited to, bottom ash, fly ash, slag and flue gas desulfurization system material generated by coal combustion and associated air pollution control equipment.

103.1(1) Site requirements.

a. The site cannot be a wetland, cannot be within a 100-year flood plain and cannot have any sinkholes or similar karst features.

b. No wastes shall be deposited within 300 feet of an inhabitable residence or a commercial enterprise, unless there is a written agreement with the property owner(s) allowing a lesser distance, or within 50 feet of the property boundary. The written agreement shall be filed with the county recorder for abstract of title purposes and a copy shall be submitted to the department.

c. All waste must be a minimum of 5 feet above the high groundwater table.

103.1(2) Permit application requirements. The application for a permit shall include the following:

a. A completed application Form 50.542-1542.

b. A copy of the letter from the waste management assistance division approving the comprehensive plan required by 567—101.5(455B).

c. Proof of legal entitlement to use the property as proposed.

d. A topographic map of the site and the adjacent area within 300 feet of the site, with contour intervals not exceeding 10 feet, that shows the location of existing improvements or alterations such as structures, wells, lakes, roads, drain tiles or similar items. The highest point of elevation on the site shall also be identified and given.

e. The results of a minimum of three soil borings for sites of ten acres or less with one additional boring for each additional three acres to determine the hydrogeologic conditions and establish the direction of groundwater flow throughout the site and the minimum depth to groundwater on the site.

f. An adequate number of representative groundwater sample results, minimum of three locations with one sample from each location, to fully characterize the groundwater quality at the site. The following are the analytical parameters that are required to characterize groundwater quality and establish a baseline for those parameters: arsenic, barium, beryllium, cobalt, copper, iron, lead, magnesium, manganese, selenium, zinc, chlorides, and sulfate. The analysis shall be for dissolved metals with filtering in the field.

g. Construction drawings and specifications of the improvements and alterations that are to take place on the site such as roads, structures, utilities, drainage ways, gates and fences.

h. A copy of the local siting approval required by Iowa Code section 455B.305A.

103.1(3) Design criteria.

a. The design of a coal combustion residue solid waste landfill shall contain a method for ensuring protection of the groundwater and surface water.

b. The design plan shall include a method of ash transportation that prevents blowing ash and a method for preventing blowing dust and air emissions when the ash is unloaded.

c. Surface runoff must be diverted from all active or closed areas, both during the active life of the facility and during the postclosure period.

d. The site must be secured with a fence and gate(s) to prevent unauthorized entry when the site is unattended.

e. The site must have all-weather access roads adequate to accommodate all delivery vehicles and operating equipment.

f. The site must be fenced and gated in a manner that will prevent unauthorized deposition of wastes at the site.

103.1(4) Operating requirements.

a. An operation plan shall be prepared and submitted to the appropriate department field office prior to initiating operations. The plan, at a minimum, shall include:

- (1) An identification of the area to be filled during the period for which a permit is being requested.
- (2) The method(s) that will be utilized to prevent illicit municipal or putrescible solid wastes from being deposited as a result of mixing with authorized waste brought to the site.
- (3) The frequency, extent and method of spreading and compacting the waste; the optimum layer thickness; and the size and slope of the operating face.
- (4) A description of the operating procedures that will be followed when wastes are brought to the site.

(5) If removal of waste from the landfill for beneficial reuse is intended, that activity should be addressed in the original operation plan. If the permit holder decides to remove waste after completion of the original operation plan, the plan must be amended prior to removing any waste.

b. After the waste is deposited, it must be treated as necessary to control fugitive dust that would leave the site and to control erosion that would impact operations in the active fill area. If the methods used do not adequately control dust and erosion, the department may require site-specific controls including a soil cover.

c. A minimum of one down gradient monitoring well must be installed within one year of initiating operations. Additional wells may be required when it is apparent that more than one potential contaminant pathway exists. Monitoring wells will normally be placed within 50 feet of the waste boundary.

d. Quarterly sampling of all monitoring wells and analysis for the parameters specified in paragraph 103.1(2) "f" shall commence within one year of initiating operations for the purpose of establishing the average baseline concentrations for each well. Annual sampling of all monitoring wells for the parameters specified in paragraph 103.1(2) "f" shall commence within one year of completing the quarterly baseline monitoring. Additional sampling or a site assessment may be required by the department when there is an exceedance of any primary or secondary Maximum Contaminant Level (MCL) or the Health Advisory Level (HAL) of the Drinking Water Standards and Health Advisories of the federal Environmental Protection Agency. When an MCL or HAL does not exist for a parameter and a sample analysis exceeds the average value for that parameter for the most recent two years of data, the department will require the collection and analysis of a sample for three consecutive months. If the average result of those sample analyses equals or exceeds the value that required the monthly samples to be collected, the department may require a site assessment.

e. A report of the groundwater monitoring results shall be submitted to the department by the end of the first year's operation and annually thereafter.

103.1(5) Closure/postclosure requirements.

a. The owner/operator shall submit a postclosure plan to the department 180 days prior to closure. The plan shall list the date of closure, the actions that will be taken to close the site, the final site contours and final cover design, and the parties responsible for postclosure maintenance.

b. The final cover shall consist of not less than two feet of compacted soil and one foot of uncompacted soil capable of sustaining a growth of common grasses.

c. The slope of the landfill area after final closure shall be not less than 3 percent or more than 25 percent.

d. A growth of common grasses shall be established on the final cover by the end of the first full growing season.

e. A minimum of one sample from each monitoring well shall be collected annually during the postclosure period and analyzed for the parameters specified in the permit. The results shall be included in the annual report.

f. After closure, an annual inspection of the site shall be conducted. Any differential settling, surface cracks, holes, erosion channels, or any interference with surface drainage shall be corrected by restoration to the original condition. A report on the findings and corrective actions taken shall be included in the

annual report. These postclosure actions are required for a minimum of ten years following closure. The department may extend the monitoring and reporting period if it appears that continued maintenance and monitoring are warranted.

103.1(6) *Permit renewal.* The term for a permit to operate a solid waste landfill accepting only coal combustion residue waste shall be ten years, and the permit shall be renewable for a similar term.

567—103.2(455B) Emergency response and remedial action plans.

103.2(1) *Purpose.* The purpose of this rule is to implement Iowa Code section 455B.306(6)“d” by providing the criteria for developing a detailed emergency response and remedial action plan (ERRAP) for permitted sanitary disposal projects.

103.2(2) *Applicability.* The requirements of this rule apply to the owners or operators of all sanitary landfills.

103.2(3) *Submittal requirements.*

a. The owner or operator of facilities that are subject to this rule and have been permitted prior to October 24, 2001, shall submit a complete detailed ERRAP that meets the requirements set forth in this rule no later than December 31, 2001.

b. Applications for a new permit after October 24, 2001, shall incorporate a complete detailed ERRAP that meets the requirements set forth in this rule.

c. An updated ERRAP that meets the requirements of this rule shall be submitted at the time of each permit renewal or permit reissuance application that is due after December 31, 2001.

d. An updated ERRAP shall be included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP.

e. Facilities that submitted an ERRAP meeting the requirements defined under Iowa Code section 455B.306(6)“d” by May 1, 2001, including regional collection centers that, prior to this date, have met the contingency plan submittal requirement described in 567—Chapter 211, and were approved by the department prior to October 24, 2001, are not required to submit an updated ERRAP that meets the requirements of this rule until the next permit renewal application due date after December 31, 2001.

f. Three sets of ERRAP documents shall be submitted for department approval.

103.2(4) *Content.* The content of ERRAP documents shall be concise and readily usable as a reference manual by facility managers and operators during emergency conditions. The ERRAP document content shall address at least the following primary issues in detail, unless project conditions render the specific issue as not applicable. The rationale for exclusion of any issue areas that are determined not to be applicable must be provided in either the body of the plan or as a supplement to facilitate department review. Additional emergency response and remedial action plan requirements unique to the facility shall be addressed, as applicable.

a. Facility information.

- (1) Permitted agency.
- (2) DNR permit number.
- (3) Facility description.
- (4) Responsible official and contact information.
- (5) Project location.
- (6) Site and environs map.

b. Regulatory requirements.

- (1) Iowa Code section 455B.306(6)“d” criteria citation.
- (2) Reference to provisions of the permit.

c. Emergency conditions—response activities—remedial action.

- (1) Failure of utilities.
 1. Short-term (48 hours or less).
 2. Long-term (over 48 hours).
- (2) Weather-related events.
 1. Tornado.
 2. Windstorms.

3. Intense rainstorms and erosion.
4. Lightning strikes.
5. Flooding.
6. Event and postevent conditions.
- (3) Fire and explosions.
 1. Waste materials.
 2. Buildings and site.
 3. Equipment.
 4. Fuels.
 5. Utilities.
 6. Facilities.
 7. Working area.
 8. Hot loads.
 9. Waste gases.
 10. Evacuation.
- (4) Regulated waste spills and releases.
 1. Waste materials.
 2. Leachate.
 3. Waste gases.
 4. Waste stockpiles and storage facilities.
 5. Waste transport systems.
 6. Litter and airborne particulates.
 7. Site drainage systems.
 8. Off-site releases.
- (5) Hazardous material spills and releases.
 1. Load check control points.
 2. Mixed waste deliveries.
 3. Fuels.
 4. Waste gases.
 5. Site drainage systems.
 6. Off-site releases.
- (6) Mass movement of land and waste.
 1. Earthquakes.
 2. Slope failure.
 3. Waste shifts.
 4. Waste subsidence.
- (7) Emergency and release notifications and reporting.
 1. Federal agencies.
 2. State agencies.
 3. County and city agencies.
 4. News media.
 5. Public and private facilities with special populations within five miles.
 6. Emergency response agencies and contact information.
 7. Reporting requirements and forms.
- (8) Emergency waste management procedures.
 1. Communications.
 2. Temporary discontinuation of services—short- and long-term.
 3. Facilities access and rerouting.
 4. Waste acceptance.
 5. Wastes in process.
- (9) Primary emergency equipment inventory.
 1. Major equipment.

2. Fire hydrants and water sources.
3. Off-site equipment resources.
- (10) Emergency aid.
 1. Responder contacts.
 2. Medical services.
 3. Contracts and agreements.
- (11) ERRAP training requirements.
 1. Training providers.
 2. Employee orientation.
 3. Annual training updates.
 4. Training completion and record keeping.
- (12) Reference tables, figures and maps.

567—103.3(455B) Coal combustion residue sanitary landfill financial assurance.

103.3(1) Purpose. The purpose of this rule is to implement Iowa Code sections 455B.304(8) and 455B.306(9) by providing the criteria for establishing financial assurance for closure, postclosure and corrective action at coal combustion residue sanitary landfills (CCR landfills).

103.3(2) Applicability. The requirements of this rule apply to all owners and operators of CCR landfills accepting waste as of October 31, 2007, except owners or operators that are state or federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States.

103.3(3) Financial assurance for closure. The owner or operator of a CCR landfill must establish financial assurance for closure in accordance with the criteria in this rule. The owner or operator must provide continuous coverage for closure until released from this requirement by demonstrating compliance with subrule 103.1(5). Proof of compliance pursuant to paragraphs 103.3(3) “a” to “e” must be submitted by the owner or operator yearly by April 1 and approved by the department.

a. The owner or operator shall submit the current version of department Form 542-8090, Sanitary Landfill Financial Assurance Report Form, which contains, but is not limited to, the amount of the financial assurance, the annual financial statement required by Iowa Code sections 455B.306(9) “e” and 455B.306(7) “c,” and the current balances of the closure and postclosure accounts at the time of submittal as required by Iowa Code section 455B.306(9) “b.”

b. The owner or operator shall submit a copy of the financial assurance instruments or the documents establishing the financial assurance instruments in an amount equal to or greater than the amount specified in subrule 103.3(8). Documentation for the mechanism(s) used to demonstrate financial assurance shall contain, at a minimum, the items required to be submitted as specified in paragraphs 103.3(6) “a” to “i.”

c. The owner or operator shall submit a detailed written estimate, in current dollars, certified by an Iowa-licensed professional engineer, of the cost of hiring a third party to close the CCR landfill in accordance with the closure/postclosure plan as required by subrule 103.1(5). Such estimate must be available at any time during the active life of the landfill.

(1) The cost estimate must equal the cost of closing the CCR landfill at any time during the permitted life of the facility when the extent and manner of its operation would make closure the most expensive.

(2) The costs contained in the third-party estimate for closure must be accurate and reasonable when compared to the cost estimates used by other similarly situated landfills in Iowa.

(3) During the active life of the CCR landfill, the owner or operator must annually adjust the closure cost estimate for inflation.

(4) The owner or operator must, annually or at the time of application for a permit amendment that increases closure costs, whichever occurs first, increase the closure cost estimate and the amount of financial assurance provided if changes to the closure plan or CCR landfill conditions increase the maximum cost of closure at any time during the remaining active life of the facility.

(5) The owner or operator may reduce the amount of financial assurance for closure if the most recent estimate of the maximum cost of closure at any time during the active life of the facility is less than the amount of financial assurance currently provided. Prior to the reduction, the owner or operator must submit to the department the justification for the reduction of the closure cost estimate and the updated

documentation required by paragraphs 103.3(3)“a” to “e” and receive department approval for the reduction. Approval or denial shall be issued within 30 days of receipt of the reduction request.

(6) The third-party estimate submitted to the department must include the site area subject to closure and account for at least the following factors determined by the department to be minimal necessary costs for closure:

1. Closure and postclosure plan document revisions;
2. Site preparation, earthwork and final grading;
3. Drainage control culverts, piping and structures;
4. Erosion control structures, sediment ponds and terraces;
5. Final cap construction;
6. Cap vegetation soil placement;
7. Cap seeding, mulching and fertilizing;
8. Monitoring well and piezometer modifications;
9. Leachate system cleanout and extraction well modifications;
10. Monitoring well installations and abandonments;
11. Facility modifications to effect closed status;
12. Engineering and technical services;
13. Legal, financial and administrative services; and
14. Closure compliance certifications and documentation.

d. For CCR landfills owned by local governments, the owner or operator shall submit to the department a copy of the owner’s or operator’s most recent annual audit report in the form prescribed by the office of the auditor of the state of Iowa.

e. Privately held CCR landfills shall submit an affidavit from the owner or operator indicating that a yearly review has been performed by a certified public accountant to determine whether the privately owned landfill is in compliance with this rule. The affidavit shall state the name of the certified public accountant, the dates and conclusions of the review, and the steps taken to rectify any deficiencies identified by the accountant.

103.3(4) *Financial assurance for postclosure.* The owner or operator of a CCR landfill must establish financial assurance for the costs of postclosure in accordance with the criteria in this rule. The owner or operator must provide continuous coverage for postclosure until released from this requirement by demonstrating compliance with the closure/postclosure plan and the closure permit. Proof of compliance pursuant to paragraphs 103.3(4)“a” to “e” must be submitted by the owner or operator yearly by April 1 and approved by the department.

a. The owner or operator shall submit the current version of department Form 542-8090, Sanitary Landfill Financial Assurance Report Form, which contains, but is not limited to, the amount of the financial assurance, the annual financial statement required by Iowa Code sections 455B.306(9)“e” and 455B.306(7)“c,” and the current balances of the closure and postclosure accounts required by Iowa Code section 455B.306(9)“b.”

b. The owner or operator shall submit a copy of the documents establishing a financial assurance instrument in an amount equal to or greater than the amount specified in subrule 103.3(8). Documentation for the mechanism(s) used to demonstrate financial assurance shall contain, at a minimum, the items required to be submitted as specified in paragraphs 103.3(6)“a” to “i.”

c. The owner or operator shall submit a detailed written estimate, in current dollars, certified by an Iowa-licensed professional engineer, of the cost of hiring a third party to conduct postclosure for the CCR landfill in compliance with the closure/postclosure plan developed pursuant to subrule 103.1(5). The cost estimate must account for the total cost of conducting postclosure, as described in the plan, for the entire postclosure period.

(1) The cost estimate for postclosure must be based on the most expensive costs of postclosure during the entire postclosure period.

(2) The costs contained in the third-party estimate for postclosure must be accurate and reasonable when compared to the cost estimates used by other similarly situated landfills in Iowa.

(3) During the active life of the CCR landfill and during the postclosure period, the owner or operator must annually adjust the postclosure cost estimate for inflation.

(4) The owner or operator must, annually or at the time of application for a permit amendment that increases postclosure costs, whichever occurs first, increase the estimate and the amount of financial assurance provided if changes in the postclosure plan or CCR landfill conditions increase the maximum cost of postclosure.

(5) The owner or operator may reduce the amount of financial assurance for postclosure if the most recent estimate of the maximum cost of postclosure beginning at any time during the active life of the facility is less than the amount of financial assurance currently provided. Prior to the reduction, the owner or operator must submit to the department the justification for the reduction of the postclosure cost estimate and the updated documentation required by paragraphs 103.3(4)“a” to “e” and must receive department approval for the reduction. Approval or denial shall be issued within 30 days of receipt of the reduction request.

(6) The third-party estimate submitted to the department must include the site area subject to postclosure and account for at least the following factors determined by the department to be minimal necessary costs for postclosure:

1. General site facilities, access roads and fencing maintenance;
2. Cap and vegetative cover maintenance;
3. Drainage and erosion control systems maintenance;
4. Groundwater to waste separation systems maintenance;
5. Groundwater and surface water monitoring systems maintenance;
6. Groundwater and surface water quality monitoring and reports;
7. Groundwater monitoring systems performance evaluations and reports;
8. Leachate control systems maintenance;
9. Leachate management, transportation and disposal;
10. Leachate control systems performance evaluations and reports;
11. Facility inspections and reports;
12. Engineering and technical services;
13. Legal, financial and administrative services; and
14. Financial assurance, accounting, audits and reports.

d. For CCR landfills owned by local governments, the owner or operator shall submit to the department a copy of the owner's or operator's most recent annual audit report in the form prescribed by the office of the auditor of the state of Iowa.

e. Privately held CCR landfills shall submit an affidavit from the owner or operator indicating that a yearly review has been performed by a certified public accountant to determine whether the privately owned landfill is in compliance with this rule. The affidavit shall state the name of the certified public accountant, the dates and conclusions of the review, and the steps taken to rectify any deficiencies identified by the accountant.

103.3(5) *Financial assurance for corrective action.*

a. An owner or operator required to undertake corrective action must have a detailed written estimate, in current dollars, prepared by an Iowa-licensed professional engineer, of the cost of hiring a third party to perform the required corrective action. The estimate must account for the total costs of the activities described in the approved corrective action plan for the entire corrective action period. The owner or operator must submit to the department the estimate and financial assurance documentation within 30 days of department approval of the corrective action plan.

(1) The owner or operator must annually adjust the estimate for inflation until the corrective action plan is completed.

(2) The owner or operator must increase the cost estimate and the amount of financial assurance provided if changes in the corrective action plan or CCR landfill conditions increase the maximum cost of corrective action.

(3) The owner or operator may reduce the amount of the cost estimate and the amount of financial assurance provided if the estimate exceeds the maximum remaining costs of the remaining corrective

action. The owner or operator must submit to the department the justification for the reduction of the cost estimate and documentation of financial assurance.

b. The owner or operator of a CCR landfill required to undertake a corrective action plan must establish financial assurance for the most recent corrective action plan by one of the mechanisms prescribed in subrule 103.3(6). The owner or operator must provide continuous coverage for corrective action until released from financial assurance requirements by demonstrating compliance with the following:

(1) Upon completion of the remedy, the owner or operator must submit to the department a certification of compliance with the approved corrective action plan. The certification must be signed by the owner or operator and by an Iowa-licensed professional engineer.

(2) Upon department approval of completion of the corrective action remedy, the owner or operator shall be released from the requirements for financial assurance for corrective action.

103.3(6) Allowable financial assurance mechanisms. The mechanisms used to demonstrate financial assurance as required by Iowa Code section 455B.306(9) “a” must ensure that the funds necessary to meet the costs of closure, postclosure, and corrective action for known releases will be available whenever the funds are needed. Owners or operators must choose from options in paragraphs 103.3(6) “a” to “i.”

a. Trust fund.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action, whichever is applicable, by establishing a trust fund which conforms to the requirements of this subrule. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. A copy of the trust agreement must be submitted pursuant to subrules 103.3(3), 103.3(4), and 103.3(5) and placed in the facility’s official files.

(2) Payments into the trust fund must be made annually by the owner or operator over ten years or over the remaining life of the CCR landfill, whichever is shorter, in the case of a trust fund for closure or postclosure; or over one-half of the estimated length of the corrective action plan in the case of a response to a known release. This period is referred to as the pay-in period.

(3) For a trust fund used to demonstrate financial assurance for closure and postclosure, the first payment into the fund must be at least equal to the amount specified in subrule 103.3(8) for closure or postclosure divided by the number of years in the pay-in period as defined in subparagraph 103.3(6) “a”(2). The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{CE} - \text{CB}}{\text{Y}}$$

where CE is the amount specified in 103.3(8) for closure or postclosure (updated for inflation or other changes), CB is the current balance of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund must be at least equal to one-half of the current cost estimate for corrective action divided by the number of years in the corrective action pay-in period as defined in subparagraph 103.3(6) “a”(2). The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{RB} - \text{CV}}{\text{Y}}$$

where RB is the most recent estimate of the required trust fund balance for corrective action, which is the total cost that will be incurred during the second half of the corrective action period, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(5) The initial payment into the trust fund must be made before the initial receipt of waste or within 30 days of close of the first fiscal year that begins after October 31, 2007, in the case of existing facilities; before the cancellation of an alternative financial assurance mechanism in the case of closure and postclosure; or no later than 120 days after the corrective action remedy has been approved by the department.

(6) The owner or operator or another person authorized to conduct closure, postclosure, or corrective action activities may request reimbursement from the trustee for these expenditures, including partial closure, as the expenditures are incurred. Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure, postclosure, or corrective action and if justification and documentation of the costs are placed in the operating record. The owner or operator must submit to the department documentation of the justification for reimbursement and verification that reimbursement has been received.

(7) The trust fund may be terminated by the owner or operator only if the owner or operator substitutes alternative financial assurance as specified in this rule or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

(8) After the pay-in period has been completed, the trust fund shall be adjusted annually to correct any deficiency of the fund with respect to the adjusted cost estimate and may be adjusted annually should the balance in the fund exceed the adjusted cost estimate.

b. Surety bond guaranteeing payment or performance.

(1) An owner or operator may demonstrate financial assurance for closure or postclosure by obtaining a payment or performance surety bond which conforms to the requirements of this subrule. An owner or operator may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of this subrule. The bond must be effective before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure; or no later than 120 days after the corrective action remedy has been approved by the department. The owner or operator must submit a copy of the bond to the department and keep a copy in the facility's official files. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. Department of the Treasury. The state shall not be considered a party to the surety bond.

(2) The penal sum of the bond must be in an amount at least equal to the amount specified in subrule 103.3(9) for closure and postclosure or corrective action, whichever is applicable.

(3) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond and also upon notice from the department pursuant to subparagraph 103.3(6)"b"(6).

(4) The owner or operator must establish a standby trust fund. The standby trust fund must meet the requirements of paragraph 103.3(6)"a" except the requirements for initial payment and subsequent annual payments specified in subparagraphs 103.3(6)"a"(2) to (5).

(5) Payments made under the terms of the bond will be deposited by the surety directly into the standby trust fund. Payments from the trust fund must be approved by the trustee and the department.

(6) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice from the surety of withdrawal of the cancellation, or proof of a deposit into the standby trust fund of a sum equal to the amount of the bond. If the owner or operator has not complied with this subparagraph within the 60-day time period, this shall constitute a failure to perform, and the department shall notify the surety, prior to the expiration of the 120-day notice period, that such a failure has occurred.

(7) The bond must be conditioned upon faithful performance by the owner or operator of all closure, postclosure, or corrective action requirements of the Code of Iowa and this rule. A failure to comply with subparagraph 103.3(6)"b"(6) shall also constitute a failure to perform under the terms of the bond.

(8) Liability under the bond shall be for the duration of the operation and the closure and postclosure periods.

(9) The owner or operator may cancel the bond only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

c. Letter of credit.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action, whichever is applicable, by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph. The letter of credit must be effective before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure; or no later than 120 days after the corrective action plan is approved by the department. The owner or operator must submit to the department a copy of the letter of credit and place a copy in the facility's official files. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the facility and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the facility's files.

(3) The letter of credit must be irrevocable and must be issued for a period of at least one year in an amount at least equal to the amount specified in subrule 103.3(8) for closure, postclosure, or corrective action, whichever is applicable. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into a standby trust fund established pursuant to paragraph 103.3(6) "a." If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the standby trust fund established by the owner or operator. The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

(4) The owner or operator may cancel the letter of credit only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

d. Insurance.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action by obtaining insurance which conforms to the requirements of this paragraph. The insurance must be effective before the initial receipt of waste or prior to cancellation of an alternative financial assurance, in the case of closure and postclosure; or no later than 120 days after the corrective action plan has been approved by the department. At a minimum, the insurer must be licensed to transact the business of insurance or be eligible to provide insurance as an excess or surplus lines insurer in one or more states. The owner or operator must submit to the department a copy of the insurance policy and retain a copy in the facility's official files.

(2) The closure or postclosure insurance policy must guarantee that funds will be available to close the CCR landfill whenever final closure occurs or to provide postclosure for the CCR landfill whenever the postclosure period begins, whichever is applicable. The policy must also guarantee that once closure or postclosure begins, the insurer will be responsible for the paying out of funds to the owner or operator or other person authorized to conduct closure or postclosure, up to an amount equal to the face amount of the policy.

(3) The insurance policy must be issued for a face amount at least equal to the amount specified in subrule 103.3(8) for closure, postclosure, or corrective action, whichever is applicable. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(4) An owner or operator or another person authorized to conduct closure or postclosure may receive reimbursements for closure or postclosure expenditures, including partial closure, as applicable. Requests for reimbursement will be granted by the insurer only if the remaining value of the policy is sufficient to cover the remaining costs of closure or postclosure, and if justification and documentation of the cost are

placed in the operating record. The owner or operator must submit to the department documentation of the justification for reimbursement and verification that the reimbursement has been received.

(5) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided that such consent is not unreasonably refused.

(6) The insurance policy must provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may cancel the policy by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice from the insurer of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the insurance coverage into a standby trust fund established pursuant to paragraph 103.3(6) "a." If the owner or operator has not complied with this subrule within the 60-day time period, this shall constitute a failure to perform and shall be a covered event pursuant to the terms of the insurance policy. A failure by the owner or operator to comply with this subrule within the 60-day period shall make the insurer liable for the closure and postclosure of the covered facility up to the amount of the policy limits, which shall be equal to the most recently submitted cost estimates.

(7) For insurance policies providing coverage for postclosure, commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. Such increase must be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Department of the Treasury for 26-week treasury securities.

(8) The owner or operator may cancel the insurance only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

e. Corporate financial test. An owner or operator that satisfies the requirements of this paragraph may demonstrate financial assurance up to the amount specified below:

(1) Financial component. The owner or operator must satisfy the requirements of numbered paragraphs 103.3(6) "e"(1) "1," "2" and "3" to meet the financial component of the corporate financial test.

1. The owner or operator must satisfy one of the following three conditions:

- A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor's or Aaa, Aa, A, or Baa as issued by Moody's; or
- A ratio of less than 1.5 comparing total liabilities to net worth (net worth calculations may not include future permitted capacity of the subject landfill as an asset); or
- A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities;

2. The tangible net worth, excluding future permitted capacity of the subject landfill, of the owner or operator must be greater than:

- The sum of the current closure, postclosure, and corrective action cost estimates and any other environmental obligations, including guarantees, covered by this financial test plus \$10 million except as provided in the second bulleted paragraph of numbered paragraph 103.3(6) "e"(1) "2"; or

- Net worth of \$10 million, excluding future permitted capacity of the subject landfill, plus the amount of any guarantees that have not been recognized as liabilities on the financial statements, provided that all of the current closure, postclosure, and corrective action costs and any other environmental obligations covered by a financial test are recognized as liabilities on the owner's or operator's audited financial statements, and are subject to the approval of the department; and

3. The owner or operator must have, located in the United States, assets, excluding future permitted capacity of the subject landfill, amounting to at least the sum of current closure, postclosure, and corrective action cost estimates and any other environmental obligations covered by a financial test as described in subparagraph 103.3(6) "e"(5).

(2) Record-keeping and reporting requirements. The owner or operator must submit the following records to the department and place a copy in the facility's official files prior to the initial receipt of solid waste or cancellation of an alternative financial assurance instrument, in the case of closure and postclosure; or no later than 120 days after the corrective action plan has been approved by the department:

1. A letter signed by a certified public accountant and based upon a certified audit that:

- Lists all the current cost estimates covered by a financial test including, but not limited to, cost estimates required by subrules 103.3(3) to 103.3(5); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40 CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and

- Provides evidence demonstrating that the owner or operator meets the conditions of subparagraph 103.3(6) "e"(1).

2. A copy of the independent certified public accountant's unqualified opinion of the owner's or operator's financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner's or operator's financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this mechanism. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the corporate financial test, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

3. If the certified public accountant's letter providing evidence of financial assurance includes financial data which shows that the owner or operator satisfies subparagraph 103.3(6) "e"(1) but which differs from data in the audited financial statements referred to in numbered paragraph 103.3(6) "e"(2) "2," then a special report from the owner's or operator's independent certified public accountant to the owner or operator is required. The special report shall be based upon an agreed-upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the certified public accountant's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

4. If the certified public accountant's letter provides a demonstration that the owner or operator has assured for environmental obligations as provided in the second bulleted paragraph of numbered paragraph 103.3(6) "e"(2) "1," then the letter shall include a report from the independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements and that documents how these obligations have been measured and reported and verifies that the tangible net worth of the owner or operator is at least \$10 million plus the amount of any guarantees provided.

(3) The owner or operator may cease the submission of the information required by paragraph 103.3(6) "e" only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

(4) The department may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subparagraph 103.3(6) "e"(1), require the owner or operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in subparagraph 103.3(6) "e"(2). If the department finds that the owner or operator no longer meets the requirements of subparagraph 103.3(6) "e"(1), the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

(5) Calculation of costs to be assured. When calculating the current cost estimates for closure, postclosure, corrective action, or the sum of the combination of such costs to be covered, and any other environmental obligations assured by a financial test referred to in paragraph 103.3(6) "e," the owner or operator must include cost estimates required for subrules 103.3(3) to 103.3(5); cost estimates for municipal solid waste management facilities pursuant to 40 CFR Section 258.74; and cost estimates

required for the following environmental obligations, if the owner or operator assures those environmental obligations through a financial test: obligations associated with UIC facilities under 40 CFR Part 144, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265.

f. Local government financial test. An owner or operator that satisfies the requirements of this paragraph may demonstrate financial assurance up to the amount specified below:

(1) Financial component.

1. The owner or operator must satisfy one of the following requirements:

- If the owner or operator has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the owner or operator must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard & Poor's, on all such general obligation bonds; or

- The owner or operator must satisfy both of the following financial ratios based on the owner's or operator's most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

2. The owner or operator must prepare its financial statements in conformity with generally accepted accounting principles or other comprehensive basis of accounting and have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa

3. A local government is not eligible to assure its obligations in paragraph 103.3(6) "f" if it:

- Is currently in default on any outstanding general obligation bonds; or
- Has any outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard & Poor's; or

- Operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or

- Receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement as required under numbered paragraph 103.3(6) "f"(1)"2." A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism.

4. The following terms used in this paragraph are defined as follows:

"Cash plus marketable securities" means all the cash plus marketable securities held by the local government on the last day of a fiscal year, excluding cash and marketable securities designated to satisfy past obligations such as pensions.

"Debt service" means the amount of principal and interest due on a loan in a given time period, typically the current year.

"Deficit" means total annual revenues minus total annual expenditures.

"Total expenditures" means all expenditures, excluding capital outlays and debt repayment.

"Total revenues" means revenues from all taxes and fees, excluding revenue from funds managed by local government on behalf of a specific third party, and does not include the proceeds from borrowing or asset sales.

(2) Public notice component. The local government owner or operator must include disclosure of the closure and postclosure costs assured through the financial test in its next annual audit report prior to the initial receipt of waste at the facility or prior to cancellation of an alternative financial assurance mechanism, whichever is later. A reference to corrective action costs must be placed in the next annual audit report after the corrective action plan is approved by the department. For the first year the financial test is used to assure costs at a particular facility, the reference may instead be placed in the facility's official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure and postclosure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(3) Record-keeping and reporting requirements.

1. The local government owner or operator must submit to the department the following items:
 - A letter signed by the local government's chief financial officer that lists all the current cost estimates covered by a financial test, as described in subparagraph 103.3(6) "f"(4); that provides evidence and certifies that the local government meets the conditions of numbered paragraphs 103.3(6) "f"(1)"1," "2," and "3"; and that certifies that the local government meets the conditions of subparagraphs 103.3(6) "f"(2) and (4); and
 - The local government's annual financial report indicating compliance with the financial ratios required by numbered paragraph 103.3(6) "f"(1)"1," second bulleted paragraph, if applicable, and the requirements of numbered paragraph 103.3(6) "f"(1)"2" and the third and fourth bulleted paragraphs of numbered paragraph 103.3(6) "f"(1)"3" and also indicating that the requirements of Governmental Accounting Standards Board Statement 18 have been met.
 2. The items required in numbered paragraph 103.3(6) "f"(3)"1" must be submitted to the department and placed in the facility's official files prior to the receipt of waste or prior to the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure; or, in the case of corrective action, not later than 120 days after the corrective action plan is approved by the department.
 3. After the initial submission of the required items and their placement in the facility's official files, the local government owner or operator must update the information and place the updated information in the facility's official files within 180 days following the close of the owner's or operator's fiscal year.
 4. The owner or operator may cease the submission of the information required by paragraph 103.3(6) "f" only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.
 5. A local government must satisfy the requirements of the financial test at the close of each fiscal year. If the local government owner or operator no longer meets the requirements of the local government financial test, the local government must, within 180 days following the close of the owner's or operator's fiscal year, obtain alternative financial assurance that meets the requirements of this rule, place the required submissions for that assurance in the operating record, and notify the department that the owner or operator no longer meets the criteria of the financial test and that alternative financial assurance has been obtained.
 6. The department, based on a reasonable belief that the local government owner or operator may no longer meet the requirements of the local government financial test, may require additional reports of financial conditions from the local government. If the department finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of the local government financial test, the local government must provide alternative financial assurance in accordance with this rule
- (4) Calculation of costs to be assured. The portion of the closure, postclosure, and corrective action costs which an owner or operator may assure under this paragraph is determined as follows:
1. If the local government owner or operator does not assure other environmental obligations through a financial test, the owner or operator may assure closure, postclosure, and corrective action costs that equal up to 43 percent of the local government's total annual revenue.
 2. If the local government assures other environmental obligations through a financial test, including those associated with UIC facilities under 40 CFR Section 144.62, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, the owner or operator must add those costs to the closure, postclosure, and corrective action costs it seeks to assure under this paragraph. The total that may be assured must not exceed 43 percent of the local government's total annual revenue.
 3. The owner or operator must obtain an alternative financial assurance instrument for those costs that exceed the limits set in numbered paragraphs 103.3(6) "f"(4)"1" and "2."
- g. *Corporate guarantee.*
- (1) An owner or operator may meet the requirements of this paragraph by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraph 103.3(6) "e" and must comply with the

terms of the guarantee. A certified copy of the guarantee must be placed in the facility's operating record along with copies of the letter from a certified public accountant and the accountant's opinions. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter from the certified public accountant must describe the value received in consideration of the guarantee. If the guarantor is an owner or operator with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee.

(2) The guarantee must be effective and all required submissions made to the department prior to the initial receipt of waste or before cancellation of an alternative financial mechanism, in the case of closure and postclosure; or, in the case of corrective action, no later than 120 days after the corrective action plan has been approved by the department.

(3) The terms of the guarantee must provide that:

1. If the owner or operator fails to perform closure, postclosure, or corrective action of a facility covered by the guarantee, or fails to obtain alternative financial assurance within 90 days of notice of intent to cancel pursuant to numbered paragraphs 103.3(6) "g"(3)"2" and "3," the guarantor will:

- Perform, or pay a third party to perform, closure, postclosure, or corrective action as required (performance guarantee); or

- Establish a fully funded trust fund as specified in paragraph 103.3(6) "a" in the name of the owner or operator (payment guarantee); or

- Obtain alternative financial assurance as required by numbered paragraph 103.3(6) "g"(3)"3."

2. The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements of this rule unless the guarantor sends prior notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts

3. If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the department, provide to the department adequate proof of alternative financial assurance, notice from the guarantor of withdrawal of the cancellation, or proof of the establishment of a fully funded trust fund pursuant to paragraph 103.3(6) "a." If the owner or operator fails to comply with the provisions of this numbered paragraph within the 90-day period, the guarantor must provide that alternative financial assurance prior to cancellation of the corporate guarantee.

(4) If a corporate guarantor no longer meets the requirements of paragraph 103.3(6) "e," the owner or operator must, within 90 days, obtain alternative financial assurance and submit proof of alternative financial assurance to the department. If the owner or operator fails to provide alternative financial assurance within the 90-day period, the guarantor must provide that alternative financial assurance within the next 30 days.

(5) The owner or operator is no longer required to meet the requirements of paragraph 103.3(6) "g" upon the submission to the department of proof of the substitution of alternative financial assurance or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

h. Local government guarantee. An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E. The guarantor must meet the requirements of the local government financial test in paragraph 103.3(6) "f" and must comply with the terms of a written guarantee.

(1) Terms of the written guarantee. The guarantee must be effective before the initial receipt of waste or before the cancellation of alternative financial assurance, in the case of closure and postclosure; or no later than 120 days after the corrective action plan is approved by the department. The guarantee must provide that:

1. If the owner or operator fails to perform closure, postclosure, or corrective action of a facility covered by the guarantee or fails to obtain alternative financial assurance within 90 days of notice of intent to cancel pursuant to numbered paragraphs 103.3(6) "h"(1)"2" and "3," the guarantor will:

- Perform, or pay a third party to perform, closure, postclosure, or corrective action as required; or
- Establish a fully funded trust fund as specified in paragraph 103.3(6) “a” in the name of the owner or operator; or

- Obtain alternative financial assurance as required by numbered paragraph 103.3(6) “h”(1)“3.”

2. The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements of this rule unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts.

3. If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the department, provide to the department adequate proof of alternative financial assurance, notice from the guarantor of withdrawal of the cancellation, or proof of the establishment of a fully funded trust fund pursuant to paragraph 103.3(6) “a.” If the owner or operator fails to comply with the provisions of this numbered paragraph within the 90-day period, the guarantor must provide that alternative financial assurance prior to cancellation of the guarantee.

(2) Record-keeping and reporting requirements.

1. The owner or operator must submit to the department a certified copy of the guarantee along with the items required under subparagraph 103.3(6) “f”(3) and place a copy in the facility’s official files before the initial receipt of waste or before cancellation of alternative financial assurance, whichever is later, in the case of closure and postclosure; or no later than 120 days after the corrective action plan has been approved by the department.

2. The owner or operator shall no longer be required to submit the items specified in numbered paragraph 103.3(6) “h”(2)“1” when proof of alternative financial assurance has been submitted to the department or the owner or operator is no longer required to provide financial assurance pursuant to this rule.

3. If a local government guarantor no longer meets the requirements of paragraph 103.3(6) “f,” the owner or operator must, within the 90-day period, submit to the department proof of alternative financial assurance. If the owner or operator fails to obtain alternative financial assurance within the 90-day period, the guarantor must provide that alternative financial assurance within the next 30 days.

i. *Local government dedicated fund.* The owner or operator of a publicly owned CCR landfill or a local government serving as a guarantor may demonstrate financial assurance for closure, postclosure, or corrective action, whichever is applicable, by establishing a dedicated fund or account that conforms to the requirements of this paragraph. A dedicated fund will be considered eligible if it complies with subparagraph 103.3(6) “i”(1) or (2) below, and all other provisions of this paragraph, and if documentation of this compliance has been submitted to the department.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, or order to pay for closure, postclosure, or corrective action costs that arise from the operation of the CCR landfill and shall be funded for the full amount of coverage or funded for part of the required amount of coverage and used in combination with another mechanism(s) that provides the remaining coverage.

(2) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, or order as a reserve fund and shall be funded for no less than the full amount of coverage or funded for part of the required amount of coverage and used in combination with another mechanism(s) that provides the remaining coverage.

(3) Payments into the dedicated fund must be made annually by the owner or operator for ten years or over the permitted life of the CCR landfill, whichever is shorter, in the case of a dedicated fund for closure or postclosure; or over one-half of the estimated length of an approved corrective action plan in the case of a response to a known release. This is referred to as the pay-in period. The initial payment into the dedicated fund must be made before the initial receipt of waste in the case of closure and postclosure or no later than 120 days after the corrective action plan has been approved by the department.

(4) For a dedicated fund used to demonstrate financial assurance for closure and postclosure, the first payment into the dedicated fund must be at least equal to the amount specified in subrule 103.3(8), divided

by the number of years in the pay-in period as defined in paragraph 103.3(6) “i.” The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{CE} - \text{CB}}{\text{Y}}$$

where CE is the total required financial assurance for the owner or operator, CB is the current balance of the fund, and Y is the number of years remaining in the pay-in period.

(5) For a dedicated fund used to demonstrate financial assurance for corrective action, the first payment into the dedicated fund must be at least one-half of the current cost estimate, divided by the number of years in the corrective action pay-in period as defined in paragraph 103.3(6) “i.” The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{RB} - \text{CF}}{\text{Y}}$$

where RB is the most recent estimate of the required dedicated fund balance, which is the total cost that will be incurred during the second half of the corrective action period, CF is the current amount in the dedicated fund, and Y is the number of years remaining in the pay-in period.

(6) The initial payment into the dedicated fund must be made before the initial receipt of waste or within 30 days of close of the first fiscal year that begins after October 31, 2007, in the case of existing facilities; before the cancellation of an alternative financial assurance mechanism in the case of closure and postclosure; or no later than 120 days after the corrective action remedy has been approved by the department.

(7) After the pay-in period has been completed, the dedicated fund shall be adjusted annually to correct any deficiency of the fund with respect to the adjusted cost estimate and may be adjusted annually should the balance in the fund exceed the adjusted cost estimate.

103.3(7) General requirements.

a. Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this rule by establishing more than one financial mechanism per facility. The mechanisms must be a combination of those mechanisms outlined in this rule and must provide financial assurance for an amount at least equal to the current cost estimate for closure, postclosure, or corrective action, whichever is applicable. The financial test and a guarantee provided by a corporate parent, sibling or grandparent shall not be combined if the financial statements of the two entities are consolidated.

b. Use of one mechanism for multiple facilities. An owner or operator may satisfy the requirements of this rule for multiple CCR landfills by the use of one mechanism if the owner or operator ensures that the mechanism provides financial assurance for an amount at least equal to the current cost estimates for closure, postclosure, or corrective action, whichever is applicable, for all CCR landfills covered.

c. Criteria. The language of the financial assurance mechanisms listed in this rule must ensure that the instruments satisfy the following criteria:

(1) The financial assurance mechanisms must ensure that the amount of funds assured is sufficient to cover the costs of closure, postclosure, or corrective action for known releases, whichever is applicable;

(2) The financial assurance mechanisms must ensure that funds will be available in a timely fashion when needed;

(3) The financial assurance mechanisms must be obtained by the owner or operator prior to the initial receipt of solid waste and no later than 120 days after the corrective action remedy has been approved by the department until the owner or operator is released from the financial assurance requirements; and

(4) The financial assurance mechanisms must be legally valid, binding, and enforceable under Iowa law.

d. No permit shall be issued by the department pursuant to Iowa Code section 455B.305 unless the applicant has demonstrated compliance with rule 103.3(455B).

103.3(8) Amount of required financial assurance. A financial assurance mechanism established pursuant to subrule 103.3(6) shall be in the amount of the third-party cost estimates required by subrules 103.3(3), 103.3(4), and 103.3(5) except that the amount of the financial assurance may be reduced by the

sum of the cash balance in a trust fund or local government dedicated fund plus the current value of investments held by said trust fund or local government dedicated fund if invested in one or more of the investments listed in Iowa Code section 12B.10(5).

These rules are intended to implement Iowa Code section 455B.304.

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CHAPTER 104
SANITARY DISPOSAL PROJECTS WITH PROCESSING FACILITIES

[Prior to 7/1/83, DEQ Ch 29]

[Prior to 12/3/86, Water, Air and Waste Management[900]]

[Prior to 6/12/02, see also 567—Ch 106]

Rescinded **ARC 6982C**, IAB 4/19/23, effective 5/24/23

CHAPTER 105 ORGANIC MATERIALS COMPOSTING FACILITIES

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—105.1(455B,455D) General. This chapter shall apply to the composting of solid and yard wastes. Composting facilities may include vermicomposting, turned windrows, aerated static piles, aerated in-vessel systems, or other methods approved by the department. Composting facilities existing as of June 19, 2002, must comply with the requirements of this chapter within two years or by the permit renewal date, whichever is later.

105.1(1) Definitions. For the purposes of this chapter, the following definitions apply:

“Agricultural waste” means organic materials normally discarded during the production of plants and animals from agronomic, horticultural or silvicultural operations. “Agricultural waste” includes but is not limited to manure, crop residuals, bedding, and other vegetative by-products produced during farm processing. Dead animals are not included.

“Best management practices” means the practices described in the most recent version of the Compost Facility Operating Guide published by the United States Composting Council or other best management practices as approved by the department.

“Bulking agent” means a material that contributes structure and porosity, usually a dry, rigid material such as shredded wood or tire chips.

“Compostable” means an organic material that undergoes degradation by biological processes during composting to yield carbon dioxide, water, inorganic compounds and biomass.

“Compostable plastics” means a plastic that undergoes degradation by biological processes at a rate consistent with other known compostable materials and leaves no visually distinguishable or toxic residue. Testing according to ASTM D6400-00 criteria should be used to designate compostable plastics.

“Composting” means the accelerated biological decomposition of organic matter under managed aerobic conditions resulting in a stable, innocuous final product.

“Composting facility” means all related receiving, processing, production, curing, and storage areas and necessary roads, buildings, equipment, litter control devices, pollution control devices, fire control devices, landscaping, gates, personnel and maintenance facilities, sewer and water lines, and process water.

“Compost leachate” means a liquid that has percolated through or drained from compost.

“Compost maturity,” according to Test Methods for the Examination of Composting and Compost (TMECC), means an organo-chemical state of compost that indicates the presence or lack of organic phytotoxic chemicals in stable compost. Measurements for maturity are based on the amount of volatile fatty acids present. Mature compost will have fatty acids of no more than 2 mg/g dry weight solids or as specified in the most recent version of TMECC.

“Compost stability,” according to TMECC, means a stage in the composting process when microbial activity is diminished with the corresponding decrease of available organic carbon and other energy sources. Stability is measured through respiration. Stable compost will have oxygen uptake rates in the range of 0-3.5 mg O₂/g BVS/hr. or as specified in the most recent version of TMECC.

“Cured compost” means compost that is both stable and mature according to the definitions found in this chapter.

“Curing” means a process in which compost is further monitored to control pathogen regrowth while increasing stability and maturity.

“Finished compost” means cured and, if necessary, screened or refined.

“Household organic waste” means general household compostable items such as food residuals and paper produced on premises.

“Infectious waste” means waste that is infectious, including but not limited to contaminated sharps, cultures, and stocks of infectious agents, blood and blood products, pathological waste, and contaminated animal carcasses from hospitals or research laboratories.

“Municipality” means any city or county in the state.

“Nuisance” means whatever is injurious to health, indecent, or unreasonably offensive to the senses, or an obstruction to the free use of property, so as essentially to unreasonably interfere with the comfortable enjoyment of life or property, and a civil action by ordinary proceedings may be brought to enjoin and abate the same and to recover damages sustained on account thereof.

“Organic materials” means any material of animal or plant origin.

“Premises” means a geographically contiguous property owned by a generator or noncontiguous property owned by a generator and that is connected by a controlled right-of-way to which the public does not have access. Two or more pieces of property that are geographically contiguous and divided by public or private right-of-way are a single premises.

“Small compost facilities” means facilities meeting the requirements set forth in rule 567—105.5(455B,455D).

“Solid waste composting” means the composting of any organic material with or without yard waste. For the purposes of this chapter, facilities exempt under 567—105.2(455B,455D) are not considered solid waste composting facilities. In addition, facilities in compliance with 567—105.4(455B,455D), 567—105.5(455B,455D) or 567—105.6(455B,455D) are not considered solid waste composting facilities. Only facilities that are required to obtain or have a permit are considered solid waste composting facilities.

“Vector” means a carrier organism that is capable of transmitting a pathogen from one organism to another. Vectors include, but are not limited to, birds, rats and other rodents, and insects.

“Yard waste” means vegetative matter such as grass clippings, leaves, garden waste, brush and trees, and any clean wood waste which is necessary as bulking agent and which is free of coatings and preservatives.

105.1(2) There are three different levels of compost facility regulation:

- a. Exempt operations in accordance with 567—105.2(455B,455D).
- b. Permit by rule. Yard waste composting facilities are exempt from permitting if operated in conformance with 567—105.3(455B,455D) and 567—105.4(455B,455D). Facilities that compost dead farm animals are exempt from permitting if operated in conformance with 567—105.3(455B,455D) and 567—105.6(455B,455D). Small quantity solid waste compost operations as defined in 567—105.5(455B,455D) are exempt from permitting if operated in conformance with 567—105.3(455B,455D) and 567—105.5(455B,455D).
- c. Solid waste composting. Solid waste composting facilities must obtain a permit from the department. Solid waste composting facilities involving municipal sewage sludge shall also operate in conformance with 567—Chapter 67.

105.1(3) Burial of yard waste at a sanitary landfill is prohibited, except in the following circumstances:

- a. When the yard waste is collected for disposal as a result of a severe storm and the yard waste originates in an area declared to be a disaster area in a declaration issued by the President of the United States or the governor.
- b. When the yard waste is collected for disposal to control, eradicate, or prevent the spread of insect pests, tree and plant diseases, or invasive plant species.
- c. When the yard waste is disposed of in a sanitary landfill that operates a methane collection system that produces energy. A methane collection system that burns landfill gas without using the energy for a purpose other than reducing the amount of methane released is not considered to be a system that produces energy.

105.1(4) Each city and county shall, by ordinance, require persons within the city or county to separate yard waste from other solid waste generated.

105.1(5) Yard waste that has been separated at its source from other solid waste may be accepted by a sanitary landfill for the purposes of soil conditioning or composting. Yard waste accepted by a sanitary landfill for the purpose of soil conditioning shall be used only on finished areas of the landfill that have received the final earthen cover, developed areas with intermediate cover, and restoration of soil borrow areas. Burning of yard waste at a sanitary disposal project is prohibited.

105.1(6) Land application of yard waste shall be in conformance with 567—Chapter 121.

[ARC 2692C, IAB 8/31/16, effective 10/5/16]

567—105.2(455B,455D) Exemptions. The following projects are exempt from this chapter. This exemption is not a defense to a nuisance action brought pursuant to Iowa Code chapter 657.

105.2(1) Yard waste or household organic waste composted and used on the same premises where it originated.

105.2(2) Composting facilities involving agricultural waste, excluding dead animals, and clean wood waste which is necessary as bulking agent and which is free of coatings and preservatives. Use of any other materials as bulking agent shall require prior approval by the department. If agricultural waste is mixed with other wastes including dead animals for the purpose of composting, then this chapter shall apply unless the other wastes have been preapproved by the department as necessary as bulking agent.

105.2(3) Yard waste, household organic waste, and agricultural waste generated, composted together in any combination and used on the same premises where they originated.

567—105.3(455B,455D) General requirements for all composting facilities not exempt pursuant to 567—105.2(455B,455D). This rule applies to all composting facilities not exempt under 567—105.2(455B,455D). Facilities exempt from permitting that do not operate in accordance with this chapter may as a result be required to obtain a solid waste composting permit. Composting facilities shall also operate in accordance with all applicable city and county ordinance and permitting requirements.

105.3(1) The composting facility shall be 500 feet from any existing inhabited residence, not including the residence of the person owning/operating the compost facility, at the time the permit application was received by the department. Composting must be done outside of wetlands, at least 200 feet from public wells, 100 feet from private wells, 50 feet from property lines, and 100 feet from flowing or intermittent streams, lakes, or ponds. Composting done inside the 100-year flood plain shall be in accordance with all local and department regulations including 567—71.5(455B). Sediment ponds, engineered wetlands or other constructed waterways for the purpose of pollution control are excluded from this requirement.

105.3(2) Composting shall be performed in a manner that minimizes the formation of compost leachate by the facility.

105.3(3) Measures shall be taken to prevent water from running onto the facility from adjacent land and to prevent compost leachate and runoff from leaving the composting facility. Runoff from the composting facility must be properly managed.

105.3(4) Facilities shall be designed, constructed, and maintained so as to minimize ponding of water or liquids. Any ponding that does occur shall be corrected through routine facility maintenance within 48 hours after the termination of the event causing the ponding.

105.3(5) Composting must be done on an all-weather surface of compacted soil, compacted granular aggregates, asphalt, concrete or similar relatively impermeable material that will permit accessibility during periods of inclement weather and prevent contamination of surface water and groundwater.

105.3(6) Solid waste which cannot be composted or which is removed during processing shall be properly disposed of. Infectious waste shall not be accepted for composting at any composting facility unless approved by the department in writing.

105.3(7) Solid waste materials shall be managed through the entire process in accordance with best management practices to minimize conditions such as odors, dust, noise, litter and vectors which may create nuisance conditions or a public health hazard.

105.3(8) Storage of cured or finished compost shall be limited to 18 months. The 18-month period may be extended with prior written approval from the department.

105.3(9) If compost is offered for sale as a soil conditioner or fertilizer, the compost must be registered by the department of agriculture and land stewardship under Iowa Code chapter 200, Fertilizers and Soil Conditioners. Sale shall be in compliance with all applicable federal and state laws and local ordinances and regulations.

105.3(10) Compost shall not be applied to land, sold or given away unless the concentration of human-made inert materials such as glass, metal, and plastic is less than 1.5 percent by dry weight.

Compost shall not be applied to land, sold or given away unless the size of any human-made inert materials is less than 13 mm (0.512 inches).

567—105.4(455B,455D) Specific requirements for yard waste composting facilities. Yard waste composting facility operators are encouraged to be trained, tested, and certified by a department-approved certification program upon approval of such a program by the department.

105.4(1) Before the composting facility commences operation, the department and the field office of the department serving the composting facility's location shall be notified in writing of the following:

- a. The location of the composting facility.
- b. Legal description of the facility.
- c. Landowner's name, telephone number, and mailing address.
- d. Responsible party's name, telephone number, and mailing address.
- e. Annual capacity of the facility.
- f. Method of composting to be employed.
- g. Source of the yard waste and any necessary bulking agent. This description must include a description of service area defined in terms of municipalities wherein sources of the material are located.

105.4(2) The facility shall have a permanent sign posted at the entrance specifying:

- a. Name of operation.
- b. Operating hours.
- c. Materials which are accepted or the statement "All materials must have prior approval."
- d. Telephone number of 24-hour emergency contact person.

105.4(3) The area of the composting facility must be large enough for the volume of yard waste composted.

105.4(4) Yard waste must be taken out of containers before composting, unless the containers are compostable.

105.4(5) Aerobic conditions shall be maintained in accordance with best management practices.

105.4(6) An annual report for the previous fiscal year beginning July 1 and ending June 30 shall be submitted to the department by July 31 of each year. The report shall be submitted using Form 542-3276C, provided by the department, and all applicable sections of the form must be completed.

These records shall be maintained by the facility for a period of three years for inspection and evaluation by the department.

567—105.5(455B,455D) Small composting facilities receiving off-premises materials. Small composting facilities are exempt from obtaining a solid waste composting permit provided the facility complies with 567—105.3(455B,455D) and 567—105.5(455B,455D).

105.5(1) *Acceptable materials and amounts.* Yard waste and food residuals may be received from off premises at a total rate of two tons or less per week for composting either singly, in combination, or with agricultural waste. Any clean wood waste free of coating and preservatives may be used as a bulking agent. The two tons per week combined weight limit does not apply to bulking agent. However, the amount of bulking agent received must be appropriate for the amount of compostable materials received. Facilities composting over two tons of food residuals and yard waste per week in any combination from off premises must obtain a permit (Form 50A (542-1542A)) and adhere to the solid waste composting requirements stipulated in 567—105.7(455B,455D) through 567—105.14(455B,455D). If only agricultural wastes are collected and composted, this rule does not apply. If only yard wastes are collected and composted, this rule does not apply.

105.5(2) *Notification.* Before the composting facility commences operation, the department and the field office of the department serving the composting facility's location shall be notified in writing of the following:

- a. The location of the composting facility.
- b. Legal description of the facility.
- c. Landowner's name, telephone number, and mailing address.
- d. Responsible party's name, telephone number, and mailing address.
- e. Annual capacity of the facility.
- f. Method of composting to be employed.
- g. Source of the feedstock and any necessary bulking agent. This description must include a description of service area defined in terms of municipalities wherein sources of the material are located.

105.5(3) *Signage.* The facility shall have a permanent sign posted at the entrance specifying:

- a. Name of operation.
- b. Operating hours.
- c. Materials which are accepted or the statement "All materials must have prior approval."
- d. Telephone number of 24-hour emergency contact person.

105.5(4) *Reporting.* An annual report for the previous fiscal year beginning July 1 and ending June 30 shall be submitted to the department by July 31 of each year. The report shall be submitted using Form 542-3276C, provided by the department, and all applicable sections of the form must be completed.

These records shall be maintained by the facility for a period of three years for evaluation by the department.

567—105.6(455B,455D) Specific requirements for composting of dead farm animals. Operators of dead farm animal composting facilities are encouraged to be trained, tested, and certified by a department-approved certification program upon approval of such a program by the department. A facility that composts dead farm animals is exempt from permitting if the following operating requirements are met and the facility is in compliance with 567—105.3(455B,455D). Businesses or individuals that are neither the owner nor operator of any of the sites where dead farm animals are generated and that want to compost dead farm animals must obtain a permit in accordance with 567—105.8(455B,455D).

105.6(1) Before commencing operation, the operator is encouraged to notify the department field office with jurisdiction over the facility. The department may provide general assistance, such as locating bulking agents and providing advice in regard to siting considerations such as pad location, sizing and design, to facilities notifying the department and requesting assistance.

105.6(2) Farm animals known or suspected to have died from an infectious disease that can be spread by scavengers or insects or that died from a reportable disease shall be disposed of in accordance with the requirements of the Iowa department of agriculture and land stewardship and the department.

105.6(3) Transportation vehicles shall be constructed to prevent the release of mortality contaminated materials under normal operating conditions. The most direct haul route that avoids biosecurity risks shall be utilized.

105.6(4) The composting facility shall be designed to accommodate at least the average annual death loss for all sites using the composting facility. Facility design shall also take into account space requirements for managing raw materials (e.g., additional bedding and bulking agents needed for mortality composting) and finished compost.

105.6(5) Animal mortalities from a catastrophic event, such as a fire or electrical outage, shall not be composted until the department field office is contacted and arrangements are approved for the appropriate treatment or disposal of the animals. The facility shall contact the department field office with jurisdiction over the facility as soon as possible after such a catastrophic event occurs to receive approval of the disposal option.

105.6(6) Dead farm animals shall be incorporated into the composting process within 24 hours of death. An adequate base layer (from 12 to 24 inches thick, depending on the size and number of dead farm animals) with 6 to 12 inches of bulking agent between carcasses and an additional 12 inches of cover material shall be maintained around carcasses at all times to control mortality leachate and odors and to prevent access by scavenging domestic and wild animals.

105.6(7) Dead farm animals shall not be removed from composting until all soft tissue is fully decomposed.

105.6(8) Compost (including bones that have not fully decomposed) shall be applied to cropland in a manner that minimizes the runoff into a water of the state. Application of the compost to lands other than cropland shall require prior approval by the department.

567—105.7(455B,455D) Permit requirements for solid waste composting facilities.

105.7(1) *Permit required.* Solid waste composting facilities shall not be constructed or operated without a permit from the department. As part of the sanitary disposal project permit issuance procedures, these facilities must meet comprehensive planning requirements. Since these facilities serve as alternatives to landfilling, comprehensive planning requirements are minimal and are satisfied through the information

provided in the permit application submittal and by compliance with the reporting requirements set forth in 567—105.12(455B,455D). If a solid waste composting facility is formally part of a planning area's integrated waste management system, the operator must participate in that area's planning activities and the facility must be included in all plan submittal documents. The issuance of a permit by the department in no way relieves the applicant of the responsibility of complying with all other local, state, or federal statutes, ordinances, and rules or other requirements applicable to the construction and operation of a solid waste composting facility.

105.7(2) *Construction and operation.* All solid waste composting facilities shall be constructed and operated according to the plans and specifications as approved by the department and the conditions of the permit. The approved plans and specifications shall constitute a term of the permit.

105.7(3) *Transfer of title and permit.* If title to a solid waste composting facility is transferred, then the department shall transfer the permit within 60 days if the department finds that the following requirements have been met:

a. The title transferee has applied in writing to the department within 30 days of the transfer of title to request a transfer of the permit.

b. The permitted facility is in compliance with the rules and conditions of the permit.

105.7(4) *Permit conditions.* Any permit may be issued subject to conditions specified in writing by the department that are necessary to ensure that the sanitary disposal project can be constructed and operated in compliance with Iowa Code chapters 455B and 455D and these rules.

105.7(5) *Effect of revocation.* If a permit held by any public or private agency for a solid waste composting facility is revoked by the director, then no new permit shall be issued to that agency for that sanitary disposal project for a period of one year from the date of revocation. This subrule shall not prohibit the issuance of a permit for the sanitary disposal project to another public or private agency.

105.7(6) *Inspection prior to commencing operation.* The department shall be notified 30 days prior to scheduled completion of a solid waste composting facility and when the construction has been completed. The department shall then complete an inspection of the facility to determine if the sanitary disposal project has been constructed in accordance with the plans and specifications and permit requirements. No solid waste shall be accepted by the facility until it has been inspected and approved by the department.

105.7(7) *Duration and renewal of permits.* Solid waste composting facility permits shall be issued for a period of three years, and are renewable for similar terms, unless otherwise specified pursuant to 105.7(5).

105.7(8) *Request for and approval of permit renewal.* Requests for permit renewals shall be in writing and must be filed at least 90 days before the expiration of the current permit and submitted on a Form 50A to the department. The department may request that additional information be submitted for review in order to make a permit renewal decision. Comprehensive plan update requirements are satisfied through the information provided in the permit renewal application submittal and by compliance with the reporting requirements set forth in 567—105.12(455B,455D). If a solid waste composting facility is formally part of a planning area's integrated waste management system, the operator must participate in that area's plan update submittals. The department shall renew the permit if, after a review and inspection of the facility and its compliance history, the department finds that the facility is in compliance with its current permit and these rules. If the facility is found not to be in compliance with its current permit and these rules, then the sanitary disposal project shall be brought into compliance, or placed on a compliance schedule approved by the department, before the permit is renewed pursuant to 105.7(5).

105.7(9) *Facility expansion.* Prior to the facility's expanding the amount or types of materials accepted, the facility shall make a request in writing and obtain approval from the department for an amendment to the permit.

105.7(10) *Process change.* Prior to a change in the facility's process, the facility shall make a request in writing and obtain approval from the department for an amendment to the permit.

567—105.8(455B,455D) Permit application requirements for solid waste composting facilities.

105.8(1) A permit application for a new facility shall include a completed Form 50A (542-1542A) and a map or aerial photograph. This map or aerial photograph shall identify:

a. The boundaries of the facility.

- b.* Wells, streams, creeks, rivers, ponds, sinkholes, and drainage wells.
- c.* North or other principal compass points.
- d.* Zoning and land use within one-half mile of the closest portion of the facility.
- e.* Haul routes to and from the facility with load limits or other restrictions.
- f.* Homes and buildings within one-half mile of the closest portion of the facility.
- g.* Section lines or other legal boundaries.
- h.* Any nearby runway used or planned to be used by turbojet or piston-type aircraft at FAA-certified airports.

105.8(2) Design requirements. Design documents must be prepared by an Iowa-licensed professional engineer (Iowa Code chapter 542B) and must include the following:

- a.* Equipment to be installed, litter control devices, pollution control devices, fire control devices, landscaping, gates, personnel and maintenance facilities, sewer and water lines, and process water, and dimensions, details, and capacities of the proposed receiving, processing, production, curing, and storage areas.
- b.* Design calculations justifying the size of the composting areas. The areas for composting must be adequate for the volume of solid waste being composted in accordance with best management practices.
- c.* Descriptions, specifications, and capacities of proposed equipment to be used in composting.
- d.* Flow diagram of all operating steps.
- e.* Composition of the operating surface. Receiving, processing, production, and curing must take place on a constructed, impervious base that can support the load of the equipment used under all weather conditions. The permeability coefficient of the base must be less than 1×10^{-7} cm/sec (0.00028 feet/day). Storage areas for cured/finished compost must permit accessibility during periods of inclement weather.
- f.* Dimensions, details, and capacities of storm water run-on and runoff management systems of the composting facility. The facility may need a storm water permit.
- g.* Proof of the applicant's ownership of the site and legal entitlement to use the site as a composting facility.

105.8(3) The operating plan shall provide the following:

- a.* Method of composting.
- b.* Duration of composting with a time frame for receiving, processing, production, curing, and storage.
- c.* Description of storage of raw materials including quantity and types.
- d.* Description of the types, amounts, and sources of wastes to be received and processed daily. This description must include a description of service area defined in terms of municipalities wherein sources of the material are located.
- e.* Description of the aeration method and the aeration frequency to be used to maintain aerobic conditions in accordance with best management practices.
- f.* Description of the methods to minimize and manage odors, dust, vectors, noise and litter.
- g.* Description of the specific procedures to be followed in case of equipment breakdown, maintenance downtime, and fire in equipment, composting material or buildings to include methods to be used to remove or dispose of accumulated waste and burned or damaged material.
- h.* Plans for using or marketing the finished compost.
- i.* Method(s) of disposing of collected storm water.
- j.* Method(s) of maintaining storm water management systems to maintain design volume and to locate and repair leaks in the system.
- k.* Description of the monitoring, sampling, and analysis procedures and schedule for testing the composting process and product including sampling frequency, sample size and number, and sample locations. A facility-specific time-temperature monitoring plan for pathogen kill shall be included in the operating plan.

567—105.9(455B,455D) Specific operating requirements for permitted solid waste composting facilities. In addition to the following, all permitted solid waste composting facilities shall comply with 567—105.3(455B,455D).

105.9(1) Access.

- a. Access to the facility shall be restricted with a lockable gate at the entrance to the facility.
- b. Access to the facility shall be allowed only when an employee, agent or representative of the facility is on duty.
- c. Emergency access to the facility shall be provided. Fire lanes shall be maintained to provide access for firefighting equipment as required by the local fire department.

105.9(2) The facility shall have a permanent sign posted at the entrance specifying:

- a. Name of operation.
- b. Operating hours.
- c. Materials which are accepted or the statement "All materials must have prior approval."
- d. Telephone number of 24-hour emergency contact person.

105.9(3) All materials received must be incorporated into the composting process within 24 hours of receipt unless storage of these materials is specified in the plan and approved by the department.

105.9(4) Sample collection, preservation, and analysis must be done in a manner which ensures valid and representative results. Facilities should follow the most recent version of the Test Methods for the Examination of Composting and Compost guidelines or other testing procedures as approved by the department. Unless otherwise proposed in the operating plan and authorized in the permit, the permit holder shall test at a minimum:

- a. Twice weekly temperature readings of compost piles, batches, and windrows. Compost must be held at a temperature above 55 degrees Celsius (131 degrees Fahrenheit) for an appropriate amount of time, in accordance with best management practices, in order to achieve pathogen reduction.
- b. Weekly moisture levels of compost piles, batches, and windrows.
- c. Testing of the finished product. Compost shall not be applied to land, sold or given away for household use unless the following requirements are met. If the following requirements are not met, compost must be applied according to 567—Chapter 121.

(1) The density of fecal coliform shall be less than 1000 most probable number (MPN) per gram of total solids (dry weight basis) or the density of *Salmonella* sp. bacteria in compost shall be less than three MPN per four grams of total solids (dry weight basis).

(2) The concentrations of human-made inert materials comply with 105.3(10), and the concentrations of all metals are less than the following:

Metal	Concentration mg/kg dry weight
Arsenic (As)	41
Cadmium (Cd)	39
Copper (Cu)	1500
Lead (Pb)	300
Mercury (Hg)	17
Nickel (Ni)	420
Selenium (Se)	36
Zinc (Zn)	2800

567—105.10(455B,455D) Operator certification for permitted solid waste composting facilities. All permitted solid waste composting facilities shall meet the following requirement. The person responsible for daily operation of the facility shall be certified by a department-approved program upon approval of such a program by the department. The certification must be renewed every three years.

567—105.11(455B,455D) Record-keeping requirements for solid waste composting facilities. All permitted solid waste composting facilities shall meet the following requirements. The following records shall be maintained by the facility for a period of three years and at the facility at all times and shall be submitted to the department upon request:

1. Analytical results described in 105.9(4). These results shall be recorded on a department-approved reporting form.

2. Types and weight of compostable materials and bulking agent, in tons, accepted at the facility annually.
3. Weight of compost, in tons, removed from the facility annually.
4. A copy of the plan, the permit, annual reports, and the current storm water pollution prevention plan.

567—105.12(455B,455D) Reporting requirements for solid waste composting facilities. An annual report for the previous fiscal year beginning July 1 and ending June 30 shall be submitted to the department by July 31 of each year by all permitted solid waste composting facilities. The report shall be submitted using Form 542-3276C, provided by the department, and all applicable sections of the form must be completed.

567—105.13(455B,455D) Closure requirements for solid waste composting facilities. All permitted solid waste composting facilities shall meet the following requirements. For each composting facility, a closure plan shall be submitted to the department containing a description of the steps necessary to close the facility. A permit shall not be issued unless the closure plan is approved.

105.13(1) An updated closure plan, including a schedule for closure, shall be submitted to the department at least 60 calendar days prior to the proposed termination date for the facility.

105.13(2) Unless an alternative schedule is approved by the department, within six months of the facility's ceasing operation, all waste and unfinished and finished compost shall be removed from the premises.

105.13(3) Facilities beneficially reusing material in order to comply with 105.13(2) are required to submit in written form all agreements for this reuse. This beneficial reuse shall include names of parties involved, amount of material utilized, and cost per ton. The closure plan will not be approved until these agreements are submitted to and approved by the department. The department shall also be notified of any changes in the agreements.

105.13(4) Upon closure, all permitted solid waste composting facilities shall perform the following activities:

- a. Properly dispose of all organic material, solid waste and litter at the premises.
- b. Lock all doors, gates, entrances, and exits.
- c. Report the completion of these activities to the local political jurisdiction, the department, and the department field office serving the composting facility.

567—105.14(455B,455D) Composting facility financial assurance. Permitted solid waste composting facilities receiving more than 5,000 tons of feedstock annually, bulking agent excluded, must obtain and submit a financial assurance instrument to the department for waste materials received and stockpiled by the facility in accordance with this rule. The financial assurance instrument shall provide monetary funds to properly dispose of any preprocessed and postprocessed stockpiled materials that may remain at a facility due to the owner's or operator's failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

105.14(1) *No permit without financial assurance.* The department shall not issue or renew a permit to an owner or operator of a solid waste composting facility until a financial assurance instrument has been submitted to and approved by the department.

105.14(2) *Proof of compliance.* Proof of the establishment of the financial assurance instrument and compliance with this rule, including a current closure cost estimate, shall be submitted to the department within 30 days of the close of the permit holder's first fiscal year that begins after June 19, 2002, or at the time of application for a permit for a new solid waste composting facility. The owner or operator must provide continuous coverage for closure and submit proof of compliance, including an updated closure cost estimate, with each permit renewal thereafter until released from this requirement by the department.

105.14(3) *Use of one financial assurance instrument for multiple permitted activities.* Solid waste composting facilities required to maintain financial assurance pursuant to any other provisions of 567—Chapters 100 to 123 may satisfy the requirements of this rule by the use of one financial assurance

instrument if the permit holder ensures that the instrument provides financial assurance for an amount at least equal to the current cost estimates for closure of all sanitary disposal project activities covered.

105.14(4) *Financial assurance amounts required.* The estimate submitted to the department must be certified by an Iowa-licensed professional engineer and must account for at least the following factors determined by the department to be minimal necessary costs for closure:

a. Transportation costs, which include the cost to load the material, and total tip fees to properly dispose of the maximum tonnage of received materials that could be managed and stockpiled by the compost facility. Also included shall be the costs of properly removing any wastewater held at the facility, or

b. Cost of a beneficial reuse option, approved pursuant to subrule 105.13(3), for the total amount of material that could be managed and stockpiled by the composting facility. If the total amount of material will not be beneficially reused, the remainder of the cost shall be calculated according to paragraph 105.14(4)“*a.*” Also included shall be the costs of properly removing any wastewater held at the facility.

c. The costs for maintaining financial assurance pursuant to any other provisions of 567—Chapters 100 to 123, if any, in accordance with subrule 105.14(3).

105.14(5) *Acceptable financial assurance instruments.* The financial assurance instrument shall be established in an amount equal to the cost estimate prepared in accordance with subrule 105.14(4) and shall not be canceled, revoked, disbursed, released, or allowed to terminate without the approval of the department. Financial assurance may be provided by cash in the form of a secured trust fund or local government dedicated fund, surety bond, letter of credit, or corporate or local government guarantee as follows:

a. Secured trust fund. The owner or operator of a solid waste composting facility or entity serving as a guarantor may demonstrate financial assurance for closure by establishing a secured trust fund that conforms to the requirements of this paragraph.

(1) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The fund shall be restricted for the sole purpose of funding closure activities at the facility, and a copy of the trust agreement must be submitted to the department and placed in the facility’s official files.

(2) A secured trust fund shall name the department of natural resources as the entity authorized to draw funds from the trust, subject to the provision of proper notification to the trust officer of failure by the permittee to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) Moneys in the fund shall not be assigned for the benefit of creditors with the exception of the state.

(4) Moneys in the fund shall not be used to pay any final judgment against a permit holder arising out of the ownership or operation of the site during its active life or after closure.

(5) The owner or operator or another person authorized to conduct closure activities may request reimbursement from the trustee for closure expenditures as they are incurred. Requests for reimbursement shall be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure and if documentation of the justification for reimbursement has been submitted to the department for prior approval.

(6) If the balance of the trust fund exceeds the current cost estimate for closure at any time, the owner or operator may request withdrawal of the excess funds from the trustee so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

b. Local government dedicated fund. The owner or operator of a publicly owned solid waste composting facility or a local government serving as a guarantor may demonstrate financial assurance for closure by establishing a dedicated fund that conforms to the requirements of this paragraph.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, resolution or order as a restricted fund to pay for closure costs arising from the operation of the solid waste composting facility.

(2) A copy of the document establishing the dedicated fund must be submitted to the department and placed in the facility’s official files.

(3) If the balance of the dedicated fund exceeds the current cost estimate for closure at any time, the owner or operator may withdraw excess funds so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

c. Surety bond. A surety bond must be written by a company authorized by the commissioner of insurance to do business in the state. The surety bond shall comply with the following:

(1) The bond shall be in a form approved by the commissioner of insurance and shall be payable to the department of natural resources.

(2) The bond shall be specific to a particular facility for the purpose of properly disposing of any solid waste that may remain on site due to the owner's or operator's failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) The owner or operator shall provide the department with a statement from the surety with each permit application renewal, noting that the bond is paid and current for the permit period for which the owner or operator has applied for renewal.

d. Letter of credit. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(1) The owner or operator must submit to the department a copy of the letter of credit and place a copy in the facility's official files.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the facility and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the facility's files.

(3) The letter of credit must be irrevocable and must be issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 90 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into a secured trust fund that meets the requirements of paragraph 105.14(5) "a." If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the secured trust fund established by the owner or operator. The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

e. Corporate guarantee. An owner or operator may meet the requirements of this rule by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a "substantial business relationship" with the owner or operator.

(1) The terms of the written guarantee must provide that within 30 days of the owner's or operator's failure to perform closure of a facility covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);
2. Establish a fully funded secured trust fund as specified in paragraph 105.14(5) "a" in the name of the owner or operator (payment guarantee); or
3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following three conditions:

1. A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor's or Aaa, Aa, A, or Baa as issued by Moody's; or
2. A ratio of less than 1.5 comparing total liabilities to net worth; or
3. A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities.

(3) The tangible net worth of the guarantor must be greater than the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(4) The guarantor must have assets amounting to at least the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(5) Record-keeping and reporting requirements. The guarantor must submit the following records to the department and place a copy in the facility's official files:

1. A copy of the written guarantee between the owner or operator and the guarantor.
2. A letter signed by a certified public accountant and based upon a certified audit that:
 - Lists all the current cost estimates covered by a guarantee including, but not limited to, cost estimates required by subrule 105.14(4); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40 CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and
 - Provides evidence demonstrating that the guarantor meets the conditions of subparagraphs 105.14(5) "e"(2), (3) and (4).
3. A copy of the independent certified public accountant's unqualified opinion of the guarantor's financial statements for the latest completed fiscal year. In order for the guarantor to be eligible to use the guarantee, the guarantor's financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this instrument. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the corporate guarantee, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

f. Local government guarantee. An owner or operator may demonstrate financial assurance for closure by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E.

(1) The terms of the written guarantee must provide that within 30 days of the owner's or operator's failure to perform closure of a facility covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);
2. Establish a fully funded secured trust fund as specified in paragraph 105.14(5) "a" in the name of the owner or operator (payment guarantee); or
3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following requirements:

1. If the guarantor has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the guarantor must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard & Poor's, on all such general obligation bonds; or
2. The guarantor must satisfy each of the following financial ratios based on the guarantor's most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

(3) The guarantor must prepare its financial statements in conformity with generally accepted accounting principles or other comprehensive basis of accounting and have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa.

(4) A guarantor is not eligible to assure its obligations if:

1. The guarantor is currently in default on any outstanding general obligation bonds; or
2. The guarantor has any outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard & Poor's; or
3. The guarantor operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or

4. The guarantor receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement. A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism; or

5. The closure costs to be assured are greater than 43 percent of the guarantor's total annual revenue.

(5) The local government guarantor must include disclosure of the closure costs assured through the guarantee in its next annual audit report prior to the initial receipt of waste at the facility or prior to cancellation of an alternative financial assurance instrument, whichever is later. For the first year the guarantee is used to assure costs at a particular facility, the reference may instead be placed in the guarantor's official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(6) The local government owner or operator must submit to the department the following items:

1. A copy of the written guarantee between the owner or operator and the local government serving as guarantor for the closure costs at the facility.

2. A copy of the guarantor's most recent annual financial audit report indicating compliance with the financial ratios required by numbered paragraph 105.14(5) "f"(2)"2," if applicable, and the requirements of subparagraphs 105.14(5) "f"(3) and (4).

3. A letter signed by the local government's chief financial officer that lists all the current cost estimates covered by the guarantor, as described in subrule 105.14(4); and that provides evidence and certifies that the local government meets the conditions of subparagraphs 105.14(5) "f"(2), (3), (4) and (5).

105.14(6) *Financial assurance cancellation and permit suspension.*

a. A financial assurance instrument may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance prior to cancellation, as specified in this rule, or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

b. A financial assurance instrument shall be continuous in nature until canceled by the financial assurance provider or until the department gives written notification to the owner, operator, and financial assurance provider that the covered site has been properly closed. The financial assurance provider shall give at least 90 days' notice in writing to the owner or operator and the department in the event of any intent to cancel the instrument.

c. Within 60 days of receipt of a written notice of cancellation of financial assurance by the financial assurance provider, the owner or operator must provide the department an alternative financial assurance instrument. If a means of continued financial assurance is not provided within that 60 days, the department shall suspend the permit.

d. The owner or operator shall perform proper closure within 30 days of the permit suspension. For the purpose of this rule, "proper closure" means completion of all items pursuant to rule 567—105.13(455B,455D) and subrule 105.14(4).

e. If the owner or operator does not properly close the site within the 30-day period allowed, the department shall file a claim with the financial assurance instrument provider to collect the amount of funds necessary to properly close the site.

f. An owner or operator who elects to terminate a permitted activity, whose renewal application has been denied, or whose permit has been suspended or revoked for cause must submit within 30 days of the termination of the permit a schedule for completing proper closure of the terminated activity. Closure completion cannot exceed 60 days from the date of termination of the permit.

g. The director may also request payment from any financial assurance provider for the purpose of completing closure when the following circumstances exist:

(1) The owner or operator is more than 15 days late in providing a schedule for closure or for meeting any date in the schedule for closure.

(2) The owner or operator declares an economic inability to comply with this rule, either by sending written notification to the director or through an action such as, but not limited to, filing for bankruptcy.

567—105.15(455B,455D) Variances. A request for a variance must be submitted in writing to the department pursuant to 561—Chapter 10.

These rules are intended to implement Iowa Code sections 455B.304 and 455D.9.

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CHAPTER 106
CITIZEN CONVENIENCE CENTERS AND TRANSFER STATIONS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—106.1(455B) Compliance. All existing citizen convenience centers and transfer stations shall be inspected and reviewed by the department to ensure compliance with these rules. These rules do not apply to medical waste transfer stations.

106.1(1) If a citizen convenience center or transfer station existing before July 17, 2002, is not in compliance, the department shall notify that facility in writing of the specific deficiencies. The facility shall then submit to the department in writing a compliance schedule for that facility within 30 days of notification by the department. The compliance schedule shall not exceed two years from the date of written notification by the department.

106.1(2) If an existing facility does not achieve compliance within two years from the date of written notification by the department, the facility shall close pursuant to 567—106.7(455B) if it is a citizen convenience center or 567—106.17(455B) if it is a transfer station.

567—106.2(455B,455D) Definitions. In addition to the definitions set out in Iowa Code section 455B.301, which shall be considered incorporated by reference in these rules, the following definitions shall apply:

“Citizen convenience center” means a permanent, fixed-location facility that has the primary purpose of receiving solid waste from citizens and small businesses that do not utilize solid waste collection vehicles or satellite solid waste collection vehicles. A citizen convenience center is a sanitary disposal project and may hold solid waste for a short period of time before collection. A citizen convenience center is not a transfer station or final disposal facility.

“Hot load” means solid waste that is smoking, smoldering, emitting flames or hot gases or otherwise indicating that the solid waste is in the process of combustion or close to igniting.

“Incidental solid waste transfer” means the truck-to-truck transfer of solid waste from a satellite solid waste collection vehicle to a solid waste collection vehicle, if that solid waste could be collected only by a satellite solid waste collection vehicle due to vehicle access restrictions.

“Satellite solid waste collection vehicle” means a small, specialized solid waste collection vehicle that has been specifically designed to service locations that have vehicle access restrictions that would otherwise render solid waste collection technically prohibitive.

“Solid waste collection vehicle” means a vehicle that has the primary purpose of collecting solid waste from a variety of locations, including at curbside and from dumpsters, compactors, and roll-off boxes.

“Solid waste transport vehicle” means a vehicle that serves the purpose of transporting solid waste received by a transfer station.

“Surge pit” means a pit inside a transfer station building that receives solid waste from the tipping floor or directly from solid waste collection vehicles. Surge pits provide more space for temporary storage during peak operating hours and allow for additional compaction of the solid waste before it is loaded into solid waste transport vehicles.

“Transfer station” means a permanent, fixed-location, enclosed transportation terminal that has the primary purpose of receiving solid waste from solid waste collection vehicles and loading that solid waste into solid waste transport vehicles. Truck-to-truck transfer of solid waste that is not incidental solid waste transfer is not allowed outside a transfer station building. A transfer station is a sanitary disposal project and may hold or store solid waste before transport for a short period of time. A transfer station is not a final disposal facility.

“Truck-to-truck transfer” means the direct transfer of solid waste from one vehicle to a second vehicle with no intermediary handling. Truck-to-truck transfer of solid waste that is not incidental solid waste transfer is not allowed outside a transfer station building.

“Vector” means a carrier organism that is capable of transmitting a pathogen from one organism to another. Vectors include, but are not limited to, birds, rats and other rodents, and insects.

“*Washwater*” means a water-based liquid that has either originated from solid waste unloaded inside the enclosed portion of a transfer station or that has come into contact with enclosed transfer station areas that have come into contact with solid waste.

567—106.3(455B) Citizen convenience center and transfer station permits.

106.3(1) *Permit required.* A citizen convenience center or a transfer station is a sanitary disposal project and shall not be constructed or operated without a permit from the department. In order to be issued a permit, a citizen convenience center or transfer station must satisfy the comprehensive planning requirements set forth in 567—Chapter 101. The issuance of a permit by the department in no way relieves the applicant of the responsibility of complying with all other local, state, or federal statutes, ordinances, and rules or other requirements applicable to the construction and operation of a citizen convenience center or transfer station.

106.3(2) *Citizen convenience center permit exemption.* If a citizen convenience center is located at a permitted recycling or composting facility or sanitary disposal project, it shall not require its own permit; instead, the citizen convenience center shall be amended into the host facility’s permit.

106.3(3) *Construction and operation.* A citizen convenience center or transfer station shall be constructed and operated according to the plans and specifications approved by the department and the conditions of the permit. The approved plans and specifications shall constitute a condition of the permit.

106.3(4) *Transfer of title and permit.* If title to a citizen convenience center or transfer station is transferred, then the department shall transfer the permit within 60 days if the department has found that the following requirements have been met:

a. The title transferee has applied in writing to the department to request a transfer of the permit within 30 days of the transfer of title.

b. The permitted facility is in compliance with Iowa Code chapters 455B and 455D, these rules and the conditions of the permit.

106.3(5) *Permit conditions.* Any permit may be issued subject to conditions specified in writing by the department that are necessary to ensure that the sanitary disposal project is constructed and operated in compliance with Iowa Code chapters 455B and 455D and these rules.

106.3(6) *Effect of revocation.* If a permit for a citizen convenience center or transfer station held by any public or private agency is revoked by the director, then no new permit shall be issued to that agency for that sanitary disposal project for a period of one year from the date of revocation. Such revocation shall not prohibit the issuance of a permit for the sanitary disposal project to another public or private agency.

106.3(7) *Inspection prior to commencing new operation.* The department shall be notified when the construction of a new citizen convenience center or a transfer station has been completed. The department shall then complete an inspection of the facility to determine if the sanitary disposal project has been constructed in accordance with the plans and specifications and permit requirements. No solid waste shall be accepted by the facility until it has been inspected and approved by the department.

106.3(8) *Duration and renewal of permits.* A citizen convenience center or transfer station permit shall be issued for a period of three years and is renewable, unless otherwise specified by conditions set forth in subrule 106.3(5).

106.3(9) *Request and approval of permit renewal.* A request for permit renewal shall be in writing and must be filed at least 90 days before the expiration of the current permit by submitting Form 50 (542-1542) to the department. The department may request that additional information be submitted for review in order to make a permit renewal decision. The department shall renew the permit if, after a review and inspection of the facility and its compliance history, the department finds that the facility is in compliance with Iowa Code chapters 455B and 455D, these rules and the conditions of the permit, and is making a good-faith effort to maintain compliance. If the facility is found not to be in compliance with Iowa Code chapters 455B and 455D, these rules, and the conditions of the permit or if a good-faith effort to maintain compliance is not being made, the sanitary disposal project shall be brought into compliance or placed on a compliance schedule approved by the department before the permit is renewed. The permit may be renewed with new conditions pursuant to subrule 106.3(5).

106.3(10) *Request for permit modification.* A request for permit modification shall be submitted in writing to the department with supporting documentation and materials. The department may request that

additional information be submitted for review in order to make a permit modification decision. The department may also request that information pursuant to rule 106.4(455B) for citizen convenience centers or rule 106.8(455B) for transfer stations be resubmitted, in part or in whole, in order to make a permit modification decision. The modified permit may be approved with new conditions pursuant to subrule 106.3(5).

106.3(11) *Emergency solid waste transfer permit.* If a primary sanitary disposal project in a service area becomes inoperable, the department may issue an emergency solid waste transfer permit for a period of time no longer than necessary for a sanitary disposal project that provides replacement capacity to be constructed and become operational. The department may also issue an emergency solid waste transfer permit for a period of time no longer than necessary for a sanitary disposal project to return to permitted capacity if more solid waste is produced by an extraordinary event than can be managed by a sanitary disposal project. The conditions of an emergency solid waste transfer permit shall be determined by the department and may be used as an alternative to the requirements of this chapter. The department shall issue an emergency solid waste transfer permit only if the department has determined that the following conditions apply:

- a.* It is not technically feasible to direct haul with solid waste collection vehicles and manage the solid waste at another sanitary disposal project or combination thereof in the service area or surrounding service areas.
- b.* Solid waste must be transferred from the area in order to protect human health and the environment.

567—106.4(455B) Citizen convenience center permit application requirements.

106.4(1) A citizen convenience center permit applicant shall submit the following permit application information to the department:

- a.* The name, address, and telephone number of:
 - (1) Owner of site where project will be located.
 - (2) Permit applicant.
 - (3) Official responsible for the operation of the project.
 - (4) Professional engineer (P.E.) licensed in the state of Iowa and retained for the design of the facility, if any.
 - (5) Agency to be served by the project, if any.
 - (6) Responsible official of agency to be served, if any.
- b.* A legal description of the site.
- c.* A map or aerial photograph locating the boundaries of the site and identifying:
 - (1) North and other principal compass points.
 - (2) Zoning and land use within 250 feet.
 - (3) Homes and buildings within 250 feet.
 - (4) Section lines or other legal boundaries.
- d.* Proof of the applicant's ownership of the site and legal entitlement to use the site as a citizen convenience center.
- e.* Days and hours of operation of the site.
- f.* The service area of the facility and political jurisdictions included in that area.
- g.* Type, source, and expected weight of solid waste to be handled per day, week, and year.
- h.* A description of the disposal process to be used.
- i.* A site design illustrating the facility, which may include engineering plans and specifications completed by the engineer listed in 106.4(1) "a"(4).
- j.* A plan of operations detailing how the site will comply with rule 106.5(455B) and with rule 106.6(455B,455D), if applicable.
- k.* A closure plan detailing how the site will comply with rules 106.7(455B) and 106.18(455B).
- l.* An emergency response and remedial action plan (ERRAP) pursuant to rule 106.19(455B).

106.4(2) If the department finds the permit application information to be incomplete, it shall notify the applicant in writing of that fact and of the specific deficiencies and return the application materials to the applicant within 30 days of such notification. The applicant may reapply without prejudice.

567—106.5(455B) Citizen convenience center operations.

106.5(1) Solid waste shall be accepted only from citizens and small businesses residing in the service area designated in 106.4(1)“f.” Solid waste shall not be accepted from solid waste collection vehicles.

106.5(2) All solid waste received shall be loaded into dumpsters, compactors, or roll-off boxes and collected by solid waste collection vehicles. Solid waste shall not be loaded into solid waste transport vehicles.

106.5(3) Dumpsters, compactors, and roll-off boxes shall not be allowed to overflow, and solid waste shall be collected as often as necessary to prevent the attraction or harborage of vectors and to prevent a nuisance or public health hazard.

106.5(4) Litter shall be collected as often as necessary to prevent a nuisance or public health hazard.

567—106.6(455B,455D) Citizen convenience center reporting requirements. A citizen convenience center that directly disposes of solid waste outside Iowa shall report the following information, on a form provided by the department, to the department and local solid waste authority on a quarterly basis:

106.6(1) Tons of solid waste disposed of.

106.6(2) Comprehensive planning areas from which the solid waste originated, and the tons of solid waste disposed from each county and comprehensive planning area.

106.6(3) Destinations of all outgoing solid waste.

567—106.7(455B) Citizen convenience center closure requirements. The facility shall submit to the local political jurisdiction, the department, and department field office with jurisdiction over the citizen convenience center written notice of intent to permanently close the facility at least 180 days before closure. Closure shall be in conformance with the closure plan pursuant to 106.4(1)“k” and shall not be official until the department field office has given written certification of the completion of the closure plan and the following activities:

106.7(1) Proper disposal of all solid waste and litter at the site.

106.7(2) Removal of all dumpsters, compactors, roll-off boxes, and other solid waste receptacles.

106.7(3) Reporting of the completion of these activities to the local political jurisdiction, the department, and the department field office with jurisdiction over the citizen convenience center.

567—106.8(455B) Transfer station permit application requirements.

106.8(1) A transfer station permit applicant shall submit the following permit application information to the department:

a. The name, address, and telephone number of:

- (1) Owner of site where project will be located.
- (2) Permit applicant.
- (3) Official responsible for the operation of the project.
- (4) Professional engineer (P.E.) licensed in the state of Iowa and retained for the design of the facility.
- (5) Agency to be served by the project, if any.
- (6) Responsible official of agency to be served, if any.

b. A legal description of the site.

c. A map or aerial photograph locating the boundaries of the site and identifying:

- (1) North and other principal compass points.
- (2) Zoning and land use within 750 feet.
- (3) Homes and buildings within 750 feet.
- (4) Haul routes to and from the site with load limits or other restrictions.
- (5) Section lines or other legal boundaries.

d. Proof of the applicant’s ownership of the site and legal entitlement to use the site as a transfer station.

e. Days and hours of operation of the site.

f. The service area of the facility and political jurisdictions included in that area.

g. Type, source, and expected weight of solid waste to be handled per day, week, and year.

h. A description of the waste transfer and disposal process to be used.

- i. An organizational chart.
 - j. An engineering design including applicable approvals from responsible government agencies and public entities, and triplicate engineering plans and specifications completed by the engineer listed in 106.8(1)“a”(4), detailing how the site will comply with rules 106.9(455B), 106.10(455B), 106.12(455B), and 106.15(455B).
 - k. A plan of operations detailing how the site will comply with rules 106.11(455B) through 106.16(455B).
 - l. A closure plan detailing how the site will comply with rules 106.17(455B) and 106.18(455B).
 - m. An emergency response and remedial action plan (ERRAP) pursuant to rule 106.19(455B).
- 106.8(2)** If the department finds the permit application information to be incomplete, it shall notify the applicant in writing of that fact and of the specific deficiencies and return the application materials to the applicant within 30 days of such notification. The applicant may reapply without prejudice.

567—106.9(455B) Transfer station siting and location requirements. A transfer station shall meet the following requirements:

106.9(1) A transfer station shall not be located within a 100-year floodplain unless the design includes structures to prevent floodwater inundation from a 100-year flood of any area that comes into contact with solid waste or washwater.

106.9(2) A transfer station shall not be located within 500 feet of an educational or health care facility or permanent residence unless screening is utilized to minimize noise and visibility of operations. Such screening shall utilize natural components to the maximum extent possible. This requirement shall not apply if construction of the educational or health care facility or permanent residence began after the transfer station permit application was received by the department.

567—106.10(455B) Transfer station design standards.

106.10(1) *Transfer station building.* A transfer station shall include a building inside which all solid waste is unloaded from solid waste collection vehicles and loaded into solid waste transport vehicles. Truck-to-truck transfer of solid waste that is not incidental solid waste transfer is not allowed outside a transfer station building. A rear-loading solid waste transport vehicle that does not have any other open access and securely abuts the transfer station building so that minimal amounts of solid waste escape during loading shall qualify as being inside the building. The transfer station building shall meet the following requirements:

- a. All surfaces that come into contact with solid waste shall be enclosed by walls and a roof satisfactory to:
 - (1) Minimize dust and litter exiting the building.
 - (2) Keep precipitation out of the building.
 - (3) Prevent the attraction or harboring of vectors.
- b. All surfaces that come in contact with solid waste or washwater shall be impervious to liquids.
- c. The transfer station building shall have a drainage system that maintains a separation between stormwater and washwater.
- d. The transfer station building shall have a washwater collection system that directs washwater to a storage tank for later disposal, a sanitary sewer system, or equivalent as approved by the department. Storage tanks shall have high-level indicators or gauges.
- e. Each area where unloaded solid waste is stored during nonoperating hours shall be clearly marked and include a fire detection system.
- f. If solid waste is to be managed or stored in a surge pit, then effective odor control mechanisms such as, but not limited to, mist systems and air filters shall be required.
- g. If solid waste is to be managed or stored in a surge pit, then a sprinkler system shall be installed over that area.
- h. Each area where salvaged materials are stored shall be clearly marked.
- i. The transfer station building shall have adequate indoor and outdoor lighting that minimizes the difference in lighting when entering or exiting the building.
- j. The transfer station building shall have doors at each entrance and exit.

106.10(2) *Other transfer station design requirements.* A transfer station shall:

- a. Provide a secure perimeter fence, with lockable gate(s).
- b. Use a scale certified by the Iowa department of agriculture and land stewardship.
- c. Provide adequate queuing distance for vehicles entering and exiting the property such that lines of vehicles will not extend onto public streets during peak hours, unless approved by the appropriate local government authority.
- d. Provide signs or pavement markings indicating safe and proper on-site traffic patterns.
- e. Post a sign at the primary entrance to the facility specifying:
 - (1) Name and permit number of facility.
 - (2) Operating hours.
 - (3) Materials that are accepted or the statement "All materials must have prior approval."
 - (4) Telephone number of emergency contact person(s).

567—106.11(455B) Transfer station operating requirements. A transfer station shall perform its operations in a manner that complies with the following requirements:

106.11(1) Site access shall be controlled and limited to a time when a transfer station operator who has met the following training requirements is on duty:

- a. Has read, understands, and is able to implement the plan of operations pursuant to 106.8(1) "k."
- b. Has read, understands, and is able to implement the emergency response and remedial action plan pursuant to 106.8(1) "m."
- c. Is able to visually recognize universal symbols and markings, and indications of unacceptable materials pursuant to subrule 106.11(4).

d. Is certified by a training program approved by the department such as, but not limited to, the Solid Waste Association of North America's Managing Transfer Station Systems Training and Certification Course, if the facility is permitted for 20,000 tons or more per year of solid waste.

106.11(2) Solid waste shall be accepted only from generators within the service area designated in 106.8(1) "f."

106.11(3) All unloading, handling, processing, screening, open storage, loading, and similar activities or processes involving solid waste shall be performed inside the transfer station building. Truck-to-truck transfer of solid waste that is not incidental solid waste transfer is not allowed outside a transfer station building. A rear-loading solid waste transport vehicle that does not have any other open access and securely abuts the transfer station building so that minimal amounts of solid waste escape during loading shall qualify as being inside the building. Salvaged materials that do not attract or harbor vectors may be stored outside the building in clearly marked designated areas.

106.11(4) All solid waste accepted by the transfer station shall, at a minimum, be visually inspected by personnel capable of identifying hot loads and hazardous, infectious, radioactive, and other wastes not acceptable for disposal in a sanitary landfill.

106.11(5) Transfer station operators shall segregate and manage unacceptable wastes and hot loads in accordance with applicable laws, and in a manner as safe and responsible as practical.

106.11(6) Transfer station operators shall be allowed to salvage materials. Scavenging shall not be allowed.

106.11(7) The operation of the facility shall be carried out in a manner that attempts to minimize litter, dust, odor, noise, vibration, and the attraction or harborage of vectors.

106.11(8) The transfer station building shall be maintained at a level of cleanliness necessary to prevent a nuisance or public health hazard.

106.11(9) On-site litter shall be maintained at a level of cleanliness necessary to prevent a nuisance or public health hazard. Off-site litter shall be collected daily.

106.11(10) The exterior of all buildings shall be maintained in a reasonable aesthetic condition, and that prevents the attraction or harborage of vectors, so as not to create a nuisance or public health hazard.

106.11(11) Washwater management systems shall not be allowed to overflow and shall be inspected monthly and maintained in proper operating condition.

106.11(12) Any breach of a surface that prevents washwater from entering the ground and groundwater shall be repaired within 24 hours to make that surface impervious to liquids. If such repairs

cannot be made within 24 hours, the facility shall not allow solid waste or washwater to come into contact with the breached area until repairs are complete. If the facility cannot prevent solid waste or washwater from coming into contact with the breached area, the department may require the facility to shut down until repairs are completed.

106.11(13) Adequate provisions shall be made for the routine operational maintenance of the facility.

567—106.12(455B) Temporary solid waste storage at transfer stations.

106.12(1) *Areas permitted for storage.* Solid waste shall be stored at the transfer station in the following manner:

- a. Inside a transfer station building in a clearly marked designated area; or
- b. Inside a transfer station building in a surge pit; or
- c. Inside a secure solid waste transport vehicle, protected from precipitation and vectors.

106.12(2) *Storage time requirements.* Solid waste shall be stored no longer than the following periods of time, unless shorter storage times are required by the department or local government authority to prevent a nuisance or public health hazard:

- a. Inside a transfer station building without a surge pit or similar operational structure for not more than 48 hours, excluding Sundays and national holidays.
- b. Inside a transfer station building in a surge pit for not more than seven days, including Sundays and national holidays.
- c. Inside a solid waste transport vehicle designated to travel only via roadway for not more than 48 hours, excluding Sundays and national holidays.
- d. Inside a solid waste transport vehicle designated to travel via rail or navigable waterway, including intermodal container systems, for not more than seven days, including Sundays and national holidays.

567—106.13(455B,455D) Transfer station record-keeping requirements.

106.13(1) A transfer station shall maintain a copy of the following documents:

- a. Current permit(s), on site.
- b. Plan of operation, on site.
- c. Emergency response and remedial action plan, on site.
- d. Proof of financial assurance, on file.

106.13(2) A transfer station shall maintain records of the following information for a period of three calendar years:

- a. Tons of all solid waste disposed of quarterly.
- b. Destination of all outgoing solid waste.
- c. Washwater management system inspection log.
- d. Hot loads and hazardous, infectious, radioactive, or other unacceptable wastes found.
- e. Training received by transfer station operator(s) pursuant to 106.11(1).

567—106.14(455B,455D) Transfer station reporting requirements.

106.14(1) A transfer station shall report the following information, on a form provided by the department, to the department and local solid waste authority on a quarterly basis:

- a. Tons of solid waste disposed of.
- b. Comprehensive planning areas from which the solid waste originated, and the tons of solid waste disposed from each county and comprehensive planning area.
- c. Destinations of all outgoing solid waste.

106.14(2) A transfer station shall be inspected annually by an Iowa-licensed professional engineer (P.E.). The inspection shall, at a minimum, cover the design standards pursuant to rule 106.10(455B). The inspection report shall reflect the facility's compliance with respect to the department-approved design and construction. The annual report shall be submitted to the department and department field office with jurisdiction over the facility by the first workday in November each year.

567—106.15(455B) Solid waste transport vehicle construction and maintenance requirements.

106.15(1) The portion of a solid waste transport vehicle that contains solid waste shall be designed to prevent the accidental discharge of its contents, the attraction or harborage of vectors, and infiltration of precipitation. This design shall include a suitable cover that is not easily torn, shredded, broken, or otherwise breached under normal use.

106.15(2) Any solid waste transport vehicle that fails to meet the requirements of this rule shall be repaired before it is utilized in the transport or storage of solid waste.

106.15(3) All solid waste transport vehicles shall be cleaned at intervals frequent enough to prevent a nuisance or vector attraction.

106.15(4) Wastewater generated from the cleaning of the areas of the solid waste transport vehicles that hold solid waste shall be considered washwater and shall be managed accordingly.

567—106.16(455B) Solid waste transport vehicle operation requirements.

106.16(1) A solid waste transport vehicle's openings shall be securely closed before transport and during solid waste storage so as to prevent the loss of solid waste.

106.16(2) A solid waste transport vehicle shall be loaded with solid waste inside a transfer station building and in a manner that minimizes the spilling of materials. Truck-to-truck transfer of solid waste that is not incidental solid waste transfer is not allowed outside a transfer station building. A rear-loading solid waste transport vehicle that does not have any other open access and securely abuts the transfer station building so that minimal amounts of solid waste escape during loading shall qualify as being inside the building. Solid waste spilled from a solid waste transport vehicle during loading shall be collected as often as necessary to minimize litter, dust, or other fugitive debris.

106.16(3) If solid waste is spilled from a solid waste transport vehicle during transport that is not on transfer station property, the spilled solid waste shall be collected as soon as possible. The transfer station shall immediately report the spill to the department and the department field office with jurisdiction over the transfer station and spill location.

567—106.17(455B) Transfer station closure requirements. The facility shall submit to the local political jurisdiction, the department, and department field office with jurisdiction over the transfer station written notice of intent to permanently close the facility at least 180 days before closure. Closure shall be in conformance with the closure plan pursuant to 106.8(1) "I" and shall not be official until the department field office has given written certification of the completion of the closure plan and the following activities:

106.17(1) Proper disposal of all solid waste and litter at the site.

106.17(2) Cleaning the transfer station building, including the rinsing of all surfaces that have come in contact with solid waste or washwater.

106.17(3) Cleaning of all solid waste transport vehicles that will remain on site, including the rinsing of all surfaces that have come in contact with solid waste.

106.17(4) Removal and proper management of all washwater in the washwater management system.

106.17(5) Locking all doors, gates, entrances, and exits.

106.17(6) Reporting of the completion of these activities to the local political jurisdiction, the department, and the department field office with jurisdiction over the transfer station.

567—106.18(455B) Citizen convenience center and transfer station financial assurance. Permitted solid waste citizen convenience centers and transfer stations must obtain and submit a financial assurance instrument to the department for solid waste storage in accordance with this rule. The financial assurance instrument shall provide monetary funds to properly dispose of any solid waste that may remain at a facility due to the owner's or operator's failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

106.18(1) *No permit without financial assurance.* The department shall not issue or renew a permit to an owner or operator of a citizen convenience center or transfer station until a financial assurance instrument has been submitted to and approved by the department.

106.18(2) *Proof of compliance.* Proof of the establishment of the financial assurance instrument and compliance with this rule, including a current closure cost estimate, shall be submitted to the department

within 30 days of the close of the permit holder's first fiscal year that begins after July 17, 2002, or at the time of application for a permit for a new citizen convenience center or transfer station. The owner or operator must provide continuous coverage for closure and submit proof of compliance, including an updated closure cost estimate, with each permit renewal thereafter until released from this requirement by the department.

106.18(3) *Use of one financial assurance instrument for multiple permitted activities.* Citizen convenience centers and transfer stations required to maintain financial assurance pursuant to any other provisions of 567—Chapters 100 to 123 may satisfy the requirements of this rule by the use of one financial assurance instrument if the permit holder ensures that the instrument provides financial assurance for an amount at least equal to the current cost estimates for closure of all sanitary disposal project activities covered.

106.18(4) *Financial assurance amounts required.* The estimate submitted to the department must be certified by an Iowa-licensed professional engineer and must account for at least the following factors determined by the department to be minimal necessary costs for closure pursuant to rule 106.7(455B) for citizen convenience centers and rule 106.17(455B) for transfer stations, as applicable:

a. Third-party labor and transportation costs and total tip fees to properly dispose of all solid waste and litter at the facility equal to twice the maximum storage capacity of the facility. If materials are temporarily stored on site in transportation vehicles or waste receptacles, then this estimate shall include disposal costs for the maximum number of transportation vehicles and waste receptacles that can be on site at any one time.

b. The cost of hiring a third party to properly clean and decontaminate all equipment, storage facilities, holding areas and drainage collection systems. This estimate shall include the cost of properly disposing of a one-week volume of washwater from the facility. If the facility utilizes washwater storage tanks, then this estimate shall assume that the storage tanks are full and add that volume to the one-week volume.

c. The costs for maintaining financial assurance pursuant to any other provisions of 567—Chapters 100 to 123, if any, in accordance with subrule 106.18(3).

106.18(5) *Acceptable financial assurance instruments.* The financial assurance instrument shall be established in an amount equal to the cost estimate prepared in accordance with subrule 106.18(4) and shall not be canceled, revoked, disbursed, released, or allowed to terminate without the approval of the department. Financial assurance may be provided by cash in the form of a secured trust fund or local government dedicated fund, surety bond, letter of credit, or corporate or local government guarantee as follows:

a. Secured trust fund. The owner or operator of a citizen convenience center or transfer station or entity serving as a guarantor may demonstrate financial assurance for closure by establishing a secured trust fund that conforms to the requirements of this paragraph.

(1) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The fund shall be restricted for the sole purpose of funding closure activities at the facility, and a copy of the trust agreement must be submitted to the department and placed in the facility's official files.

(2) A secured trust fund shall name the department of natural resources as the entity authorized to draw funds from the trust, subject to the provision of proper notification to the trust officer of failure by the permittee to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) Moneys in the fund shall not be assigned for the benefit of creditors with the exception of the state.

(4) Moneys in the fund shall not be used to pay any final judgment against a permit holder arising out of the ownership or operation of the site during its active life or after closure.

(5) The owner or operator or another person authorized to conduct closure activities may request reimbursement from the trustee for closure expenditures as they are incurred. Requests for reimbursement shall be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure and if documentation of the justification for reimbursement has been submitted to the department for prior approval.

(6) If the balance of the trust fund exceeds the current cost estimate for closure at any time, the owner or operator may request withdrawal of the excess funds from the trustee so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

b. Local government dedicated fund. The owner or operator of a publicly owned citizen convenience center or transfer station or a local government serving as a guarantor may demonstrate financial assurance for closure by establishing a dedicated fund that conforms to the requirements of this paragraph.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, resolution or order as a restricted fund to pay for closure costs arising from the operation of the facility.

(2) A copy of the document establishing the dedicated fund must be submitted to the department and placed in the facility's official files.

(3) If the balance of the dedicated fund exceeds the current cost estimate for closure at any time, the owner or operator may withdraw excess funds so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

c. Surety bond. A surety bond must be written by a company authorized by the commissioner of insurance to do business in the state. The surety bond shall comply with the following:

(1) The bond shall be in a form approved by the commissioner of insurance and shall be payable to the department of natural resources.

(2) The bond shall be specific to a particular facility for the purpose of properly disposing of any solid waste that may remain on site due to the owner's or operator's failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) The owner or operator shall provide the department with a statement from the surety with each permit application renewal, noting that the bond is paid and current for the permit period for which the owner or operator has applied for renewal.

d. Letter of credit. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(1) The owner or operator must submit to the department a copy of the letter of credit and place a copy in the facility's official files.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the facility and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the facility's files.

(3) The letter of credit must be irrevocable and must be issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 90 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into a secured trust fund that meets the requirements of paragraph 106.18(5)"a." If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the secured trust fund established by the owner or operator. The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

e. Corporate guarantee. An owner or operator may meet the requirements of this rule by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a "substantial business relationship" with the owner or operator.

(1) The terms of the written guarantee must provide that within 30 days of the owner's or operator's failure to perform closure of a facility covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);

2. Establish a fully funded secured trust fund as specified in paragraph 106.18(5)“a” in the name of the owner or operator (payment guarantee); or

3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following three conditions:

1. A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor’s or Aaa, Aa, A, or Baa as issued by Moody’s; or

2. A ratio of less than 1.5 comparing total liabilities to net worth; or

3. A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities.

(3) The tangible net worth of the guarantor must be greater than the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(4) The guarantor must have assets amounting to at least the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(5) Record-keeping and reporting requirements. The guarantor must submit the following records to the department and place a copy in the facility’s official files:

1. A copy of the written guarantee between the owner or operator and the guarantor.

2. A letter signed by a certified public accountant and based upon a certified audit that:

- Lists all the current cost estimates covered by a guarantee including, but not limited to, cost estimates required by subrule 106.18(4); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40 CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and

- Provides evidence demonstrating that the guarantor meets the conditions of subparagraphs 106.18(5)“e”(2), (3) and (4).

3. A copy of the independent certified public accountant’s unqualified opinion of the guarantor’s financial statements for the latest completed fiscal year. In order for the guarantor to be eligible to use the guarantee, the guarantor’s financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this instrument. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the corporate guarantee, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

f. Local government guarantee. An owner or operator may demonstrate financial assurance for closure by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E.

(1) The terms of the written guarantee must provide that within 30 days of the owner’s or operator’s failure to perform closure of a facility covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);

2. Establish a fully funded secured trust fund as specified in paragraph 106.18(5)“a” in the name of the owner or operator (payment guarantee); or

3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following requirements:

1. If the guarantor has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the guarantor must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody’s, or AAA, AA, A, or BBB, as issued by Standard & Poor’s, on all such general obligation bonds; or

2. The guarantor must satisfy each of the following financial ratios based on the guarantor’s most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures

greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

(3) The guarantor must prepare its financial statements in conformity with generally accepted accounting principles or other comprehensive basis of accounting and have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa.

(4) A guarantor is not eligible to assure its obligations if:

1. The guarantor is currently in default on any outstanding general obligation bonds; or
2. The guarantor has any outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard & Poor's; or
3. The guarantor operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or
4. The guarantor receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement. A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism; or

5. The closure costs to be assured are greater than 43 percent of the guarantor's total annual revenue.

(5) The local government guarantor must include disclosure of the closure costs assured through the guarantee in its next annual audit report prior to the initial receipt of waste at the facility or prior to cancellation of an alternative financial assurance instrument, whichever is later. For the first year the guarantee is used to assure costs at a particular facility, the reference may instead be placed in the guarantor's official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(6) The local government owner or operator must submit to the department the following items:

1. A copy of the written guarantee between the owner or operator and the local government serving as guarantor for the closure costs at the facility.
2. A copy of the guarantor's most recent annual financial audit report indicating compliance with the financial ratios required by numbered paragraph 106.18(5) "f"(2)"2," if applicable, and the requirements of subparagraphs 106.18(5) "f"(3) and (4).
3. A letter signed by the local government's chief financial officer that lists all the current cost estimates covered by the guarantor, as described in subrule 106.18(4); and that provides evidence and certifies that the local government meets the conditions of subparagraphs 106.18(5) "f"(2), (3), (4) and (5).

106.18(6) Financial assurance cancellation and permit suspension.

a. A financial assurance instrument may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance prior to cancellation, as specified in this rule, or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

b. A financial assurance instrument shall be continuous in nature until canceled by the financial assurance provider or until the department gives written notification to the owner, operator, and financial assurance provider that the covered site has been properly closed. The financial assurance provider shall give at least 90 days' notice in writing to the owner or operator and the department in the event of any intent to cancel the instrument.

c. Within 60 days of receipt of a written notice of cancellation of financial assurance by the financial assurance provider, the owner or operator must provide the department an alternative financial assurance instrument. If a means of continued financial assurance is not provided within that 60 days, the department shall suspend the permit.

d. The owner or operator shall perform proper closure within 30 days of the permit suspension. For the purpose of this rule, "proper closure" means completion of all items pursuant to rule 106.7(455B) or 106.17(455B), as applicable, and subrule 106.18(4).

e. If the owner or operator does not properly close the site within the 30-day period allowed, the department shall file a claim with the financial assurance instrument provider to collect the amount of funds necessary to properly close the site.

f. An owner or operator who elects to terminate a permitted activity, whose renewal application has been denied, or whose permit has been suspended or revoked for cause must submit within 30 days of the termination of the permit a schedule for completing proper closure of the terminated activity. Closure completion cannot exceed 60 days from the date of termination of the permit.

g. The director may also request payment from any financial assurance provider for the purpose of completing closure when the following circumstances exist:

(1) The owner or operator is more than 15 days late in providing a schedule for closure or for meeting any date in the schedule for closure.

(2) The owner or operator declares an economic inability to comply with this rule, either by sending written notification to the director or through an action such as, but not limited to, filing for bankruptcy.

567—106.19(455B) Emergency response and remedial action plans. A citizen convenience center or transfer station shall develop, submit to the department for approval, and maintain on site a detailed emergency response and remedial action plan (ERRAP).

106.19(1) Submittal requirements.

a. The owner or operator of facilities that have been permitted prior to the effective date of these rules shall submit a complete detailed ERRAP that meets the requirements set forth in this rule no later than December 31, 2001.

b. Applications for a new permit after the effective date of this rule shall incorporate a complete detailed ERRAP that meets the requirements set forth in these rules.

c. An updated ERRAP that meets the requirements of this rule shall be submitted at the time of each permit renewal or reissuance application that is due after December 31, 2001.

d. An updated ERRAP shall be included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP.

e. Three sets of ERRAP documents shall be submitted for department approval.

106.19(2) Content. The content of ERRAP documents shall be concise and readily usable as a reference manual by facility managers and operators during emergency conditions. The ERRAP document content shall address at least the following primary issues in detail, unless project conditions render the specific issue as not applicable. To facilitate department review, the rationale for exclusion of any issues that are not determined to be applicable must be provided either in the body of the plan or as a supplement. Additional ERRAP requirements unique to the facility shall be addressed, as applicable.

a. Facility information.

- (1) Permitted agency.
- (2) DNR permit number.
- (3) Facility description.
- (4) Responsible official and contact information.
- (5) Site and environs map.

b. Regulatory requirements.

- (1) Iowa Code section 455B.306(6) “d” criteria citation.
- (2) Reference to provisions of the permit.

c. Emergency conditions—response activities—remedial action.

- (1) Failure of utilities.
 1. Short-term (48 hours or less).
 2. Long-term (over 48 hours).
- (2) Weather-related events.
 1. Tornado.
 2. Windstorms.
 3. Intense rainstorms and erosion.
 4. Lightning strikes.

5. Flooding.
6. Event and postevent conditions.
- (3) Fire and explosions.
 1. Waste materials.
 2. Buildings and site.
 3. Equipment.
 4. Fuels.
 5. Utilities.
 6. Facilities.
 7. Working area.
 8. Hot loads.
 9. Waste gases.
 10. Evacuation.
- (4) Regulated waste spills and releases.
 1. Waste materials.
 2. Washwater.
 3. Waste gases.
 4. Waste stockpiles or storage facilities.
 5. Waste transport systems.
 6. Litter and airborne particulate.
 7. Site drainage systems.
 8. Off-site releases.
- (5) Hazardous material spills and releases.
 1. Load-check control points.
 2. Mixed waste deliveries.
 3. Fuels.
 4. Waste gases.
 5. Site drainage systems.
 6. Off-site releases.
- (6) Mass movement of land and waste.
 1. Earthquakes.
 2. Slope failure.
 3. Waste shifts.
- (7) Emergency and release notifications and reporting.
 1. Federal agencies.
 2. State agencies.
 3. County and city agencies.
 4. News media.
 5. Public and private facilities with special populations within five miles.
 6. Emergency response agencies and contact information.
 7. Reporting requirements and forms.
- (8) Emergency waste management procedures.
 1. Communications.
 2. Temporary discontinuation of services—short- and long-term.
 3. Facilities access and rerouting.
 4. Waste acceptance.
 5. Wastes in process.
- (9) Primary emergency equipment inventory.
 1. Major equipment.
 2. Fire hydrants and water sources.
 3. Off-site equipment resources.
- (10) Emergency aid.

1. Responder contacts.
2. Medical services.
3. Contracts and agreements.
- (11) ERRAP training requirements.
 1. Training providers.
 2. Employee orientation.
 3. Annual training updates.
 4. Training completion and record keeping.

(12) Reference tables, figures and maps.

These rules are intended to implement Iowa Code section 455B.304.

[Filed 5/24/02, Notice 3/20/02—published 6/12/02, effective 7/17/02]

[Filed 9/6/07, Notice 1/3/07—published 9/26/07, effective 10/31/07]

CHAPTER 107
BEVERAGE CONTAINER DEPOSITS

[Prior to 7/1/83, DEQ Ch 34]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—107.1(455C) Scope. Rescinded **ARC 6791C**, IAB 1/11/23, effective 12/16/22.

567—107.2(455C) Definitions. For the purpose of this chapter, the following terms shall have the meaning indicated in this rule. The definitions set out in Iowa Code section 455C.1 shall be considered to be incorporated verbatim in this rule.

“*Act*” means Iowa Code chapter 455C.

“*Approved redemption center*” means a redemption center approved by the department pursuant to 107.4(1).

“*Carbonated*” means charged under pressure with carbon dioxide.

“*Distributor redemption center*” means a redemption center that satisfies the requirements of Iowa Code section 455C.14.

“*Emboss*” means to raise the surface in relief.

“*Exempt beverage container*” means a beverage container that is not marked with the words “Iowa Refund 5¢” because it is a refillable glass beverage container having a brand name permanently marked on it and having a refund value of 5 or more cents or because it is a refillable metal or plastic beverage container that has been exempted, in accordance with the procedure of subrule 107.3(7), from the requirement of having the refund value marked on the container. An exempt beverage container is exempt from having the words “Iowa Refund 5¢” indicated on the container but is not necessarily exempt from the minimum deposit and redemption requirements of this chapter.

“*Handling fee*” or “*fee*” means the amount reimbursed by a distributor, in addition to the return of the 5 cent refund value, in an amount that is 1 cent per beverage container for containers accepted from a dealer agent or 3 cents per beverage container accepted from a participating dealer or redemption center. Only one fee shall be charged per container.

“*High-contrasting color*” in reference to labeling requirements means a clear differentiation in hue, value, and intensity with the background on which the redemption message appears, surrounding artwork, and other nearby printed information.

“*Incise*” means to scratch the surface to produce legible letters or characters at a precise width and depth.

“*Indelibly*” means that the refund value is permanently affixed on the beverage container and cannot be smeared or removed during regular use from the point of being offered for sale until the point of redemption.

“*Mineral water*” means water naturally or artificially infused with mineral salts or gases. Mineral water may be carbonated or uncarbonated.

“*Soda water*” means water that has been carbonated.

“*Soft drink*” means any nonalcoholic liquid other than mineral water or soda water intended for human consumption.

“*Unapproved redemption center*” means a redemption center that is not an approved redemption center.

This rule is intended to implement Iowa Code sections 455C.1 and 455C.9.

[**ARC 1956C**, IAB 4/15/15, effective 5/20/15; **ARC 6791C**, IAB 1/11/23, effective 12/16/22]

567—107.3(455C) Labeling requirements.

107.3(1) All beer, wine, alcoholic liquor, mineral water, soda water and similar carbonated soft drink containers (other than exempt containers) sold or offered for sale in Iowa by a dealer shall have the words “Iowa Refund 5¢” or “IA 5¢” clearly, indelibly and legibly indicated on the container. Any abbreviation of the words “Iowa Refund” other than as provided in this subrule shall be submitted to and approved by the department.

107.3(2) The minimum size of the words “Iowa Refund 5¢” or “IA 5¢” and all approved abbreviations shall be a minimum of 9-point type (approximately .125 inch or 3 millimeters) if the words are embossed or incised and 18-point type (approximately .25 inch or 6 millimeters) if the words are otherwise affixed to the container. A stamp or label may have the words “Iowa Refund 5¢” or “IA 5¢” in less than 18-point type if the label is submitted to the department and the department determines that the high-contrasting color or the characteristics of the stamp or label make the stamp or label as easy to discern as a stamp or label with 18-point type.

107.3(3) The words “Iowa Refund 5¢” or “IA 5¢” shall be indicated by embossing (raised letters), by incising, by printing in high-contrasting color, by a stamp or label of high-contrasting color, or other method approved by the department securely and permanently affixed to the container.

107.3(4) Reserved.

107.3(5) The words “Iowa Refund 5¢” or “IA 5¢” shall be on the top or on the cylindrical portion of a metal beverage container. The words “Iowa Refund 5¢” or “IA 5¢” shall be on the conical portion of a glass or plastic beverage container so that the words are visible from above or shall be on the product label. The placement of refund information solely on the bottom of the beverage container is prohibited.

107.3(6) An example of the label or labeled container may, but need not, be submitted to the department for informal approval.

107.3(7) An application for exemption from the requirement of having the words “Iowa Refund 5¢” or “IA 5¢” indicated on the container shall be submitted to the department and shall contain:

- a. The name, address and telephone number of the applicant;
- b. The refund value of the container; and
- c. A statement of why the container can be readily and permanently identified by consumers as subject to a deposit.

107.3(8) An example of the container for which the exemption is being requested shall be sent to the department along with the application required in subrule 107.3(7). The example may consist of photographic images or empty containers. Examples submitted to the department shall not contain any liquid.

107.3(9) The department may exempt the container if the department determines that the container is subject to a deposit of 5 or more cents and that consumers can readily and permanently identify the container as one subject to a deposit.

107.3(10) Automatic exemption. Beverage containers sold in Iowa containing alcoholic liquor as defined in Iowa Code section 123.3(5) where the total capacity of the container is not more than 50 milliliters are automatically exempted from the labeling requirement of rule 567—107.3(455C). However, such beverage containers remain subject to the remainder of this chapter.

[ARC 6791C, IAB 1/11/23, effective 12/16/22]

567—107.4(455C) Redemption centers. The Act provides for both approved and unapproved redemption centers. Both approved and unapproved redemption centers redeem empty beverage containers and pay the refund value to consumers. Only approved redemption centers can satisfy the requirements of Iowa Code sections 455C.4(2)“a”(2) and 455C.4(2)“a”(3) and 2022 Iowa Acts, Senate File 2378, section 19.1(a) or 19.1(b). Additionally, only approved redemption centers will be listed on the department’s electronic database pursuant to Iowa Code section 455C.4(2)“c.”

107.4(1) *Approved redemption centers.*

- a. Any person may file with the department an application for approval of a redemption center.
- b. An annual application for approval of a redemption center shall be submitted to the department electronically.

(1) Initial application. All redemption centers in existence prior to January 1, 2023, that wish to be considered approved under this chapter must apply for approval pursuant to the requirements of subrule 107.4(1) by January 31, 2023. This will ensure that the approved redemption center list published by the department is accurate and includes existing redemption centers. All other redemption centers that wish to be considered approved under this chapter (i.e., new redemption centers established any time after January 1, 2023) should file their application within 30 days of starting their business.

(2) Annual renewals. All redemption centers should file their annual renewal application by January 31 of each subsequent year to allow the department to update its approved redemption center list in a timely manner.

(3) Application requirements. A redemption center must submit a separate application for each facility, including if a redemption center is operating a mobile redemption system for a dealer or dealers. The information on the application will be included in an electronic database for consumers to locate the nearest approved redemption center; as such, applications must be resubmitted annually to ensure that contact information remains accurate. There is no fee to submit the application. The application shall include the following information:

1. Name, address and telephone number of the redemption center;
2. Name, address and telephone number of the person or persons responsible for the establishment and operation of the redemption center;
3. A statement that the operator of the redemption center understands it must accept all redeemable containers, except for those containers exempted in rule 567—107.13(455C);
4. Whether the redemption center will be operating a mobile redemption system and the location(s) where the system will be operated.
 - c. The department will issue an electronic order of approval once a complete application is received.
 - d. The department may at any time rescind the order approving a redemption center if the department determines, after notice and hearing, that the redemption center is in violation of the Act or this chapter or that the redemption center is no longer meeting the above criteria.
 - e. An approved redemption center shall accept from consumers and shall pay the refund value for all beverage containers that bear an Iowa refund value and those containers exempted from the labeling requirement pursuant to subrule 107.3(10).
 - f. When an approved redemption center is closing permanently, it shall give to the department notice that includes the redemption center's final date of operation. As of the final date of operation, the redemption center's approval as a redemption center shall be terminated and a dealer it was approved to serve shall no longer be an exempt dealer. An approved redemption center must notify the department and any dealers or distributors with which the redemption center has agreements 30 days prior to the redemption center's closing.

107.4(2) *Unapproved redemption centers.* Nothing in the Act or this chapter prevents a person from establishing a redemption center that has not been approved by the department. These facilities are not approved redemption centers as required by some sections of the Act.

107.4(3) *Distributor redemption centers.*

a. Each beer distributor selling nonrefillable metal beverage containers in this state shall provide individually or collectively by contract or agreement with a dealer, person operating a redemption center or another person, at least one facility in the county seat of each county where refused empty nonrefillable metal beverage containers, refused pursuant to rule 567—107.13(455C), having a readable refund value indication as required by this chapter may be accepted and redeemed. In cities having a population of 25,000 or more, the number of the facilities provided shall be one for each 25,000 population or a fractional part of that population.

b. Distributor redemption centers may be either “approved” or “unapproved.” To be “approved,” the facility must submit an application pursuant to subrule 107.4(1), which includes the requirement to accept more than just metal beverage containers.

[ARC 6791C, IAB 1/11/23, effective 12/16/22]

567—107.5(455C) Redeemed containers—use. Rescinded ARC 6791C, IAB 1/11/23, effective 12/16/22.

567—107.6 Reserved.

567—107.7(455C) Redeemed containers must be reasonably clean. Rescinded ARC 6791C, IAB 1/11/23, effective 12/16/22.

567—107.8(455C) Miscellaneous requirements.

107.8(1) Beverage containers “sold” on interstate carriers, such as trains, planes, or buses that travel through Iowa, are not subject to the deposit and labeling requirements of the Act.

107.8(2) Transfer tanks, premix tanks and beer kegs are not subject to the deposit and labeling requirements of the Act.

107.8(3) Return limits. Dealers may limit the number of containers returned by an individual to 120 containers in a 24-hour period. Redemption centers may limit the number of containers returned by an individual to 500 containers in a 24-hour period.

107.8(4) A redemption center or participating dealer must have the written consent of the applicable distributor or manufacturer prior to crushing cans or containers.

[ARC 6791C, IAB 1/11/23, effective 12/16/22]

567—107.9(455C) Pickup and acceptance of redeemed containers by distributor.

107.9(1) *Pickup and acceptance from participating dealers.* A distributor shall accept and pick up from a participating dealer served by the distributor empty beverage containers that bear an Iowa refund value and are of the kinds, sizes and brand names sold by the distributor. The distributor shall pick up the empty beverage containers at least weekly, or when the distributor delivers the beverage product to the dealer if deliveries are less frequent than weekly, unless otherwise agreed to by both the distributor and the dealer.

107.9(2) *Pickup and acceptance from approved redemption centers.* A distributor shall accept and pick up from an approved redemption center all empty beverage containers that bear an Iowa refund value and are of the kinds, sizes and brand names sold by the distributor. The distributor shall pick up the empty beverage containers at least weekly unless otherwise agreed to by both the distributor and the approved redemption center.

107.9(3) *Acceptance of redeemed containers from dealer agents.* A distributor shall accept delivery of empty beverage containers from a dealer agent provided that the containers were picked up by the dealer agent within the distributor’s geographic service area and that they bear an Iowa refund value and are of the kinds, sizes and brand names sold by the distributor.

107.9(4) *Notification of frequency.* A distributor shall notify each participating dealer served by the distributor of the intended frequency of pickup. A distributor shall notify each redemption center from which the distributor is required to pick up containers of the intended frequency of pickup.

107.9(5) *Partial pickup.* A distributor which picks up containers more often than the required frequency shall not be required to pick up all available containers from a participating dealer or redemption center at each pickup provided that all available containers are picked up from the dealer or redemption center within the required frequency.

[ARC 6791C, IAB 1/11/23, effective 12/16/22]

567—107.10(455C) Dealer agent lists. A dealer agent shall provide to a distributor upon request a list of the dealers that the dealer agent is serving.

567—107.11(455C) Refund value stated on containers—exceptions. Rescinded ARC 6791C, IAB 1/11/23, effective 12/16/22.

567—107.12(455C) Education. Rescinded ARC 6791C, IAB 1/11/23, effective 12/16/22.

567—107.13(455C) Refusing payment of the refund value. A distributor, participating dealer, or redemption center may refuse to pay the refund value and, if applicable, the handling fee in the following situations:

107.13(1) *Nonparticipating dealers.* A dealer may refuse to accept any beverage container and pay the refund value on a container if the dealer is in compliance with one of the requirements of Iowa Code section 455C.4 that allows the dealer not to participate in the bottle redemption program established in Iowa Code chapter 455C, and the dealer has complied with those provisions requiring proper notification to consumers of the approved redemption centers where the containers may be redeemed.

107.13(2) Refusal of certain brands (e.g., store brands).

a. For any beverage container subject to the Iowa beverage container control law, all distributors and manufacturers must charge a 5-cent deposit for each container delivered by that distributor or manufacturer to a dealer and must pick up, or facilitate the pickup of, the container from a participating dealer or an approved redemption center. This includes, at a minimum, reimbursing the participating dealer or approved redemption center for the refund value and the applicable handling fee. The requirements of this paragraph apply regardless of the relationship between the distributor or manufacturer and the dealer.

b. Any approved redemption center may refuse to accept containers for redemption if there is no distributor or manufacturer providing reimbursement and paying the requisite fee for the given container. In such cases, the redemption center shall notify the department and must post a notice of the brands it will not accept.

107.13(3) Redeemed containers must be reasonably clean and intact. Consumers shall return containers in a reasonably clean and intact condition. For a refillable beverage container, the container must hold liquid, be able to be resealed and be in its original shape. A nonrefillable glass container may be chipped, but it may not have the bottom broken out or the neck broken off. A nonrefillable metal container may be dented or partially crushed but may not be crushed flat. In order to be redeemed, an empty beverage container shall be dry and free of foreign materials other than the dried residue of the beverage. Redemption centers and participating dealers may refuse to redeem containers that are not reasonably clean and intact, as well as containers that do not have an Iowa 5-cent redemption label and containers that have had the Iowa 5-cent label removed or if the label is illegible for any reason.

[ARC 6791C, IAB 1/11/23, effective 12/16/22]

567—107.14(455C) Payment of refund value by distributors.

107.14(1) Payment to participating dealers. A distributor shall issue to a participating dealer payment of the refund value and handling fee within one week following pickup or when the dealer pays the distributor for the beverages, if payment is less frequent than weekly pursuant to an agreement between the distributor and participating dealer.

107.14(2) Payment to approved redemption centers. A distributor shall issue to an approved redemption center payment of the refund value and handling fee within one week following pickup unless otherwise agreed to by both the distributor and the redemption center.

107.14(3) Payment to redemption centers and dealer agents delivering containers to distributors. A distributor shall issue to a redemption center or dealer agent payment of the refund value and handling fee within one week of delivery and acceptance of empty beverage containers, unless otherwise agreed to by both the redemption center and the distributor or by both the dealer agent and the distributor, as the case may be.

[ARC 6791C, IAB 1/11/23, effective 12/16/22]

567—107.15(455C) Sales tax on deposits. The department of revenue has determined that the payment of the deposit by a consumer is not a sale subject to the payment of additional sales tax.

These rules are intended to implement Iowa Code chapter 455C.

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[Filed Emergency After Notice ARC 6791C (Notice ARC 6632C, IAB 11/2/22), IAB 1/11/23,
effective 12/16/22]

- ¹ The Administrative Rules Review Committee at their January 4, 1979, meeting delayed [DEQ 34.8(1)] 107.8(1) under provisions of 67 GA, SF 244, §19.
- ² Effective date of amendments to 567—107.1(455C) to 567—107.15(455C) adopted as ARC 1538B delayed 70 days by the Administrative Rules Review Committee at its meeting held May 15, 2002. At its meeting held July 9, 2002, the Committee delayed the effective date until adjournment of the 2003 Session of the General Assembly. At its meeting held August 13, 2002, the Committee lifted the delay, with the exception of 107.4(3) “d,” 107.4(4), 107.9(2), 107.9(3) and the second paragraph of 107.14, which were placed under Session Delay and remained delayed until December 17, 2002, when amendments published January 8, 2003, became effective.

CHAPTER 108
BENEFICIAL USE DETERMINATIONS:
SOLID BY-PRODUCTS AS RESOURCES AND ALTERNATIVE COVER MATERIAL
[Prior to 7/1/83, DEQ Ch 39]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—108.1(455B,455D) Purpose. The purpose of this chapter is to establish rules for determining when a solid by-product is a resource and not a solid waste. Solid by-products determined by the department not to be a solid waste through a beneficial use determination may not be subject to all sanitary disposal project (SDP) permitting requirements. Furthermore, the purpose of this chapter is to encourage the utilization of solid by-products as resources when such utilization improves, or at a minimum does not adversely affect, human health and the environment.

567—108.2(455B,455D) Applicability and compliance.

108.2(1) These rules apply to industrial, commercial, and institutional generators and users or proposed users of solid by-products and to sanitary landfills utilizing or desiring to utilize alternative cover material. These rules apply to solid by-products that before receiving a beneficial use determination by the department were being disposed of as solid waste. These rules do not apply to solid by-products that have already been disposed of as solid waste by the generator.

108.2(2) These rules do not pertain to the land application of solid waste. For rules pertaining to the land application of solid waste, see 567—Chapter 121. However, for solid by-products that are land-applied pursuant to 567—Chapter 121, a variance from some or all of the requirements of 567—Chapter 121 may be gained through receipt of a beneficial use determination from the department.

108.2(3) These rules do not pertain to solid waste processing operations pursuant to 567—Chapter 104. However, for solid by-products that are processed pursuant to 567—Chapter 104, a variance from some or all of the requirements of 567—Chapter 104 may be gained through receipt of a beneficial use determination from the department.

108.2(4) These rules do not pertain to solid waste composting pursuant to 567—Chapter 105. However, for solid by-products that are composted pursuant to 567—Chapter 105, a variance from some or all of the requirements of 567—Chapter 105 may be gained through receipt of a beneficial use determination from the department.

108.2(5) Beneficial use determinations granted by the department before April 23, 2003, shall remain in effect unless specifically addressed by these rules or by written notification pursuant to 567—108.11(455B,455D).

108.2(6) The issuance of a beneficial use determination by the department relieves the generator and user(s) of all Iowa solid waste requirements specifically noted in the written determination. Requirements that may be relieved by a beneficial use determination may include rules, SDP permits, and permit conditions and variances. Solid by-products that have not received a beneficial use determination by the department are subject to all of Iowa's regulations pertaining to solid waste. The issuance of a beneficial use determination by the department in no way relieves the generator or user of the responsibility of complying with all other local, state, and federal statutes, ordinances, and rules or other applicable requirements.

567—108.3(455B,455D) Definitions. For the purposes of this chapter, the following terms shall have the meaning indicated in this chapter. The definitions set out in Iowa Code section 455B.301 shall be considered to be incorporated verbatim in these rules.

“Alternative cover material” means a substitute material or mix of materials that can be utilized in lieu of soil as cover material at a sanitary landfill.

“Beneficial use” means a specific utilization of a solid by-product as a resource, that constitutes reuse rather than disposal, does not adversely affect human health or the environment, and is approved by the department.

“Beneficial use determination” means a written formal decision or rule issued by the department as approval for a solid by-product to be utilized in a specific manner as a beneficial use.

“Coal combustion by-product” means any solid by-product produced by the burning of coal, by itself or in conjunction with natural gas or other fossil fuel, which is suitable for disposal as solid waste in a sanitary landfill. Examples include boiler slag, bottom ash, fly ash, and flue gas desulfurization by-products from pollution control equipment. Coal combustion by-products are also referred to as coal combustion residue.

“Cover material” means soil placed as daily, intermediate, or final cover at a sanitary landfill.

“Fill material” means material that is used to raise the elevation of, take up space in, or build up the level of the land. For the purposes of this chapter, fill material is not considered subbase for hard-surface road construction.

“Foundry sand” means a solid by-product from the foundry industry that is derived from molding, core-making, and casting cleaning processes that primarily contain sand, olivine, or clay and that is suitable for disposal as solid waste in a sanitary landfill.

“High water table” is the position of the water table which occurs in the spring in years of normal or above-normal precipitation.

“Resource” means a solid by-product that can provide greater benefit to the environment or human welfare in its beneficial use as a safe and effective substitute for a raw material, fuel or energy source, or natural resource, rather than being disposed of as a solid waste in a sanitary landfill.

“Solid by-product” means a secondary material or residual, produced or created by an industrial, commercial or institutional process or activity, that has been source separated by the generating entity and that would otherwise be disposed of as solid waste. Solid by-products are composed of materials suitable for disposal as solid waste in a sanitary landfill.

“Subbase for hard-surface road construction” means material that is used in subsurface applications for the construction of roads, including their shoulders, and parking lots that have hard surfaces such as concrete or asphalt. For the purposes of this chapter, subbase for hard-surface road construction is not considered fill material.

“Suitable for disposal as solid waste in a sanitary landfill” means that the material is in compliance with all state and federal rules and regulations pertaining to what may be disposed of in an Iowa sanitary landfill. Such materials are at a minimum nonhazardous and nonradioactive, are solid or semisolid, and do not contain free liquids pursuant to the Paint Filter Liquids Test (Reference: 40 CFR 258.28).

“Vector” means a carrier organism that is capable of transmitting a pathogen from one organism to another. Vectors include, but are not limited to, birds, rats and other rodents, and insects.

“Water table” means the water surface below the ground at which the unsaturated zone ends and the saturated zone begins.

567—108.4(455B,455D) Universally approved beneficial use determinations. The following solid by-products may be utilized as resources in the specific manners listed provided that such utilization is in compliance with 567—108.6(455B,455D) and 567—108.7(455B,455D). Unless a user is otherwise notified by the department pursuant to 567—108.11(455B,455D), such utilization does not require further approval from the department.

108.4(1) Alumina. Alumina may be used as a raw material in the manufacture of cement or concrete products. Alumina includes refractory brick for the purpose of this subrule.

108.4(2) Asphalt shingles. Asphalt shingles that are certified, consistent with federal regulations (Reference: Appendix E, Subpart E, 40 CFR Part 763, Section 1, Polarized Light Microscopy), as not containing more than 1 percent asbestos may be used as follows:

- a. Raw material in the manufacture of asphalt products.
- b. Subbase for hard-surface road construction.
- c. Road surfacing granular material.
- d. Alternative cover material at a sanitary landfill pursuant to 567—108.8(455B,455D).

108.4(3) Cement kiln dust. Cement kiln dust may be used as follows:

- a. Raw material in the manufacture of absorbents.
- b. Raw material in the manufacture of cement or concrete products.

- c. Subbase for hard-surface road construction.
- d. A soil amendment pursuant to 567—Chapter 121 and the rules of the Iowa department of agriculture and land stewardship or a compost amendment.
- e. A stabilizer for manure and waste sludge.
- f. A soil stabilizer for construction purposes.
- g. Fill material pursuant to 108.6(1).

108.4(4) Coal combustion by-products.

- a. Coal combustion fly ash and flue gas desulfurization by-products may be used as follows:

- (1) Raw material in manufactured gypsum, wallboard, plaster, or similar product.
- (2) Raw material in manufactured calcium chloride.
- (3) Raw material in the manufacture of absorbents.
- (4) Fill material pursuant to 108.6(1).
- (5) Alternative cover material at a sanitary landfill pursuant to 567—108.8(455B,455D).

- b. Coal combustion fly ash or bottom ash or boiler slag may be used as follows:

- (1) Raw material in the manufacture of cement or concrete products.
- (2) Raw material to be used in mineral recovery.
- (3) Raw material in the manufacture of asphalt products.
- (4) Raw material in plastic products.
- (5) Subbase for hard-surface road construction.
- (6) Soil stabilization for construction purposes.
- (7) Fill material pursuant to 108.6(1).
- (8) Alternative cover material at a sanitary landfill pursuant to 567—108.8(455B,455D).

- c. Coal combustion bottom ash may also be used as follows:

- (1) Traction agent for surfaces used by vehicles.
- (2) Sandblasting abrasive.

108.4(5) Compost. Cured or finished compost, as defined in 567—Chapter 105, is not solid waste and may be used for any purpose recognized by the U.S. Composting Council or the department.

108.4(6) Foundry sand. Foundry sand may be used as follows:

- a. Raw material in the manufacture of asphalt products.
- b. Raw material in the manufacture of cement or concrete products.
- c. Leachate control drainage material at a sanitary landfill.
- d. Subbase for hard-surface road construction.
- e. Fill material pursuant to 108.6(1).
- f. Emergency flood control use for sandbags.
- g. Alternative cover material at a sanitary landfill pursuant to 567—108.8(455B,455D).

108.4(7) Glass. Uncontaminated, unleaded glass may be used as follows:

- a. Raw material in the manufacture of asphalt products.
- b. Fill material pursuant to 108.6(1).
- c. Sandblasting or other abrasive.
- d. Leachate control drainage material at a sanitary landfill.
- e. Filter media.
- f. Subbase for hard-surface road construction.
- g. Alternative cover material at a sanitary landfill pursuant to 567—108.8(455B,455D).

108.4(8) Gypsum and gypsum wallboard.

- a. All gypsum and gypsum wallboard may be used as follows:

- (1) Raw material in the manufacture of absorbents.
- (2) Raw material in the manufacture of other gypsum products, wallboard, plaster, or similar products.
- (3) Alternative cover material at a sanitary landfill pursuant to 567—108.8(455B,455D).

b. Gypsum and gypsum wallboard that have not been treated to be water-resistant or flame-retardant may be used as a calcium additive for agricultural use or soil amendment pursuant to 567—Chapter 121 or a compost amendment.

108.4(9) Lime. Lime produced as a by-product of public water supplies may be used as follows:

a. A soil amendment pursuant to 567—Chapter 121 and the rules of the Iowa department of agriculture and land stewardship or a compost amendment.

b. Raw material in the manufacture of calcium carbonate or similar substance.

108.4(10) *Lime kiln dust.* Lime kiln dust may be used as follows:

a. Raw material in the manufacture of absorbents.

b. Raw material in the manufacture of cement or concrete products.

c. Subbase for hard-surface road construction.

d. A soil amendment pursuant to 567—Chapter 121 and the rules of the Iowa department of agriculture and land stewardship or a compost amendment.

e. A stabilizer for manure and waste sludge.

f. A soil stabilizer for construction purposes.

g. Fill material pursuant to 108.6(1).

108.4(11) *Paper mill sludge.* Uncontaminated, dewatered paper mill sludge may be used as follows:

a. A fuel or energy source.

b. Bulking agent or carbon source for composting.

c. Animal bedding.

d. Raw material in the manufacture of absorbents.

e. Alternative cover material at a sanitary landfill pursuant to 567—108.8(455B,455D).

108.4(12) *Rubble.* Uncontaminated rubble such as concrete, brick, asphalt pavement, soil and rock may be used for fill, landscaping, excavation or grading or as a substitute for conventional aggregate. Asphalt, however, shall not be used for any of the aforementioned uses if the use will cause the asphalt to be placed in a waterway or wetland or any waters of the state or within the high water table.

108.4(13) *Sandblasting abrasives.* Sandblasting abrasives that do not contain lead-based paint may be used as follows:

a. Raw material in the manufacture of cement or concrete products.

b. Raw material in the manufacture of asphalt products.

c. Subbase for hard-surface road construction.

d. Raw material in the manufacture of abrasive products.

e. Fill material pursuant to 108.6(1).

f. Alternative cover material at a sanitary landfill pursuant to 567—108.8(455B,455D).

108.4(14) *Soil, including petroleum-contaminated soil.*

a. Uncontaminated soil may be used for fill, landscaping, excavation or grading, or other suitable purpose.

b. Petroleum-contaminated soils that have been decontaminated to the satisfaction of the department pursuant to 567—Chapter 120 may be used as follows:

(1) Fill material at the original excavation site pursuant to 108.6(1).

(2) Alternative cover material at a sanitary landfill pursuant to 567—108.8(455B,455D).

108.4(15) *Tires.* This chapter does not pertain to tires other than those used as alternative cover material pursuant to 567—108.8(455B,455D). Refer to 567—Chapter 117 for rules regarding the beneficial use of tires.

108.4(16) *Wastewater filter sand.* Wastewater filter sand may be used as follows:

a. Fill material pursuant to 108.6(1).

b. Subbase for hard-surface road construction.

108.4(17) *Wood.* Uncontaminated, untreated or raw wood may be used as follows:

a. A fuel or energy source.

b. Bulking agent for composting.

c. Mulch.

d. Animal bedding.

e. Raw material in the manufacture of paper products, particle board, or similar materials.

108.4(18) *Wood ash.* Ash from the combustion of uncontaminated, untreated or raw wood may be used as follows:

a. A soil amendment pursuant to 567—Chapter 121.

- b. A carbon source for composting.
- c. Raw material in the manufacture of cement or concrete products.
- d. Fill material pursuant to 108.6(1).

567—108.5(455B,455D) Application requirements for beneficial use determinations other than alternative cover material. Unless the beneficial use is approved pursuant to 567—108.4(455B,455D), the applicant shall submit the following application information to the department. The department may request that additional information be submitted in order to make a beneficial use determination. The department may also require specific conditions on a beneficial use determination and issue a temporary beneficial use determination on a trial basis.

The generator of a solid by-product may apply to the department in writing for a beneficial use determination. If the department finds the application information to be incomplete, then it shall notify the applicant in writing of that fact and of the specific deficiencies and return the application materials to the applicant within 30 days of such notification. The applicant may reapply without prejudice.

108.5(1) The name, address, and telephone number of:

- a. Owner of the site where the project will be located.
- b. Applicant for the beneficial use determination.
- c. Official responsible for the operation of the project.
- d. Professional engineer (P.E.) licensed by the state of Iowa and retained for the project, if any. The department may, at its sole discretion, require the applicant to retain a professional engineer for the project or specific parts thereof.
- e. Agency to be served by the project, if any.
- f. Responsible official of agency to be served.

108.5(2) A description of the solid by-product under review and its proposed use.

108.5(3) The chemical and physical characteristics of the solid by-product under review and of each type of proposed product.

108.5(4) A demonstration that there is a known or reasonably probable market for the intended use of the solid by-product under review by providing one or more of the following:

- a. A contract to purchase or utilize the solid by-product for the use proposed.
- b. A description of how the solid by-product will be used.
- c. A demonstration that the solid by-product complies with industry standards and specifications for that product.
- d. Other documentation that a market for the solid by-product exists.

108.5(5) A demonstration that the proposed use of the solid by-product will not adversely affect human health or the environment. The demonstration may include, but is not limited to, a toxicity characteristics leaching procedure (TCLP, EPA Method 1311) analysis and total metals testing of a representative sample of the solid by-product.

108.5(6) A solid by-product management plan pursuant to 108.6(2).

567—108.6(455B,455D) Requirements for beneficial uses other than alternative cover material.

108.6(1) *Solid by-products beneficially used as fill material.* All beneficial uses, including those listed in 567—108.4(455B,455D) other than rubble and soil, shall meet the following requirements, unless a variance is granted in writing by the department for a specific location, if the beneficial use entails the solid by-product's being used as fill material:

a. Leachate characteristics of the solid by-product shall be measured by the synthetic precipitation leaching procedure (SPLP, EPA Method 1312) and shall be less than or equal to ten times the maximum contaminant levels (MCL) for drinking water. Foundry sand and coal combustion by-products may limit the SPLP analytes to total metals for drinking water.

b. Total metals testing results, which shall include thallium, shall be consistent with the department's statewide standards for soil pursuant to 567—Chapter 137. Arsenic levels shall be consistent with the statewide standards for soil or the naturally occurring (i.e., background) arsenic levels of the soil, whichever are greater.

c. The solid by-product shall produce a fill that has a pH:

(1) Greater than or equal to 5 and less than or equal to 8 if the fill may be used as growing media either now or in the future.

(2) Greater than or equal to 5 and less than 12 if the fill is specifically intended not to be used as growing media either now or in the future. In this category of fill, materials with a pH equal to or greater than 10 but less than 12 shall be used only in areas where direct physical contact by humans for long periods of time is not expected to occur.

(3) For deep fills where only the surface may serve as growing media either now or in the future, then at a minimum the top three feet shall have a pH greater than or equal to 5 and less than or equal to 8. Fill material below the top three feet shall have a pH greater than or equal to 5 and less than or equal to 12.

d. The by-product shall not be placed in a waterway or wetland or any waters of the state or extend below or within five feet of the high water table.

e. The by-product shall not be placed within the 100-year flood plain unless in accordance with all local and department regulations including rule 567—71.5(455B).

f. The by-product shall not be placed closer than 200 feet to a sinkhole or to a well that is being used or could be used for human or livestock water consumption.

g. The by-product shall not be putrescible.

108.6(2) Solid by-product management plans. All recipients of beneficial use determinations granted pursuant to 567—108.5(455B,455D) and coal combustion by-product and foundry sand beneficial uses listed in 567—108.4(455B,455D) shall develop and maintain a solid by-product management plan that satisfies the following requirements:

a. Lists the source(s) of the solid by-product.

b. Lists procedures for periodic testing of the solid by-product to ensure that the chemical and physical composition has not changed significantly.

c. Provides a description of storage procedures including:

(1) Storage location(s).

(2) Maximum anticipated inventory, including dimensions of any stockpiles.

(3) Run-on and run-off controls, which may include a storm water National Pollutant Discharge Elimination System (NPDES) permit.

(4) Management practices to minimize uncontrolled dispersion of the solid by-product.

(5) Maximum storage time, not to exceed six months unless authorized in writing by the department.

567—108.7(455B,455D) Record-keeping and reporting requirements for beneficial use projects other than alternative cover material.

108.7(1) Any entity that engages in the beneficial use of a solid by-product, other than for alternative cover material, and that satisfies at least one of the following criteria shall comply with record-keeping and reporting requirements set forth in this rule:

a. The entity has been granted a beneficial use determination pursuant to 567—108.5(455B,455D).

b. The solid by-product is not rubble or soil and is being beneficially used as fill material.

c. The solid by-product is a coal combustion by-product or foundry sand.

108.7(2) Record keeping. Generators shall maintain all records related to the solid by-product management plan for a minimum duration of five years.

108.7(3) Reporting. Reports shall be filed with the department's central office and the field office with jurisdiction over the generator as follows:

a. Unless otherwise directed by the department, generators shall submit to the department a copy of the solid by-product management plan whenever that plan is revised or within 60 days of the end of the calendar year, whichever is earlier.

b. Generators whose solid by-products are being beneficially used as fill material shall submit to the department within 60 days of the end of the calendar year the following information for each beneficial use project or activity:

(1) The location of the project.

(2) The tons of solid by-product utilized for the project.

567—108.8(455B,455D) Universally approved beneficial use determinations for alternative cover material. Unless the landfill is otherwise notified pursuant to 567—108.11(455B,455D), the following alternative cover materials may be beneficially used as daily cover material at sanitary landfills in the manner and volume specified by sanitary landfill rules. However, sanitary landfills shall amend their sanitary landfill permits by notifying the department, and the department field office with jurisdiction over the facility, of their intent to utilize solid by-products pursuant to this rule at least 30 days prior to actual utilization of the by-products as alternative cover material.

108.8(1) *Asphalt shingles.* Asphalt shingles that are certified, consistent with federal regulations (Reference: Appendix E, Subpart E, 40 CFR Part 763, Section 1, Polarized Light Microscopy), as not containing more than 1 percent asbestos and are ground to an average size of 3 inches or less in any dimension may be mixed with soil in a 50/50 volume.

108.8(2) *Coal combustion by-products.* Coal combustion by-products may be mixed with soil in a 50/50 volume.

108.8(3) *Compost.* One hundred percent cured or finished compost, and compost rejects, may be used.

108.8(4) *Diatomaceous earth.* Diatomaceous earth may be mixed with soil in a 50/50 volume.

108.8(5) *Foundry sand.* Foundry sand may be mixed with soil in a 50/50 volume.

108.8(6) *Glass.* Glass that has been ground to an average size of ½ inch or less in any dimension may be mixed with soil in a 10 percent glass and 90 percent soil by volume mixture.

108.8(7) *Gypsum and gypsum wallboard.* Gypsum and gypsum wallboard that have been ground to an average size of 3 inches or less in any dimension may be mixed with soil in a 50/50 volume.

108.8(8) *Paper mill sludge.* Uncontaminated, dewatered paper mill sludge may be mixed with soil in a 50/50 volume.

108.8(9) *Sandblasting abrasive.* Sandblasting abrasive and residuals may be mixed with soil in a 50/50 volume.

108.8(10) *Soil, including petroleum-contaminated soil.* Petroleum-contaminated soils that have been decontaminated to the satisfaction of the department pursuant to 567—Chapter 120 may be utilized.

108.8(11) *Tire chips.* Tire chips that are an average size of 3 inches or less in any dimension may be mixed with soil in a 50/50 volume.

567—108.9(455B,455D) Beneficial use determination application requirements for alternative cover material. Unless the alternative cover material beneficial use is approved pursuant to 567—108.8(455B,455D), the applicant shall submit the following application information to the department to amend the sanitary landfill permit. The department may request that additional information be submitted in order to make a beneficial use determination. The department may also require specific beneficial use determination conditions and issue a temporary beneficial use determination on a trial basis.

If the department finds the application information to be incomplete, then it shall notify the applicant in writing of that fact and of the specific deficiencies and return the application materials to the applicant within 30 days of such notification. The applicant may reapply without prejudice.

108.9(1) The name, address, and telephone number of:

- a. Owner of the site where the project will be located.
- b. Applicant for the beneficial use determination.
- c. Official responsible for the operation of the project.
- d. Professional engineer (P.E.) licensed by the state of Iowa and retained for the project, if any. The department may, at its sole discretion, require the applicant to retain a professional engineer for the project or specific parts thereof.
- e. Agency to be served by the project, if any.
- f. Responsible official of agency to be served.

108.9(2) A description of the proposed alternative cover material and whether it is to be used as daily, intermediate, or final cover.

108.9(3) The chemical and physical characteristics of the alternative cover material.

108.9(4) The proposed volume ratio of the alternative cover material(s) to soil or other alternative cover material(s).

108.9(5) A demonstration that there is a known or reasonably probable suitability of the alternative cover material as cover material by providing previous case studies of the alternative cover material being utilized as cover material's or the following information:

- a. Information on the ability of the alternative cover material to reduce or maintain current odor levels.
- b. Information on the ability of the alternative cover material to reduce or deter vectors.
- c. Information on the ability of the alternative cover material to reduce or maintain the current risk of fire.
- d. Information on the ability of the alternative cover material to control litter and dust.
- e. Information on the ability of the alternative cover material to impede the infiltration of liquids and precipitation.
- f. Information on the ability of the alternative cover material to control landfill gas migration.
- g. Information on the ability of the alternative cover material to provide a safe and effective working surface.
- h. Information on the ability of the alternative cover material to provide effective growing media.
- i. Other documentation that the alternative cover material is suitable for cover material.

108.9(6) A demonstration that the proposed use of the alternative cover material will not adversely affect human health or the environment. The demonstration may include, but is not limited to, a toxicity characteristics leaching procedure (TCLP, EPA Method 1311) analysis of a representative sample of the alternative cover material.

567—108.10(455B,455D) Beneficial use of alternative cover material and state goal progress. Alternative cover material placed at no more than the thickness required by sanitary landfill rules shall be exempt from landfill tonnage measurements used for state goal progress and waste diversion calculations.

567—108.11(455B,455D) Revocation of beneficial use determinations. The department may revoke any beneficial use determination given pursuant to this chapter if it finds one or more of the following:

1. The matters serving as the basis for the department's determination were incomplete or incorrect or are no longer valid.
2. The department finds that there has been a violation of any law, rule, permit or other authorization in its jurisdiction.
3. The department has reasonable cause to suspect a significant risk to or adverse affect on human health or the environment.

These rules are intended to implement Iowa Code sections 455B.304 and 455D.4.

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CHAPTER 109 SPECIAL WASTE AUTHORIZATIONS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—109.1(455B,455D) Purpose. The purpose of this chapter is to implement Iowa Code section 455B.304 and chapter 455D by providing rules for the disposal of special waste. The intent of these rules is to provide safe and proper management for disposal of special waste.

567—109.2(455B,455D) Special waste authorization required. No special wastes shall be delivered to or accepted by a municipal solid waste landfill unless disposal is authorized by a special waste authorization (SWA) issued by the department. Wastes for which an SWA has been issued shall be disposed of in accordance with the instructions, conditions, and limitations contained in the SWA. An SWA in effect on May 22, 2002, shall remain in effect until the SWA expires or until it is amended. Any amendment requests shall be handled under these rules.

567—109.3(455B,455D) Definitions.

“General special waste” means special wastes that are commonly accepted by landfills and have specific handling requirements for disposal that are explicitly listed in rule 567—109.11(455B,455D). General special wastes are required to be included in the landfill’s special waste acceptance criteria (SWAC), but do not require a special waste authorization (SWA). The following wastes are approved as general special wastes: asbestos-containing material; petroleum-contaminated soil; and stabilized grit, bar screenings and grease skimmings.

“Industrial process waste” means waste that is generated as a result of manufacturing activities, product processing or commercial activities. It does not include office waste, cafeteria waste, or other types of waste that are not the direct result of production processes.

“Municipal solid waste landfill” or *“MSWLF”* means a discrete area of land or an excavation that receives household waste, and that is not a land application site, surface impoundment, injection well, or waste pile, as those terms are defined under 40 CFR Part 257.2. An MSWLF may also receive other types of the federal Resource Conservation and Recovery Act (RCRA) Subtitle D wastes, such as commercial solid waste, nonhazardous dry sludge, and industrial solid waste. An MSWLF may be publicly or privately owned. An MSWLF may be a new MSWLF site, an existing MSWLF site, or a lateral expansion.

“Pollution control waste” means any solid waste residue extracted by, or resulting from, the operation of pollution control processes.

“Solid waste” is defined in Iowa Code section 455B.301.

“Special handling” means a specific procedure required for handling certain waste to protect the health and safety of employees, the public and the environment.

“Special waste” means any industrial process waste, pollution control waste, or toxic waste which presents a threat to human health or the environment or a waste with inherent properties which make the disposal of the waste in a sanitary landfill difficult to manage. Special waste does not include domestic, office, commercial, medical, or industrial waste that does not require special handling or limitations on its disposal. Special waste does not include hazardous wastes which are regulated under the federal Resource Conservation and Recovery Act (RCRA), hazardous waste as defined in Iowa Code section 455B.411, subsection 3, or hazardous wastes included in the list compiled in accordance with Iowa Code section 455B.464.

“Toxic waste” means material containing poisons, biocides, acids, caustics, pathological wastes, and similar harmful wastes which may require special handling and disposal procedures to protect the environment and the persons involved in the storage, transport, and disposal of the waste.

567—109.4(455B,455D) Types of special wastes. Rescinded IAB 6/11/03, effective 7/16/03.

567—109.5(455B,455D) Applications.

109.5(1) Generators of special waste shall make application for an SWA by submitting the form “Request for Special Waste Authorization” accompanied by supporting data as required by the department. Two copies shall be submitted to the department, and the department will forward one of the copies to the disposal site after the department review process is completed. The application shall include the following information when applicable:

- a. Appropriate chemical analysis of the waste,
- b. Physical form of the waste,
- c. Weight or volume of the waste,
- d. Material safety data sheet (MSDS) for the waste or for the materials from which the waste is generated, if applicable,
- e. Toxicity characteristic leaching procedure (TCLP) test results when appropriate, which show that none of the federal limits in 40 CFR Part 261 are exceeded, and
- f. Any other information requested by the department.

109.5(2) Additional requirements.

- a. The waste shall not contain free liquids as defined at 567—100.2(455B,455D). The point of compliance shall be the working face.
- b. The waste shall not be a listed hazardous waste or meet the criteria for characteristic hazardous waste pursuant to the federal Resource Conservation and Recovery Act (RCRA).
- c. Wastes with PCB concentrations equal to or greater than 50 ppm shall not be authorized for disposal at a landfill.
- d. Polynuclear aromatic hydrocarbon (PAH) (SW 846 Method 8270) contaminated soil shall not be authorized for disposal at a landfill if the total PAH level exceeds 1600 ppm for the following compounds: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene or if the total carcinogenic PAH level exceeds 200 ppm for the following compounds: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene or if the cyanide level exceeds 1,000 ppm.
- e. Special waste authorizations may be issued for a period not to exceed three years.

567—109.6(455B,455D) Restrictions.

109.6(1) The department may revoke an SWA for cause at any time. Such cause may include, but is not limited to, evidence that indicates that the characteristics of the authorized quality of the waste vary from the authorized values, evidence that the continued disposal of the waste as authorized may pose a threat to the public health or the environment, or failure to comply with any condition in the SWA or the landfill’s SWAC.

109.6(2) The holder of an SWA must apply for a renewal at least 30 days prior to the expiration of the SWA.

109.6(3) The issuance of an SWA does not obligate any waste disposal facility to accept the waste nor does it preclude the facility from imposing conditions or restrictions other than those listed in the SWA.

109.6(4) The issuance of an SWA does not exempt the party disposing of the waste from any local, state, or federal laws or regulations.

567—109.7(455B,455D) Landfill responsibilities.

109.7(1) Any public or private municipal solid waste landfill that refuses any particular solid waste type for management or disposal must identify another waste management facility for that waste within the planning area. In the case of special waste, if no other waste management facility for that waste type exists within the planning area, the city or county, in cooperation with the waste generator, must establish or arrange access to one.

109.7(2) All municipal solid waste landfills shall submit special waste acceptance criteria to the department. The SWAC shall list the different kinds of special waste that each landfill (facility specific)

will accept and the instructions for disposal for each of those wastes. The SWAC shall be submitted within 90 days after May 22, 2002. The SWAC shall be submitted on forms provided by the department.

109.7(3) Landfills are required to ensure that special wastes delivered to the facility conform to the SWAC on file with the department.

109.7(4) Each municipal solid waste landfill shall provide to the department, on a quarterly basis, a report of SWA activity including each SWA number and the quantities of waste disposed of during the reporting period. This information shall be submitted as part of the Quarterly Solid Waste Fee Schedule and Retained Fees Report, Form 542-3276.

567—109.8(455B,455D) Special waste generator responsibilities. Special waste generator responsibilities shall include, but are not limited to, the following:

109.8(1) Prior to submission of an SWA application, the generator shall adhere to the solid waste management hierarchy. Alternatives include volume reduction at the source; recycling and reuse, including composting and land application; and other approved techniques of solid waste management including, but not limited to, combustion with energy recovery and combustion for waste disposal. The generator shall include, as part of the SWA application, a description of the review of the alternatives to landfilling for each waste for which an SWA is requested. The description should detail to what extent the waste could be recycled, reduced or reused so that landfilling is not necessary.

109.8(2) The generator shall follow the guidelines for submission of an SWA application as given in 109.5(455B,455D).

109.8(3) The generator shall ensure that special waste coming into the landfill shall arrive as a separate load and not be commingled with any other waste.

109.8(4) The generator shall submit analytical results supporting an SWA at a frequency to be determined by the landfill.

109.8(5) After receiving an SWA, the generator must contact the designated landfill for instructions on delivering the waste and instructions for adhering to the landfill's SWAC.

109.8(6) The generator shall notify the department and landfill, prior to disposal, of any change in the characteristics of the special wastes being disposed.

109.8(7) Generators shall notify the landfill in writing when a one-time disposal under an SWA has been completed. This requirement is for one-time disposals only.

567—109.9(455B,455D) Infectious waste. Infectious waste which is generated and treated at a medical clinic, doctor's office, nursing care facility, health care facility, dentist's office or other similar facility may be placed with municipal solid waste and not handled in a special way if it is rendered nonpathological, does not contain free liquids, and sharps are shredded, blunted, granulated, incinerated or mechanically destroyed. The generator of the infectious waste must notify the waste hauler and the sanitary landfill that infectious waste is being placed with the regular municipal solid waste and, with the notice, certify that the infectious waste is properly treated in accordance with the requirements of this rule.

567—109.10(455B,455D) Other special wastes.

109.10(1) *Radioactive waste.* Radioactive materials shall not be disposed of by a sanitary disposal project. Luminous timepieces are exempt.

109.10(2) *Sewage sludge.*

a. Sewage sludge, including unstabilized septic tank pumpings, shall not be disposed of in a sanitary landfill if it meets the criteria for Class I or II sewage sludge in 567—Chapter 67, except for use in daily, interim, or final cover according to the approved plan for the landfill. Class III sewage sludge may be disposed of at a sanitary landfill as provided in 567—Chapter 112.

b. Sewage sludge may be handled at processing facilities as provided in 567—Chapter 104.

c. Sewage sludge may be utilized for land application in accordance with 567—Chapter 67.

109.10(3) *Waste tires.* Pursuant to Iowa Code section 455D.11(2), land disposal of waste tires, as defined in 567—Chapter 117, is prohibited as of July 1, 1991, unless each tire is processed by, at a minimum, shredding, cutting or chopping each tire into pieces that are no longer than 18 inches on any side.

567—109.11(455B,455D) Conditions and requirements for the disposal of general special wastes.

109.11(1) *Asbestos-containing material.* The sanitary landfill permit holder shall comply with the following conditions and requirements whenever asbestos-containing waste materials are accepted and disposed of in a sanitary landfill.

a. Asbestos-containing material (ACM) wastes with 1 percent or less asbestos are not regulated and can be disposed of at the working face, the same as any other waste.

b. ACM wastes that contain greater than 1 percent asbestos are regulated under federal asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) and shall be managed in accordance with federal regulations defined in 40 CFR Part 61, Subpart M. Testing to determine asbestos content shall utilize the method specified in 40 CFR Part 763, Section 1, Appendix A of Subpart F.

c. Nonfriable ACM waste is defined as waste containing greater than 1 percent asbestos that when dry cannot be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM waste includes asbestos-containing floor covering and asphalt roofing materials that show no evidence that they contain crumbled, pulverized or powdered ACM residues upon delivery to the landfill.

d. Friable ACM waste is defined as waste containing greater than 1 percent asbestos that when dry can be crumbled, pulverized or reduced to powder by hand pressure. Friable ACM waste includes acoustical, thermal and fireproofing insulation, as well as numerous building products with incorporated asbestos material. Waste transite siding shall be considered friable ACM waste.

e. ACM waste transporters should be encouraged by the landfill operator to notify the landfill at least 24 hours in advance when ACM waste will be arriving at the landfill. Upon arrival at the sanitary landfill, the transporter shall present to the landfill operator the ACM waste shipment records, which shall include a determination whether the ACM waste is friable or nonfriable, if known. The landfill operator must through visual inspection or testing verify whether the ACM waste is friable or nonfriable. If not verified as nonfriable, the waste must be handled as friable ACM waste.

f. Any federal NESHAP-regulated ACM waste shipments that show evidence of visible dust emissions or that are not properly containerized, wrapped, wetted, and covered shall be rejected upon arrival at the landfill.

g. ACM wastes with greater than 1 percent asbestos content that are nonfriable when received at the landfill may be disposed of at the working face. Care shall be taken when unloading and covering the waste so that it does not become friable at the working face.

h. ACM wastes with greater than 1 percent asbestos content, as determined by laboratory tests, which are confirmed as friable when received at the landfill shall be disposed of in an area separate from the regular working face. The wastes shall be covered carefully with a minimum of six inches of soil cover and compacted by no later than the end of the operating day. Care shall be taken at all times during disposal and covering to prevent rupture of asbestos-containing containers and wrapped waste systems. Covered ACM waste areas shall be protected from erosion at all times.

i. Upon delivery, friable ACM wastes must be wet and contained in labeled, leak-tight containers or wrapping which prevents asbestos from becoming airborne. Bulk demolition wastes with friable ACM need not be placed in leak-tight containers, but must remain wet at all times and be properly labeled and wrapped to prevent asbestos from becoming airborne during transport and disposal and covering at the landfill.

j. Extreme care shall be taken at all times when transporting, depositing, and covering federal NESHAP-regulated ACM waste to control the evolution of dust and airborne asbestos fibers and to not allow the rupture of asbestos containers and wraps.

k. After landfill acceptance, if any federal NESHAP-regulated ACM waste becomes dry prior to disposal, rewetting, or an approved alternative means of dust emissions control, is mandatory. When disposed of, the wet ACM waste must be properly covered before it can dry again.

l. In the event that any visible dust emissions from federal NESHAP-regulated ACM waste occur, protective safety equipment, consistent with federal NESHAP and OSHA regulations, shall be immediately utilized by landfill operating staff.

m. Daily records of the acceptance and disposal of all ACM wastes shall be maintained. Landfill records for each NESHAP-regulated ACM waste shipment shall include the following:

- (1) The date of ACM waste receipt.
 - (2) The names, addresses, and telephone numbers of the originating waste generation site, facility owner, agent responsible for performing removal and the waste transporter.
 - (3) The description of ACM wastes, quantity in cubic yards, weight and the number and type of containers or systems received.
 - (4) The waste shipment record and any accompanying asbestos content laboratory test and friable status documentation.
 - (5) The operational log notation relative to the landfill operator's visual confirmation of waste type compared to waste shipment records and the friable or nonfriable status for each federal NESHAP-regulated ACM waste shipment.
 - (6) The operational log notation of any rejected ACM waste and the reasons for rejection by landfill staff.
 - (7) The site operational area, coordinates location and vertical elevation keyed to site mapping and the quantity of buried waste in cubic yards for each federal NESHAP-regulated waste shipment disposed of within the disposal site.
 - n. Records for all federal NESHAP-regulated ACM wastes accepted at the landfill in accordance with 40 CFR Part 61, including required federal and state asbestos NESHAP program operational and site closure reports, shall be maintained. All records, except for waste shipment records, shall be maintained through site closure. Waste shipment records shall be retained for at least two years.
 - o. A copy of an Affidavit Explanatory of Title which has been file stamped by the county recorder shall be submitted to the department within 60 days of site closure. The affidavit shall appear at part of the property deed record and shall indicate that:
 - (1) The landfill has been used for the disposal of ACM waste.
 - (2) The survey plot and all records of the location and quantity of regulated ACM wastes have been filed with federal and state NESHAP program officials. Such documentation must be filed with the department, along with the notification.
 - (3) The site is subject to the regulations under 40 CFR Part 61, Subpart M, and the site closure permit requirements issued by the department.
 - p. Strict adherence to federal NESHAP asbestos regulations under 40 CFR Part 61 is mandatory for all federal regulated ACM wastes. Questions on federal and state regulations should be addressed to the U.S. Environmental Protection Agency at (913)551-7391 or the department's air quality bureau at (515)281-8443. Questions regarding state asbestos abatement certification requirements should be addressed to the Iowa division of labor services at (515)281-6768.
- 109.11(2) *Petroleum-contaminated soil.*** The sanitary landfill operator, the generator, and the hauler shall comply with the following conditions and requirements whenever petroleum-contaminated soil is disposed of in a sanitary landfill.
- a. The waste cannot be a hazardous waste.
 - b. The waste cannot contain free liquids as determined by the paint filter liquids test.
 - c. Upon arrival at the landfill, the hauler shall identify the waste to the landfill attendant.
 - d. The landfill operator shall direct the hauler to the evaporation area. The soil borrow area or an area with intermediate cover may be used.
 - e. The contaminated soil may be spread up to a depth of 4 inches. The contaminated soil shall be allowed to aerate for at least 14 days and until the hydrocarbon level is less than 100 ppm. Fourteen days is a minimum. Longer times may be needed if weather conditions are unfavorable or if contamination levels are unusually high.
 - f. The soil shall be turned or disked at least three times per week.
 - g. Alternative procedures other than those procedures defined in 109.11(2) "e" and 109.11(2) "f" may be used if it can be demonstrated that soil treatment meeting the requirements of 109.11(2) "h" can be consistently achieved and if approved under permit amendment.
 - h. After the contaminant has evaporated and the total hydrocarbon content is less than 100 ppm, the soil may be used as daily cover material or incorporated into the working face. The soil may not be used for capping or lining.

i. Once every three months, petroleum-contaminated soil that has been treated at the evaporation area shall be sampled and analyzed for total hydrocarbon content. This sampling can be done at any time during the three-month period depending on the availability of treated soil.

109.11(3) *Stabilized grit, bar screenings, and grease skimmings.* The sanitary landfill operator, the generator, and the hauler shall comply with the following conditions and requirements whenever stabilized grit, bar screenings, or grease skimmings are disposed of in a sanitary landfill.

- a. The waste cannot contain any free liquids as determined by the paint filter liquids test.
- b. The generator shall stabilize the grit, bar screenings, and grease skimmings prior to their disposal at the landfill in order to destroy any pathogenic organisms. Stabilization can be done by addition of lime to raise the pH to at least 12 for two hours.
- c. The generator shall prearrange a delivery schedule with the landfill operator.
- d. Upon arrival at the landfill, the hauler shall identify the waste to the landfill attendant.
- e. The landfill operator shall direct the hauler to the working face.
- f. The waste shall be deposited at the working face, covered with regular refuse or soil and compacted.

These rules are intended to implement Iowa Code section 455B.304.

[Filed 3/27/02, Notice 12/12/01—published 4/17/02, effective 5/22/02]

[Filed 11/21/02, Notice 9/18/02—published 12/11/02, effective 1/15/03]

[Filed 5/22/03, Notice 3/19/03—published 6/11/03, effective 7/16/03]

CHAPTER 110
HYDROGEOLOGIC INVESTIGATION AND MONITORING REQUIREMENTS
Rescinded **ARC 1956C**, IAB 4/15/15, effective 5/20/15

CHAPTER 111
ANNUAL REPORTS OF SOLID WASTE ENVIRONMENTAL MANAGEMENT SYSTEMS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—111.1(455J) Purpose. This chapter establishes methods and criteria for determining whether a planning area's or service area's environmental management system is in compliance with the provisions of Iowa Code section 455J.3.

[ARC 0041C, IAB 3/21/12, effective 4/25/12]

567—111.2(455J) Role of the department. Pursuant to Iowa Code subsection 455J.4(2), the department is responsible for the development and implementation of these rules.

[ARC 0041C, IAB 3/21/12, effective 4/25/12]

567—111.3(455J) Applicability. This chapter applies to those planning and service areas that have been designated as environmental management systems and that seek to continue to be so designated. This is a voluntary program, and planning and service areas may elect to leave the program at any time. Upon leaving the program, the planning or service area shall comply with the comprehensive planning requirements in 567—Chapter 101.

[ARC 0041C, IAB 3/21/12, effective 4/25/12]

567—111.4(455J) Definitions. For the purposes of this chapter, the following definitions apply:

"Annual report" means the required submittal to the department that documents an environmental management system's compliance with the requirements of Iowa Code section 455J.3.

"Aspect" means an element of a planning or service area's activities or operations that can interact with the environment.

"Audit" means a planned, objective and documented assessment, either done internally by the program participant or its designee or externally by an independent third party, to determine the performance of a planning or service area's system in relation to the designation requirements.

"Department" means the department of natural resources.

"Environmental management system" or *"EMS"* means the same as defined in Iowa Code section 455J.2(5).

"Environmental policy" means a statement by the planning or service area that includes:

1. The planning or service area's intentions and principles in relation to its overall environmental performance, which provides a framework for action and for setting environmental objectives and targets; and
2. The planning or service area's commitment to environmental compliance and continuous improvement.

"Fenceline" means the geographic area and the operations, facilities, and programs that the planning or service area has the ability to influence.

"Impact" means any change to the environment, whether adverse or beneficial, from an aspect of a planning or service area's activities or operations.

"Objective" means an overall and quantifiable environmental goal arising from the planning or service area's environmental policy.

"Plan component" means each of the six areas that are required to be addressed in an environmental management system, including: organics waste management, hazardous household materials collection, water quality improvement, greenhouse gas reduction, recycling services, and environmental education.

"Planning area" means the same as defined in rule 567—100.2(455B,455D).

"Service area" means that portion of a planning area that has been identified by the planning area to be a participant in the program. Only the service area is eligible for the program incentives described in Iowa Code section 455J.5.

"Target" means a detailed and quantifiable performance requirement that must be set and met in order to achieve the environmental objective. An objective may have several targets.

[ARC 0041C, IAB 3/21/12, effective 4/25/12; ARC 2756C, IAB 10/12/16, effective 11/16/16; ARC 3736C, IAB 4/11/18, effective 5/16/18]

567—111.5(455J) Submittal of annual reports. Annual reports shall be submitted to the department by September 1 of each year and include all the requirements in 567—111.6(455J). Annual reports shall address activities that occurred during the previous state fiscal year that ended June 30. The reports shall be submitted on a form provided by the department.

[ARC 0041C, IAB 3/21/12, effective 4/25/12]

567—111.6(455J) Contents of annual reports. The following elements shall be included in the annual report.

111.6(1) *Executive summary.* The executive summary shall include an overview of the environmental improvements and benefits achieved during the past year as related to the system's objectives and targets. This summary would be similar to what is presented for management review.

111.6(2) *Environmental policy statement.* The annual report shall include a copy of the planning or service area's environmental policy statement and the date it was last reviewed and, if appropriate, revised. A copy of the communication procedure or other documents describing how the environmental policy statement has been conveyed to staff, management, and other individuals having a formal role in the implementation of the EMS shall also be included.

111.6(3) *Aspects and impacts.* The annual report shall identify and evaluate the actual or potential significant aspects and impacts to the environment, whether adverse or beneficial, from the planning or service area's activities, services and facilities. A description of the significant impacts to the environment that have been determined and the methodology used for this determination shall be included. Any changes that occurred or may occur in the near future that are likely to affect the identified impacts in the coming year shall be described. Such changes may include, but are not limited to, the closure or opening of facilities, other changes to the EMS's fenceline, the initiation of major new programs, and the discontinuation of a major service.

111.6(4) *Legal and other requirements.* The annual report shall list the legal requirements for the planning or service area's operations and facilities included in its EMS fenceline, including but not limited to, relevant environmental laws, regulations and permits, and worker health and safety regulations. A process for tracking any changes in these requirements shall be described. A brief summary of the planning area's regulatory compliance performance for the previous year, including a listing of recurring or significant violations related to the identified legal requirements and how they were or are being resolved, shall be included.

111.6(5) *Objectives and targets.* The annual report shall describe the objective(s) relevant to each of the six plan components and the targets established for achieving the objective(s).

111.6(6) *Action plan.* The annual report shall provide a plan that describes the actions necessary to achieve the objectives and targets. The plan includes the identification of specific tasks, timelines for completion of each step in the plan, and a schedule for periodically reviewing and updating, as conditions dictate, the objectives and targets.

111.6(7) *Roles and responsibilities.* The annual report shall include identification and documentation of individuals and organizations responsible for specific tasks to carry out the objectives.

111.6(8) *Communication and training.* The annual report shall describe the processes that have been established for internal and external communication.

a. External communication includes reaching out to those groups and organizations that have been identified as having an interest, stake, or role in the planning or service area's ongoing EMS program. There shall also be procedures for receiving and responding to relevant communication from external interested parties.

b. Internal communication is directed to individuals, organizations and entities that have a role or responsibility within the action plan. Internal communication includes a process to ensure that all responsible parties are familiar with the EMS and have the training necessary to capably execute their roles. A description of the training provided to responsible parties shall be included.

111.6(9) *Monitoring and measurement.* The annual report shall describe the documented process for monitoring key activities and, at a minimum, measuring performance related to each objective and target.

111.6(10) *Audit/assessment.* The annual report shall provide documented procedures for assessing the performance of the component's action plan(s) in terms of achieving the stated objectives and targets and conformance with the overall EMS. The assessment shall draw conclusions from the performance measurements.

a. Internal audit. A copy of the result of the latest internal audit that includes the date(s) it was conducted and the identity of the auditor(s) shall be provided as part of the report. An internal audit shall be conducted each state fiscal year.

b. External audit. An external audit shall occur each state fiscal year. The date of the latest external audit or the date the audit will take place, along with the identity and pertinent qualifications of the independent, third-party auditor(s), shall be provided. The results of the external audit shall be incorporated into the report. The department has a prequalification process for external auditors.

111.6(11) *Reevaluation and modification.* Reevaluation and modification are activities that allow a planning or service area to improve and strengthen the EMS on an ongoing basis. The annual report shall describe areas where the EMS has met, exceeded, or failed to meet expectations. For each plan component, the report shall identify root causes of those outcomes and develop revised goals and activities appropriate to each.

[ARC 0041C, IAB 3/21/12, effective 4/25/12; ARC 3736C, IAB 4/11/18, effective 5/16/18]

567—111.7(455J) Evaluation criteria. Each annual report shall be reviewed by the department, and a determination as to whether a planning or service area's EMS is in compliance with Iowa Code section 455J.3 shall be made by January 1 of each year. Reports shall be reviewed for the following:

1. Completeness in terms of addressing all of the elements set forth in 567—111.6(455J).
2. Progress toward achieving the objectives and targets set forth in the EMS.
3. Clear demonstration of continuous improvement in terms of progress toward achieving the objectives and targets set forth in the EMS.

Upon achievement of these objectives and targets, a reevaluation and decision will be needed to verify whether a new target should be assigned to an objective or, if the objectives and targets were not achieved, what new initiatives should be incorporated into the EMS. Planning and service areas shall review procedures on a regular basis and revise as appropriate.

[ARC 0041C, IAB 3/21/12, effective 4/25/12; ARC 3736C, IAB 4/11/18, effective 5/16/18]

567—111.8(455J) Evaluation outcomes.

111.8(1) If the department determines that the annual report adequately demonstrates compliance with the requirements of Iowa Code section 455J.3, the planning or service area shall remain designated as an EMS and shall continue to be qualified for the incentives set forth in Iowa Code section 455J.5.

111.8(2) If the department determines that the annual report clearly demonstrates that the planning or service area's EMS is no longer in compliance with Iowa Code section 455J.3, the department may recommend to the environmental protection commission the revocation of the EMS designation. If the commission concurs with the department's recommendation, the planning or service area shall adhere to the comprehensive planning requirements in 567—Chapter 101.

111.8(3) Failure by a planning or service area to submit an annual report by September 1 in any year will result in revocation of the EMS designation, following which the planning or service area shall adhere to the comprehensive planning requirements in 567—Chapter 101.

[ARC 0041C, IAB 3/21/12, effective 4/25/12; ARC 3736C, IAB 4/11/18, effective 5/16/18]

These rules are intended to implement Iowa Code section 455J.4.

[Filed ARC 0041C (Notice ARC 9919B, IAB 12/14/11), IAB 3/21/12, effective 4/25/12]

[Filed ARC 2756C (Notice ARC 2630C, IAB 7/20/16), IAB 10/12/16, effective 11/16/16]

[Filed ARC 3736C (Notice ARC 3569C, IAB 1/17/18), IAB 4/11/18, effective 5/16/18]

CHAPTER 112
SANITARY LANDFILLS: BIOSOLIDS MONOFILLS
[Prior to 12/11/02, see 567—Chs 102, 103, 110]
Rescinded **ARC 1956C**, IAB 4/15/15, effective 5/20/15

CHAPTER 113

SANITARY LANDFILLS FOR MUNICIPAL
SOLID WASTE: GROUNDWATER PROTECTION SYSTEMS FOR THE DISPOSAL OF
NONHAZARDOUS WASTES

[Prior to 12/11/02, see 567—Chs 102, 103, 110]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—113.1(455B) Purpose. The purpose of this chapter is to protect human health and the environment through the implementation of minimum national standards pursuant to the Resource Conservation and Recovery Act (“RCRA” or “the Act”) for all municipal solid waste landfill (MSWLF) units and under the Clean Water Act for MSWLFs that are used to dispose of sewage sludge.

This chapter details the permitting, siting, design, operating, monitoring, corrective action, reporting, record-keeping, closure, and postclosure requirements for all sanitary landfills accepting municipal solid waste (MSW).

Groundwater is a precious natural resource. The vast majority of citizens in Iowa depend on groundwater as a drinking water source. Agriculture, industry and commerce also depend heavily on groundwater. It is essential to the health, welfare, and economic prosperity of all citizens in Iowa that groundwater is protected and that the prevention of groundwater contamination is of paramount importance. Therefore, the intent of this chapter is to prevent groundwater contamination from MSWLF units to the maximum extent practical, and if necessary to restore the groundwater to a potable state, regardless of present condition, use, or characteristics.

567—113.2(455B) Applicability and compliance.

113.2(1) All sanitary landfills accepting municipal solid waste must comply with the provisions of this chapter.

113.2(2) These rules do not encompass the beneficial use of by-products as alternative cover material. For rules pertaining to the beneficial use of by-products as alternative cover material, see 567—Chapter 108.

113.2(3) These rules do not encompass the management and disposal of special wastes. For rules pertaining to the management and disposal of special wastes, see 567—Chapter 109.

113.2(4) This chapter does not apply to MSWLF units that did not receive waste after October 9, 1994. The closure permit issued or the rules in effect at the time of closure shall govern postclosure activities for such MSWLF units.

113.2(5) This chapter does not apply to MSWLF units that stop receiving waste before October 1, 2007, and are not contiguous with MSWLF units that will continue to accept waste after October 1, 2007. For the purpose of this subrule, contiguous MSWLF units are those that adjoin, abut or have a common boundary or edge with one another or that utilize the same groundwater monitoring network system. The permit issued and the rules in effect at the time waste acceptance ceased shall govern postclosure activities for such MSWLF units except as follows:

- a. Financial assurance in accordance with rule 567—113.14(455B) shall be required.
- b. Owners or operators of MSWLF units described in this subrule that fail to complete cover installation within one year after October 1, 2007, will be subject to all the requirements of this chapter, unless otherwise specified.
- c. Surface water sampling in accordance with subrule 113.10(3) shall be required.
- d. MSWLF units subject to this rule shall perform groundwater sampling for the following parameters:

- (1) Routine semiannual water sampling parameters:
 1. Chloride.
 2. Specific conductance (field measurement).
 3. pH (field measurement).
 4. Ammonia nitrogen.

5. Iron, dissolved.
6. Chemical oxygen demand.
7. Any additional parameters deemed necessary by the department.
- (2) Routine annual water sampling parameters:
 1. Total organic halogen.
 2. Phenols.
 3. Any additional parameters deemed necessary by the department.
- e. If the analytical results for a downgradient groundwater monitoring point do not fall within the control limits of two standard deviations above (or below for pH) the mean parameters, listed in subparagraphs 113.2(5) “d”(1) and (2), in a corresponding upgradient groundwater monitoring point and it cannot be demonstrated that a source other than an MSWLF unit caused the control limit exceedence, then the owner or operator shall comply with the groundwater assessment monitoring program requirements in subrule 113.10(6) and corrective action requirements in subrules 113.10(7), 113.10(8) and 113.10(9), if necessary.

113.2(6) MSWLF units containing sewage sludge and failing to satisfy the requirements of this chapter violate Sections 309 and 405(e) of the Clean Water Act.

113.2(7) Consideration of other laws. The issuance of an MSWLF permit by the department in no way relieves the permit holder of the responsibility of complying with all other local, state, or federal statutes, ordinances, and rules and other applicable requirements.

113.2(8) Closure of existing MSWLF units. [See **Objection at end of chapter**]

a. Existing MSWLF units that cannot make the demonstration specified in paragraph 113.6(2) “a,” pertaining to airports, in 113.6(2) “b,” pertaining to floodplains, or in 113.6(2) “f,” pertaining to unstable areas, must close in accordance with rule 567—113.12(455B) and conduct postclosure activities in accordance with rule 567—113.13(455B).

b. Existing MSWLF units that do not have an approved leachate collection system and a composite liner or a leachate collection system and an alternative liner modeled at an approved point of compliance shall cease accepting waste by October 1, 2007.

c. Rescinded IAB 12/31/08, effective 2/4/09.

d. Those portions of existing MSWLF units demonstrating placement of final cover in conformance with previously approved plans and specifications or regulations in effect at the time of such closure shall not be required to apply additional cover solely to achieve compliance with rule 567—113.12(455B).

113.2(9) Existing MSWLF units that continue accepting waste after October 1, 2007, shall submit an implementation plan to the department by January 31, 2008, that identifies how the MSWLF shall achieve compliance with these rules. The plan shall include a compliance schedule which shall not extend beyond January 31, 2011. This subrule shall not preclude compliance with subrule 113.2(8).

113.2(10) Compliance with amendments to these rules.

a. Owners or operators of existing MSWLF units that have an approved leachate collection system and a composite liner or a leachate collection system and an alternative liner modeled at an approved point of compliance shall not be required to redesign or reconstruct the MSWLF units due to amendments to these rules subsequent to such approval unless the department finds that such facilities are causing pollution or that continued use of such facilities results in a vertical expansion on top of or against the side slopes of a previously filled noncompliant MSWLF unit. Prior to waste placement in the vertical expansion area, revised design plans shall be submitted to include construction of a separatory liner and leachate collection system that comply with all the requirements of subrule 113.7(5) to be placed between the area of vertical expansion and the underlying noncompliant MSWLF unit. The department, in conjunction with the MSWLF owner or operator, shall determine the maximum amount of time necessary for continued waste placement on top of or against the previously filled noncompliant MSWLF unit to achieve an adequate slope in order to maintain drainage of leachate to the leachate collection system after expected settlement. [See **Objection at end of chapter**]

b. Except as authorized by subrule 113.2(9) and paragraph 113.2(10) “a,” if any new requirement conflicts with a provision of or an operating procedure prescribed in the engineering plans or the MSWLF permit, the facility shall conform to the new rule.

113.2(11) Equivalency review procedure.

a. In approving a permit application under this chapter, the department may authorize, in writing, alternatives to the design requirements in this chapter only if, and only to the extent that, specific rules in this chapter expressly state that alternatives may be authorized under this chapter.

b. An owner or operator requesting an alternative design under this chapter shall submit a request to the department prepared by an Iowa-licensed professional engineer. The request shall:

(1) Identify the specific rule for which an equivalency alternative is being sought.

(2) Demonstrate, through supporting technical documentation, justification and quality control procedures, that the requested alternative to the design requirements in the rules of this chapter will, for the life of operations at the facility, achieve the performance standards in that rule.

c. No equivalency alternative will be approved unless the application affirmatively demonstrates that the following conditions are met:

(1) The request is complete and accurate and the requirements of this subrule have been met.

(2) The proposed alternative will, for the life of operations at the facility, achieve the performance standards in the rule for which the alternative to the design requirements in that rule is sought.

(3) The proposed alternative will provide protection equivalent to the design requirements in this chapter for the air, water or other natural resources of the state of Iowa, and will not harm or endanger the public health, safety or welfare.

[Editorial change: IAC Supplement 2/25/09]

567—113.3(455B) Definitions. Unless otherwise noted, the definitions set forth in Iowa Code section 455B.301 and 567—Chapter 100, which are incorporated by reference; the definitions that appear in specific rules within this chapter; and the following definitions shall apply to this chapter: [See **Objection at end of chapter**]

“Active life” means the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities in accordance with rule 567—113.12(455B).

“Active portion” means that part of a facility or unit that has received or is receiving wastes and that has not been closed in accordance with rule 567—113.12(455B).

“Aquifer” has the same meaning as in 567—Chapter 100.

“Commercial solid waste” means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

“Existing MSWLF unit” means any municipal solid waste landfill unit that has received solid waste as of the most recent permit renewal.

“Facility” means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste. The facility is formally defined in the permit issued by the department. Buffer lands around a facility are not required to be included in the permitted boundary of a facility.

“High water table” has the same meaning as in 567—Chapter 100.

“Household waste” means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

“Industrial solid waste” means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer and agricultural chemicals; food and related products and by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing and foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. “Industrial solid waste” does not include mining waste or oil and gas waste.

“Lateral expansion” means a horizontal expansion of the waste boundaries of an existing MSWLF unit.

“Municipal solid waste landfill (MSWLF) unit” means a discrete area of land or an excavation that receives household waste, and that is not a land application site, surface impoundment, injection well, or

waste pile, as those terms are defined under 40 CFR Part 257.2. An MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, construction and demolition debris, and industrial solid waste. An MSWLF unit may be publicly or privately owned. An MSWLF unit may be a new MSWLF unit, an existing MSWLF unit, or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not an MSWLF unit.

“New MSWLF unit” means any municipal solid waste landfill unit that has not received waste prior to the most recent permit renewal.

“Open burning” has the same meaning as in 567—Chapter 100.

“Operator” has the same meaning as in 567—Chapter 100.

“Owner” means the person(s) who owns a facility or part of a facility.

“Point of compliance” or *“POC”* means the point at which the MSWLF owner or operator demonstrates compliance with the liner performance standard, if applicable, and with the groundwater protection standard. The point of compliance is a vertical surface located hydraulically downgradient of the waste management area that extends down into the uppermost aquifer underlying the regulated MSWLF unit(s) and where groundwater monitoring shall be conducted.

“Residential lead-based paint waste” means waste containing lead-based paint that is generated as a result of activities such as abatement, rehabilitation, renovation and remodeling in homes and other residences. “Residential lead-based paint waste” includes, but is not limited to, lead-based paint debris, chips, dust, and sludges.

“Runoff” means any rainwater, leachate, or other liquid that drains over land from any part of a facility.

“Run-on” means any rainwater, leachate, or other liquid that drains over land onto any part of a facility.

“Saturated zone” means that part of the earth’s crust in which all voids are filled with water.

“Sewage sludge” has the same meaning as in 567—Chapter 67.

“Sludge” means any solid, semisolid, or liquid waste generated from a commercial or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, or any other such waste having similar characteristics and effects exclusive of the treated effluent from a wastewater treatment plant.

“Statistically significant increase” or *“SSI”* means a statistical difference large enough to account for data variability and not thought to be due to chance alone.

“Uppermost aquifer” means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility’s property boundary.

“Vertical expansion” means additional waste placement on top of or against the side slopes of a previously filled MSWLF unit, whether active, closed, or inactive.

“Waste management unit boundary” means a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer.

[Editorial change: IAC Supplement 2/25/09]

567—113.4(455B) Permits.

113.4(1) *Permit required.* An MSWLF unit shall not be constructed or operated without a permit from the department.

113.4(2) *Construction and operation.* An MSWLF unit shall be constructed and operated according to this chapter, any plans and specifications approved by the department, and the conditions of the permit. Any approved plans and specifications shall constitute a condition of the permit.

113.4(3) *Transfer of title and permit.* If title to an MSWLF unit is transferred, then the department shall transfer the permit within 60 days if the department has found that the following requirements have been met:

a. The title transferee has applied in writing to the department to request a transfer of the permit within 30 days of the transfer of the title.

b. The permitted facility is in compliance with Iowa Code chapters 455B and 455D, this chapter and the conditions of the permit.

c. The transferee possesses the equipment and personnel to operate the project in conformance with Iowa Code chapter 455B and these rules and the terms of the permit.

113.4(4) *Permit conditions.* Any permit may be issued subject to conditions specified in writing by the department that are necessary to ensure that the facility is constructed and operated in a safe and effective manner, and in compliance with Iowa Code chapters 455B and 455D, this chapter and the conditions of the permit.

113.4(5) *Effect of revocation.* If an MSWLF permit held by any public or private agency is revoked by the department, then no new permit shall be issued to that agency for that MSWLF for a period of one year from the date of revocation. Such revocation shall not prohibit the issuance of a permit for the facility to another public or private agency.

113.4(6) *Inspection of site and operation.* The department shall be notified when the construction of a new facility or MSWLF unit or significant components thereof have been completed so that the department may inspect the facility to determine if the project has been constructed in accordance with the design approved by the department. The department shall inspect and approve a new facility or MSWLF unit before MSW may be accepted. The department shall inspect a facility and its operations on a regular basis to determine if the facility is in compliance with this chapter.

113.4(7) *Duration and renewal of permits.*

a. *Operating permits.* An MSWLF permit shall be issued and may be renewed for a period no longer than five years, unless the MSWLF adopts research, development and demonstration (RD&D) provisions pursuant to subrule 113.4(10). An MSWLF permit with RD&D provisions pursuant to subrule 113.4(10) shall be issued and may be renewed for a period no longer than three years.

b. *Closure permits.* An MSWLF closure permit shall be issued only after a facility no longer accepts solid waste. A closure permit shall initially be issued for a period of 30 years. If the department extends the postclosure period beyond 30 years, then the duration of the subsequent closure permit will be determined on a site-specific basis. An MSWLF requires a closure permit until the department determines that postclosure operations are no longer necessary.

113.4(8) *Request for permit renewal.*

a. *Operating permits.* A request for an operating permit renewal shall be in writing and filed at least 90 days before the expiration of the current permit. If the applicant is found not to be in compliance with this chapter or the permit requirements, then the applicant shall achieve compliance or be placed on a compliance schedule approved by the department before the permit may be renewed.

b. *Closure permits.* A request for a closure permit renewal or termination shall be filed at least 180 days before the expiration of the current permit. If the department finds that an MSWLF has completed all required postclosure activities and no longer presents a significant risk to human health or the environment, then the department shall issue written notification that a closure permit is no longer required for the facility.

113.4(9) *Request for permit amendment.* Requests for permit amendments must be submitted in writing to the department with supporting documentation and justification.

113.4(10) *RD&D permits.* The department may issue an RD&D permit that overrides the applicable portions of this chapter, as listed below, without issuing a variance. A permit amendment from the department for leachate recirculation only does not require an RD&D permit.

a. The department may issue an RD&D permit for a new MSWLF unit, existing MSWLF unit, or lateral expansion, for which the owner or operator proposes to utilize innovative and new methods which vary from either or both of the following criteria, provided that the MSWLF unit has a leachate collection system designed and constructed to maintain less than a 30-cm (i.e., 12-inch) depth of leachate on the liner:

- (1) The run-on control systems in subrule 113.7(8); and
- (2) The liquids restrictions in subparagraph 113.8(1) "b"(3).

b. The department may issue a permit for a new MSWLF unit, existing MSWLF unit, or lateral expansion, for which the owner or operator proposes to utilize innovative and new methods which vary from the final cover criteria of subrules 113.12(1) and 113.12(2), provided that the MSWLF unit owner or operator demonstrates that the infiltration of liquid through the alternative cover system will not cause

contamination of groundwater or surface water, or cause leachate depth on the liner to exceed 30 cm (i.e., 12 inches).

c. Any permit issued under subrule 113.4(10) must include such terms and conditions at least as protective as the criteria for MSWLFs to ensure protection of human health and the environment. Such permits shall:

(1) Provide for the construction and operation of such facilities as necessary, for not longer than three years, unless renewed as provided in paragraph 113.4(10) “e”;

(2) Provide that the MSWLF unit must receive only those types and quantities of municipal solid waste and nonhazardous wastes which the department deems appropriate for the purposes of determining the efficacy and performance capabilities of the technology or process;

(3) Include such requirements as necessary to protect human health and the environment, including such requirements as necessary for testing and providing information to the department with respect to the operation of the facility;

(4) Require the owner or operator of an MSWLF unit permitted under subrule 113.4(10) to submit an annual report to the department showing whether and to what extent the site is progressing in attaining project goals. The report shall also include a summary of all monitoring and testing results, as well as any other operating information specified by the department in the permit; and

(5) Require compliance with all criteria in this chapter, except as permitted under subrule 113.4(10).

d. The department may order an immediate termination of all operations at the facility allowed under subrule 113.4(10) or other corrective measures at any time the department determines that the overall goals of the project are not being attained, including protection of human health or the environment.

e. Any permit issued under subrule 113.4(10) shall not exceed 3 years, and each renewal of a permit may not exceed 3 years.

(1) The total term for a permit for a project including renewals may not exceed 12 years; and

(2) During permit renewal, the applicant shall provide a detailed assessment of the project showing the status with respect to achieving project goals, a list of problems and the status with respect to problem resolutions, and any other requirements that the department determines necessary for permit renewal.

113.4(11) *Factors in permit issuance decisions.* The department may request that additional information be submitted for review to make a permit issuance decision. The department may review and inspect the facility, its agents and operators, and compliance history. The department may consider compliance with related requirements, such as financial assurance and comprehensive planning. The department may review whether or not a good-faith effort to maintain compliance and protect human health and the environment is being made, and whether a compliance schedule is being followed.

113.4(12) *Notice and public participation in the MSWLF permit issuance and postpermit actions process.*

a. For the purposes of this subrule, “postpermit actions” includes permit renewals and requests for major facility modifications as defined below:

(1) Change in an MSWLF facility boundary or an MSWLF unit.

(2) Application for an RD&D permit pursuant to subrule 113.4(10).

(3) Installation of a landfill gas collection system.

(4) Application for a closure permit for a MSWLF unit.

(5) Transfer of an MSWLF permit to a new owner.

(6) Variance from this chapter under rule 567—113.15(455B).

(7) Change in the postclosure land use of the property.

(8) Other significant permit actions that are determined by the department to require public notice and participation. Such actions may include requests to change any of the requirements set forth as special provisions in the permit.

b. Prior to the issuance of approval or denial for an MSWLF permit or postpermit action, public notice shall be circulated in a manner designed to inform interested and potentially interested persons of the permit or postpermit action request. Procedures for the circulation of public notice shall include at least the following procedures:

(1) Upon receipt of the permit application or postpermit action request, the department shall make a determination of whether public notice is required in accordance with this subrule. If the determination is made that public notice is required, then the department shall prepare the public notice which shall be circulated by the owner or operator within the service area of the MSWLF by posting the public notice near the entrance to the MSWLF; and by publishing the public notice in periodicals or, if appropriate, in a newspaper(s) of general circulation.

(2) The public notice shall be mailed by the department to any person upon request and posted on the department's Web site.

c. The department shall provide a period of not less than 30 days following the date of the public notice during which time interested persons may submit their written views with respect to the MWSLF permit application or postpermit action request. All written comments submitted during the 30-day comment period shall be retained by the department and considered by the department in the formulation of the department's final determinations with respect to the permit application or postpermit action request. The period for comment may be extended at the discretion of the department.

d. The contents of the public notice shall include at least the following:

(1) The name, address, and telephone number of the department.

(2) The name and address of each applicant.

(3) A brief description of each applicant's activities or operations which result in the submittal of the permit application or postpermit action request.

(4) A statement that any person may submit written and signed comments, or may request a public hearing, or both, on the proposed permit or postpermit action request. A statement of procedures to request a public hearing pursuant to paragraph 113.4(12) "e" shall be included.

(5) Locations where copies of the permit application or postpermit action request may be reviewed, including the closest department field office, and the times at which the copies shall be available for public inspection.

e. The applicant, any interested agency, person or group of persons may request or petition for a public hearing with respect to an MSWLF permit application or postpermit action request. Any such request shall clearly state issues and topics to be addressed at the hearing. Any such request or petition for public hearing must be filed with the department within the 30-day period prescribed in paragraph 113.4(12) "c" and shall indicate the interest of the party filing such request and the reasons why a hearing is warranted. The department shall hold an informal and noncontested case hearing if there is a significant public interest (including the filing of requests or petitions for such hearing) in holding such a hearing. Frivolous or insubstantial requests for hearing may be denied by the department. Instances of doubt should be resolved in favor of holding the hearing. Any hearing requested pursuant to this subrule shall be held in the service area of the MSWLF, or other appropriate area at the discretion of the department.

f. If the department determines that a public hearing is warranted, then the department shall prepare the public notice of the hearing. Public notice of any hearing held shall be circulated at least as widely as was the notice of the permit application or postpermit action request.

g. The contents of public notice of any hearing held pursuant to paragraph 113.4(12) "e" shall include at least the following:

(1) The name, address, and telephone number of the department;

(2) The name and address of each applicant whose application will be considered at the hearing;

(3) A brief reference to the public notice issued for each permit application and postpermit action request;

(4) Information regarding the time and location for the hearing;

(5) The purpose of the hearing;

(6) A concise statement of the issues raised by the person requesting the hearing;

(7) Locations where copies of the permit application or postpermit action may be reviewed, including the closest department field office, and the times at which the copies shall be available for public inspection; and

(8) A brief description of the nature of the hearing, including the rules and procedures to be followed.

h. The department shall keep a record of the commenters and of the issues raised during the public participation process and shall prepare written responses to all comments received. At the time a final decision is made, the record and copies of the department's responses shall be made available to the public.

567—113.5(455B) Permit application requirements.

113.5(1) Unless otherwise authorized by the department, an MSWLF permit applicant shall submit, at a minimum, the following permit application information to the department:

- a.* The name, address and telephone number of:
 - (1) Owner of the site where the facility will be located.
 - (2) Permit applicant.
 - (3) Official responsible for the facility.
 - (4) Certified operator (i.e., "operator") responsible for operation of the facility.
 - (5) Professional engineer(s) (P.E.) licensed in the state of Iowa and retained for the design of the facility.
 - (6) Agency to be served by the facility, if any.
 - (7) Responsible official of agency to be served, if any.
- b.* An organizational chart.
- c.* A site exploration and characterization report for the facility that complies with the requirements of subrule 113.6(4).
- d.* Plans and specifications for the facility, and quality control and assurance (QC&A) plans, that comply with the requirements of subrule 113.7(6).
- e.* A development and operations (DOPs) plan for the facility, an emergency response and remedial action plan (ERRAP), and proof of MSWLF operator certification that comply with the requirements of rule 567—113.8(455B).
- f.* An environmental monitoring plan that complies with the requirements of rules 567—113.9(455B) and 567—113.10(455B).
- g.* The project goals and time lines, and other documentation as necessary to comply with subrule 113.4(10) and other requirements of the department if an RD&D permit is being requested or renewed.
- h.* Proof of financial assurance in compliance with rule 567—113.14(455B).
- i.* A closure and postclosure plan that complies with the requirements of rules 567—113.12(455B) and 567—113.13(455B).

113.5(2) Incomplete permit applications. If the department finds the permit application information to be incomplete, the department shall notify the applicant of that fact and of the specific deficiencies. If the applicant fails to correct the noted deficiencies within 30 days, the department may reject the application and return the application materials to the applicant. The applicant may reapply without prejudice.

567—113.6(455B) Siting and location requirements for MSWLFs. This rule applies to new MSWLF units and horizontal expansions of existing MSWLF units. Except for paragraphs 113.6(2) "a," 113.6(2) "b" and 113.6(2) "f," this rule does not apply to permitted MSWLF units which have been approved prior to October 1, 2007. Information required to document compliance with the requirements of rule 567—113.6(455B) shall be consolidated and maintained in a site exploration and characterization report pursuant to subrule 113.6(4).

113.6(1) Local siting approval. The department will not consider a permit application for a new MSWLF unless local siting approval pursuant to Iowa Code section 455B.305A, if applicable, has been obtained.

113.6(2) Location restrictions. All MSWLFs shall comply with the following location restrictions.

- a. Airports.* For purposes of this chapter:
 "Airport" means public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.
 "Bird hazard" means an increase in the likelihood of bird-aircraft collisions that may cause damage to the aircraft or injury to its occupants.

(1) A prohibition on locating a new MSWLF near certain airports was enacted in Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Ford Act), Pub. L. 106-181 (49

U.S.C. 44718 note). Section 503 prohibits the “construction or establishment” of new MSWLFs after April 5, 2000, within six miles of certain smaller public airports. The Federal Aviation Administration (FAA) administers the Ford Act and has issued guidance in FAA Advisory Circular 150/5200-34A, dated January 26, 2006.

(2) Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions that are located within 10,000 feet (3,048 meters) of any airport runway end used by turbojet aircraft or within 5,000 feet (1,524 meters) of any airport runway end used by piston-type aircraft only must demonstrate to the FAA that the units are designed and operated so that the MSWLF unit does not pose a bird hazard to aircraft. The owner or operator must place the demonstration of this requirement in the operating record and submit to the department a copy of the demonstration approved by the FAA.

(3) Owners or operators proposing to site new MSWLF units and lateral expansions within a five-mile radius of any airport runway end used by turbojet or piston-type aircraft must notify the affected airport and the FAA. A copy of these notifications shall be submitted to the department.

b. Floodplains. For purposes of this chapter:

“*Floodplain*” means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands that may be inundated by a 100-year flood.

“*100-year flood*” means a flood that has a 1 percent or greater chance of recurring in any given year or a flood of a magnitude equaled or exceeded once in 100 years on the average over a significantly long period.

“*Washout*” means the carrying away of solid waste by waters of the base flood.

Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions located in 100-year floodplains must demonstrate to the department that the unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment. The owner or operator must place the demonstration in the operating record and submit a copy of the demonstration to the department.

c. Wetlands. For purposes of this chapter:

“*Wetlands*” means those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

New MSWLF units and lateral expansions shall not be located in wetlands, unless the owner or operator can make the following demonstrations to the department:

(1) Where applicable under Section 404 of the Clean Water Act or applicable state wetlands laws, the presumption that a practicable alternative to the proposed landfill is available which does not involve wetlands is clearly rebutted;

(2) The construction and operation of the MSWLF unit will not:

1. Cause or contribute to violations of any applicable state water quality standard;
2. Violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act;

3. Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat protected under the Endangered Species Act of 1973; and

4. Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary;

(3) The MSWLF unit will not cause or contribute to significant degradation of wetlands. The owner or operator must demonstrate the integrity of the MSWLF unit and its ability to protect ecological resources by addressing the following factors:

1. Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the MSWLF unit;
2. Erosion, stability, and migration potential of dredged and fill materials used to support the MSWLF unit;
3. The volume and chemical nature of the waste managed in the MSWLF unit;

4. Impacts on fish, wildlife, and other aquatic resources and their habitats from release of the solid waste;

5. The potential effects of catastrophic release of waste to wetlands and the resulting impacts on the environment; and

6. Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected;

(4) To the extent required under Section 404 of the Clean Water Act or applicable state wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by subparagraph 113.6(2) "c"(1), then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of human-made wetlands); and

(5) Sufficient information is available to make a reasonable determination with respect to these demonstrations.

d. *Fault areas.* For the purposes of this chapter:

"*Fault*" means a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.

"*Displacement*" means the relative movement of any two sides of a fault measured in any direction.

"*Holocene*" means the most recent epoch of the Quaternary Period, extending from the end of the Pleistocene Epoch to the present.

New MSWLF units and lateral expansions shall not be located within 200 feet (60 meters) of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the department that an alternative setback distance of less than 200 feet (60 meters) will prevent damage to the structural integrity of the MSWLF unit and will be protective of human health and the environment.

e. *Seismic impact zones.* For the purposes of this chapter:

"*Seismic impact zone*" means an area with a 10 percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in 250 years.

"*Maximum horizontal acceleration in lithified earth material*" means the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 90 percent or greater probability that the acceleration will not be exceeded in 250 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

"*Lithified earth material*" means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. "Lithified earth material" does not include human-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth's surface.

New MSWLF units and lateral expansions shall not be located in seismic impact zones, unless the owner or operator demonstrates to the department that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site. The owner or operator must place the demonstration in the operating record and submit a copy of the demonstration to the department.

f. *Unstable areas.* For purposes of this chapter:

"*Unstable area*" means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas may include poor foundation conditions, areas susceptible to mass movements, and karst terranes.

"*Structural components*" means liners, leachate collection systems, final covers, run-on systems, runoff systems, and any other component used in the construction and operation of the MSWLF that is necessary for protection of human health and the environment.

“Poor foundation conditions” means those areas where features exist which indicate that a natural or human-induced event may result in inadequate foundation support for the structural components of an MSWLF unit.

“Areas susceptible to mass movement” means those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the MSWLF unit, because of natural or human-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluction, block sliding, and rock fall.

“Karst terranes” means areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terranes include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys.

Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions located in an unstable area must demonstrate to the department that engineering measures have been incorporated into the MSWLF unit’s design to ensure that the integrity of the structural components of the MSWLF unit will not be disrupted. The owner or operator must place the demonstration in the operating record and submit a copy of the demonstration to the department. The owner or operator must consider the following factors, at a minimum, when determining whether an area is unstable:

- (1) On-site or local soil conditions that may result in significant differential settling;
- (2) On-site or local geologic or geomorphologic features; and
- (3) On-site or local human-made features or human-induced events (both surface and subsurface).

g. *Threatened or endangered flora and fauna.*

(1) All MSWLF owners or operators shall contact the department’s Iowa Natural Areas Inventory with a request to search its records to determine the presence of, or habitat for, any threatened or endangered species or communities of flora or fauna on the proposed site. In the event that the department’s Iowa Natural Areas Inventory does not contain records of threatened or endangered species or communities but their presence is suspected, then the permit applicant shall conduct a site survey.

(2) Should any threatened or endangered species be identified pursuant to subparagraph 113.6(2) “g”(1), the permit applicant shall demonstrate to the department that the MSWLF unit will not cause or contribute to significant degradation of the threatened or endangered species or communities.

h. *Cultural resources.*

(1) All MSWLF owners and operators shall prepare a comprehensive listing of, and assessment of the impact on, any archaeologically, historically, or architecturally significant properties on the proposed site. To assess the impact, the permit applicant shall consult with the historic preservation bureau of the state historical society of Iowa.

(2) Should any significant cultural resources be identified pursuant to subparagraph 113.6(2) “h”(1), the permit applicant shall demonstrate to the department that the MSWLF unit will not cause or contribute to significant degradation of those cultural resources.

i. *Separation from groundwater.* The base of an MSWLF unit shall be situated so that the base of the waste within the proposed unit is at least 5 feet above the high water table unless a greater separation is required to ensure that there will be no significant adverse effect on groundwater or surface waters or a lesser separation is unlikely to have a significant adverse effect on groundwater or surface waters. Artificial means of lowering the high water table are acceptable. The separation of the base of an MSWLF unit from the high water table shall be measured and maintained in a manner acceptable to the department.

j. *Wells and community water systems.* An MSWLF unit shall not be within 1,000 feet of any potable well or community water system in existence at the time of receipt of the original permit application or application to laterally expand the permitted MSWLF unit for the facility that is being used for human or livestock consumption. Groundwater monitoring wells are exempt from this requirement. The department may also exempt extraction wells utilized as part of a remediation system from this requirement. A new MSWLF unit shall not be within 1,000 feet of a downgradient agricultural drainage well.

k. *Property line setback.* An MSWLF unit shall be at least 50 feet from the adjacent property line.

l. Housing and sensitive populations. An MSWLF unit shall not be within 500 feet of an occupied residence, recreational area, child care facility, educational facility, or health care facility in existence at the time of receipt of the original permit application or application to laterally expand the permitted MSWLF unit, unless there is a written agreement between the MSWLF owner and such facility. The written agreement shall be filed with the county recorder for abstract of title purposes, and a copy submitted to the department.

113.6(3) *Soil and hydrogeologic investigations.* An MSWLF shall have a qualified groundwater scientist, as defined in paragraph 113.10(1)“d,” to conduct a soil and hydrogeologic investigation in accordance with this subrule. The purpose of this investigation is to obtain data to determine potential routes of contaminant migration via groundwater. Such information is vital for completion of the site exploration and characterization report, and the hydrologic monitoring system plan and design. This subrule sets forth the minimum requirements for soil and hydrogeologic investigations. The MSWLF shall comply with this subrule unless the department issues written approval due to specific site conditions.

a. Number of borings. A sufficient number of borings shall be made to accurately identify the stratigraphic and hydrogeologic conditions at the site.

b. Depth of borings. Unless otherwise approved by the department in writing, the following requirements shall apply to the depth of borings.

(1) All borings shall be a minimum of 25 feet deep and at least 10 feet below the water table.

(2) At a minimum, half of all borings shall extend 20 feet into the uppermost aquifer, 50 feet below the water table, or 10 feet into bedrock.

(3) At a minimum, one boring shall extend 10 feet into bedrock or 100 feet below the lowest ground surface elevation.

(4) All borings shall be of sufficient depth to correlate strata between borings.

c. Boring method and soil samples.

(1) Continuous samples shall be collected for all borings, unless otherwise approved by the department in writing.

(2) Boring logs shall be as detailed as possible in describing each stratum.

(3) Samples shall be clearly marked, preserved and transported in accordance with laboratory procedures.

(4) The permit applicant shall keep and preserve samples until at least 30 days after the permit is issued.

(5) Soil samples from each stratum shall be tested for falling-head permeability and grain size distribution.

d. Conversion of or plugging borings.

(1) Borings may be converted to piezometers or monitoring wells. However, the conversion of such borings does not guarantee that more piezometers or monitoring wells will not be required in the department-approved hydrologic monitoring system plan and design.

(2) Borings not converted to piezometers or monitoring wells shall be plugged and properly sealed so as not to create pathways for subsurface or surface pollution migration. Borings converted to piezometers or monitoring wells may still need to be partially plugged depending on the depth of the boring. Plugging shall be performed pursuant to paragraph 113.10(2)“d.”

e. Soil and hydrogeologic investigation description and analysis. A soil and hydrogeologic investigation description and analysis shall be completed and maintained and, at a minimum, shall contain the following:

(1) The boring logs pursuant to subparagraph 113.6(3)“c”(2).

(2) A description of the properties of each soil and bedrock stratum as appropriate, including:

1. Soil texture and classification.

2. Particle size distribution.

3. Mineral composition, cementation, and soil structure.

4. Permeability, including horizontal and vertical permeability, and porosity.

5. Geologic structure, including strike, dip, folding, faulting and jointing.

6. Previous activities and infrastructure at the site that could affect geology and hydrogeology, such as but not limited to mining, quarry operations, borrow pits, waste disposal, storage tanks, pipelines, utilities and tile lines.

7. Lenses and other discontinuous units, voids, solution openings, layering, fractures, other heterogeneity, and the scale or frequency of the heterogeneity.

8. Correlation and continuity of strata between borings.

(3) Descriptions of the hydrogeologic units within the saturated zone, including:

1. Thickness.

2. Hydraulic properties, including as appropriate, conductivity, transmissivity, storativity, and effective porosity.

3. Concentrations of chemical constituents listed in Appendix I present in the groundwater of hydrogeologic units and the source of those constituents, if known.

4. Role and effect of each hydrogeologic unit as an aquifer, aquitard, or perched saturated zone.

5. The actual or potential use of the aquifers as water supplies.

(4) Plan view maps, and a series of cross sections with two oriented perpendicular and two oriented parallel to the predominant directions of groundwater flow through the MSWLF unit, showing:

1. The extent of soil and bedrock strata.

2. The position of the water table.

3. The position of the uppermost aquifer.

4. Measured values of hydraulic head.

5. Equipotential lines and inferred groundwater streamlines of the water table, and the uppermost aquifer if different from the water table.

6. Location of soil and bedrock borings.

7. Location of piezometers and monitoring points, if any.

(5) A description and evaluation of horizontal and vertical groundwater flow which specifically addresses the following and their significance to the movement of pollutants carried by groundwater:

1. Local, intermediate and regional groundwater systems.

2. Groundwater recharge and discharge areas within and immediately surrounding the facility, including interactions with perennial and intermittent surface waters and how the facility affects recharge rates.

3. Existing and proposed groundwater and surface water withdrawals.

4. The effects of heterogeneity, fractures or directional differences in permeability on groundwater movement.

5. Directions of groundwater movement, including vertical components of flow, specific discharge rates and average linear velocities within the hydrologic strata.

6. Seasonal or other temporal fluctuations in hydraulic head.

7. The effect of existing and proposed MSWLF units.

(6) An analysis of potential impacts on groundwater and surface water quality, and water users, in the event of a theoretical release at the most downgradient portion of each MSWLF unit. The analysis shall at a minimum utilize contaminants and indicator parameters with high mobility in groundwater (e.g., chlorides, organic solvents). This analysis shall include:

1. Assumptions and approximations utilized, and why they were utilized.

2. If a model is utilized, a thorough description of models used and each model's capabilities and limitations, including the reliability and accuracy of the models in actual field tests.

3. Projected paths and rates of movement of contaminants found in leachate.

(7) Recommendations for the location of the proposed MSWLF unit and conceptual design based on hydrogeologic information.

113.6(4) Site exploration and characterization report. An MSWLF shall maintain a site exploration and characterization report. At a minimum, the site exploration and characterization report shall detail compliance with the requirements of rule 567—113.6(455B) and shall contain the following components.

a. A title page and index.

b. A legal description of the site.

c. Proof of the applicant's ownership of the site and legal entitlement to use the site as an MSWLF. If the applicant does not own the site, then proof of legal entitlement to the site, such as, for example, a lease, must be submitted. Such legal entitlement must include the following:

- (1) Provisions that allow continued disposal operations until closure of the facility.
- (2) Provisions for the performance of facility closure operations.
- (3) Provisions for postclosure care for at least a 30-year period after facility closure.

d. Proof of the applicant's local siting approval pursuant to Iowa Code section 455B.305A, if applicable.

e. Scaled maps or aerial photographs locating the boundaries of the facility and identifying:

- (1) North and other principal compass points.
- (2) Section lines and other legal boundaries.
- (3) Zoning and land use within 0.5 miles.
- (4) Haul routes to and from the facility, including load limits or other restrictions on those routes.
- (5) Topography within 0.5 miles.
- (6) Applicable setback distances and location requirements pursuant to rule 567—113.6(455B),

including:

1. Airports within 6 miles of existing, new and planned MSWLF units.
2. Floodplains within or adjacent to the facility.
3. Wetlands within or adjacent to the facility.
4. Fault areas within 200 feet of existing, new and planned MSWLF units.
5. Seismic impact zones within or adjacent to the facility.
6. Unstable areas within or adjacent to the facility.
7. Location of threatened or endangered species within or adjacent to the facility.
8. Location of cultural resources within or adjacent to the facility.
9. Wells within 1,000 feet of upgradient existing, new and planned MSWLF units.
10. Community water systems within 1 mile of upgradient existing, new and planned MSWLF units.
11. Boundaries of the existing, new and planned MSWLF units and the facility property line.
12. Housing and sensitive populations within 500 feet of existing, new and planned MSWLF units.

f. The bird-aircraft hazard demonstration pursuant to paragraph 113.6(2) "a," if applicable.

g. The floodplain demonstration pursuant to paragraph 113.6(2) "b," if applicable.

h. The wetlands demonstration pursuant to paragraph 113.6(2) "c," if applicable.

i. The fault area demonstration pursuant to paragraph 113.6(2) "d," if applicable.

j. The seismic impact zone demonstration pursuant to paragraph 113.6(2) "e," if applicable.

k. The unstable area demonstration pursuant to paragraph 113.6(2) "f," if applicable.

l. The threatened or endangered flora and fauna demonstration pursuant to paragraph 113.6(2) "g," if applicable.

m. The cultural resources demonstration pursuant to paragraph 113.6(2) "h," if applicable.

n. Copies of written agreements with surrounding property owners pursuant to paragraph 113.6(2) "i," if applicable.

o. The soil and hydrogeologic investigation description and analysis pursuant to paragraph 113.6(3) "e."

567—113.7(455B) MSWLF unit design and construction standards. All MSWLF units shall be designed and constructed in accordance with this rule.

113.7(1) *Predesign meeting with the department.* A potential applicant for a new MSWLF unit may schedule a predesign meeting with the department's landfill permitting staff prior to beginning work on the plans and specifications of a modified or new MSWLF. The purpose of this meeting is to help minimize the need for revisions upon submittal of the official designs and specifications.

113.7(2) *Plans and specifications.*

a. Unless otherwise requested by the department, one copy of plans, specifications and supporting documents shall be sent to the department for review. Upon written department approval, the documents shall be submitted in triplicate to the department for proper distribution.

b. All new MSWLF units shall be constructed in compliance with the rules and regulations in effect at the time of construction. Previous department approval of plans and specifications for MSWLF units not yet constructed shall be superseded by the promulgation of new rules and regulations, after which plans and specifications shall be resubmitted to the department for approval prior to construction and operation.

113.7(3) General site design and construction requirements. An MSWLF shall have the following:

- a. All-weather access roads to the facility.
- b. A perimeter fence with a lockable gate(s) to help prevent unauthorized access.
- c. A sign at the entrance to the facility specifying:
 - (1) Name and permit number of the facility.
 - (2) Days and hours that the facility is open to the public or a statement that the facility is not open to the public.
 - (3) A general list of materials that are not accepted.
 - (4) Telephone number of the official responsible for operation of the facility and the emergency contact person(s).
- d. All-weather access roads within the facility.
- e. Signs or pavement markings clearly indicating safe and proper on-site traffic patterns.
- f. Adequate queuing distance for vehicles entering and exiting the property.
- g. A scale certified by the Iowa department of agriculture and land stewardship.

113.7(4) MSWLF unit subgrade. The subgrade for a new MSWLF unit shall be constructed as follows:

- a. All trees, stumps, roots, boulders, debris, and other material capable of deteriorating in situ material strength or of creating a preferential pathway for contaminants shall be completely removed or sealed off prior to construction of the MSWLF unit.
- b. The material beneath the MSWLF unit shall have sufficient strength to support the weight of the unit during all phases of construction and operation. The loads and loading rate shall not cause or contribute to failure of the liner and leachate collection system.
- c. The total settlement or swell of the MSWLF unit's subgrade shall not cause or contribute to failure of the liner and leachate collection system.
- d. If the in situ material of the MSWLF unit's subgrade cannot meet the requirements of paragraphs 113.7(4) "b" and 113.7(4) "c," then such material shall be removed and replaced with material capable of compliance.
- e. The subgrade of an MSWLF unit shall be constructed and graded to provide a smooth working surface on which to construct the liner.
- f. The subgrade of an MSWLF unit shall not be constructed in or with frozen soil.

113.7(5) MSWLF unit liners and leachate collection systems. The liner and leachate collection system for a new MSWLF unit shall be constructed in accordance with the requirements of this subrule. All active portions must have a composite liner or an alternative liner approved by the department. An MSWLF unit must have a functioning leachate collection system during its active life.

a. *Liner systems.* An MSWLF unit shall have a liner system that complies with either the composite liner requirements of subparagraph 113.7(5) "a"(1) or an alternative liner system that complies with the requirements of subparagraph 113.7(5) "a"(2). Liners utilizing compacted soil must place the compacted soil in lifts no thicker than 8 inches after compaction.

(1) Composite liner systems.

1. A composite liner consists of two components, an upper flexible membrane liner (FML) and a lower compacted soil liner.

2. The upper component must consist of a minimum 30-mil flexible membrane liner (FML). FML components consisting of high-density polyethylene (HDPE) shall be at least 60 mil thick. The FML component must be installed in direct and uniform contact with the lower compacted soil component.

3. The lower component must consist of at least a 2-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} centimeters per second (cm/sec). The compacted soil must be placed in lifts no thicker than 8 inches after compaction.

4. The composite liner must be adequately sloped toward the leachate collection pipes to provide drainage of leachate. Unless alternative design requirements to this performance standard are approved as part of the permit under subrule 113.2(11) (relating to equivalency review procedure), the leachate collection system shall have a slope greater than or equal to 2 percent and not exceeding 33 percent.

(2) Alternative liner systems.

1. The design must ensure that the concentration values listed in Table I of rule 567—113.7(455B) will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified pursuant to numbered paragraph 113.7(5) “a”(2)“2.” Alternative liners utilizing compacted soil must place the compacted soil in lifts no thicker than 8 inches.

2. The relevant point of compliance specified by the department must be within 50 feet of the planned liner or waste boundary, unless site conditions dictate otherwise, downgradient of the facility with respect to the hydrologic unit being monitored in accordance with subparagraph 113.10(2) “a”(2), and located on land owned by the owner of the MSWLF unit. The relevant point of compliance specified by the department shall be at least 50 feet from the property line of the facility.

3. When approving an alternative liner design, the department shall consider at least the following factors:

- The hydrogeologic characteristics of the facility and surrounding land.
- The climatic factors of the area.
- The volume and physical and chemical characteristics of the leachate.
- The sensitivities and limitations of the modeling demonstrating the applicable point of compliance.
- Practicable capability of the owner or operator.

4. The alternative liner must be adequately sloped toward the leachate collection pipes to provide drainage of leachate. Unless alternative design requirements to this performance standard are approved as part of the permit under subrule 113.2(11) (relating to equivalency review procedure), the leachate collection system shall have a slope greater than or equal to 2 percent and not exceeding 33 percent.

Table I

Chemical	MCL (mg/l)
Arsenic	0.01
Barium.	1.0
Benzene.	0.005
Cadmium.	0.01
Carbon tetrachloride	0.005
Chromium (hexavalent)	0.05
2,4-Dichlorophenoxy acetic acid	0.1
1,4-Dichlorobenzene.	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
Endrin	0.0002
Fluoride.	4.0
Lindane	0.004
Lead.	0.05
Mercury.	0.002
Methoxychlor	0.1
Nitrate	10.0
Selenium	0.01
Silver.	0.05
Toxaphene.	0.005
1,1,1-Trichloromethane.	0.2
Trichloroethylene	0.005
2,4,5-Trichlorophenoxy acetic acid	0.01
Vinyl chloride	0.002

b. Leachate collection system. All MSWLF units shall have a leachate collection system that complies with the following requirements:

(1) The leachate collection system shall be designed and constructed to function for the entire active life of the facility and the postclosure period.

(2) The leachate collection system shall be of a structural strength capable of supporting waste and equipment loads throughout the active life of the facility and the postclosure period.

(3) The leachate collection system shall be designed and constructed to minimize leachate head over the liner at all times. An MSWLF unit shall have a leachate collection system that maintains less than a 30-centimeter (i.e., 12-inch) depth of leachate over the liner. The leachate collection system shall have a method for accurately measuring the leachate head on the liner at the system's lowest point(s) within the MSWLF unit (e.g., sumps). Furthermore, an additional measuring device shall be installed to measure leachate directly on the liner in the least conductive drainage material outside of the sump and collection trench. Leachate head measurements from cleanout lines or manholes are not acceptable for the second measurement. All such measurement devices shall be in place before waste is placed in the MSWLF unit.

(4) If the leachate collection system is not designed and constructed factoring in leachate recirculation or bioreactor operations, the department may prohibit such activities within the MSWLF unit.

(5) The collection pipes shall be of a length and cross-sectional area that allow for cleaning and inspection through the entire length of all collection pipes at least once every three years. The collection pipes shall not be designed or constructed with sharp bends that prevent cleaning or inspection along any section of the collection pipe or that may cause the collection pipe to be damaged during cleaning or inspection.

(6) Leachate collection system designs shall attempt to minimize the potential for clogging due to mass loading.

(7) Unless alternative design requirements are approved as part of the permit under subrule 113.2(11) (relating to equivalency review procedure), the following design requirements shall apply:

1. A geotextile cushion over the flexible membrane liner (FML), if the liner utilizes an FML and granular drainage media. A geotextile cushion is not required if the granular drainage media is well rounded and less than 3/8 inch in diameter. The geotextile's mass shall be determined based on the allowable pressure on the geomembrane.

2. Collection pipe(s) at least 4 inches in diameter at the base of the liner slope(s), surrounded by the high hydraulic-conductivity material listed in numbered paragraph 113.7(5)“b”(7)“3” below. The collection pipe shall have slots or holes large enough to minimize the potential for clogging from fines conveyed by incoming leachate.

3. One of the following high hydraulic-conductivity materials:

- High hydraulic-conductivity material (e.g., gravel) of uniform size and a fines content of no more than 5 percent by weight passing a #200 sieve. The high hydraulic-conductivity material shall be at least 12 inches in depth and have a hydraulic conductivity of at least 1×10^{-2} cm/sec; or

- A geosynthetic drainage media (e.g., geonet). The transmissivity of geonets shall be tested with method ASTM D4716, or an equivalent test method, to demonstrate that the design transmissivity will be maintained for the design period of the facility. The testing for the geonet in the liner system shall be conducted using actual boundary material intended for the geonet at the maximum design normal load for the MSWLF unit, and at the design load expected from one lift of waste. At the maximum design normal load, testing shall be conducted for a minimum period of 100 hours unless data equivalent of the 100-hour period is provided, in which case the test shall be conducted for a minimum period of one hour. In the case of the design load from one lift of waste, the minimum period shall be one hour. For geonets used in final covers, only one test shall be conducted for a minimum period of one hour using the expected maximum design normal load from the cover soils and the actual boundary materials intended for the geonet. A granular layer at least 12 inches thick with a hydraulic conductivity of at least 1×10^{-3} cm/sec shall be placed above the geosynthetic drainage material that readily transmits leachate and provides separation between the waste and liner.

(8) Manholes within the MSWLF unit shall be designed to minimize the potential for stressing or penetrating the liner due to friction on the manhole exterior from waste settlement.

(9) The leachate drainage and collection system within the MSWLF unit shall not be used for the purpose of storing leachate. If leachate is to be stored, it shall be stored in designated storage structures outside of the MSWLF unit.

(10) All of the facility's leachate storage and management structures outside of the MSWLF unit (e.g., tanks, holding ponds, pipes, sumps, manholes, lift stations) and operations shall have containment structures or countermeasures adequate to prevent seepage to groundwater or surface water. The containment structures and countermeasures for leachate storage shall be at least as protective of groundwater at the liner of the MSWLF unit on a performance basis.

(11) Unless alternative design requirements are approved as part of the permit under subrule 113.2(11) (relating to equivalency review procedure), the leachate storage structures shall be able to store at least 7 days of accumulated leachate at the maximum generation rate used in designing the leachate collection system. Such minimum storage capacity may be constructed in phases over time so long as the 7-day accumulation capacity is maintained. The storage facility shall also have the ability to load tanker trucks in case sanitary sewer service is unavailable for longer than 7 days.

(12) The leachate collection system shall be equipped with valves or devices similar in effectiveness so that leachate can be controlled during maintenance.

(13) The leachate collection system shall be accessible for maintenance at all times and under all weather conditions.

(14) The permit holder shall annually submit a Leachate Control System Performance Evaluation (LCSPE) Report as a supplement to the facility Annual Water Quality Report, as defined in subrule 113.10(10). The report shall include an evaluation of the effectiveness of the system in controlling the leachate, leachate head levels and elevations, the volume of leachate collected and transported to the treatment works or discharged under any NPDES permits, records of leachate contaminants testing required by the treatment works, proposed additional leachate control measures, and an implementation schedule in the event that the constructed system is not performing effectively.

113.7(6) *Quality control and assurance programs.* All MSWLF units shall be constructed under the supervision of a strict quality control and assurance (QC&A) program to ensure that MSWLF units are constructed in accordance with the requirements of rule 567—113.7(455B) and the approved plans and specifications. At a minimum, such a QC&A program shall consist of the following.

a. The owner or operator shall designate a quality control and assurance (QC&A) officer. The QC&A officer shall be a professional engineer (P.E.) registered in Iowa. The QC&A officer shall not be an employee of the facility, the construction company or construction contractor. The owner or operator shall notify the department of the designated QC&A officer and provide the department with that person's contact information. The QC&A officer may delegate another person or persons who are not employees of the facility to supervise or implement an aspect of the QC&A program.

b. The QC&A officer shall document compliance with rule 567—113.7(455B), and the approved plans and specifications, for the following aspects of construction:

(1) The MSWLF unit's subgrade.

(2) The liner system, as applicable, below:

1. The flexible membrane liner (FML). Destructive testing of the FML shall be kept to side slopes when continuous seams are utilized. Patches over FML destructive testing areas shall be checked with nondestructive methods.

2. The compacted clay component of the liner system. A minimum of five field moisture density tests per 8-inch lift per acre shall be performed to verify that the correct density, as correlated to permeability by a laboratory analysis, has been achieved. Laboratory hydraulic conductivity testing of Shelby tube samples from the constructed soil liner or test pad, or field hydraulic conductivity testing of the constructed soil liner or test pad, or other methods approved by the department, shall be utilized as a QC&A test.

(3) The leachate collection, conveyance and storage systems.

(4) Any other aspect of construction as required by the department.

c. A sampling and testing program shall be implemented by the QC&A officer as part of the QC&A program. The sampling and testing program shall:

(1) Verify full compliance with the requirements of rule 567—113.7(455B), and the approved plans and specifications.

(2) Be approved by the department prior to construction of the MSWLF unit.

(3) Detail how each stage of construction will be verified for full compliance with the requirements of rule 567—113.7(455B), and the approved plans and specifications.

(4) Be based on statistically significant sampling techniques and establish criteria for the acceptance or rejection of materials and constructed components of the MSWLF unit.

(5) Detail what actions will take place to remedy and verify any material or constructed component that is not in compliance with the requirements of rule 567—113.7(455B), and the approved plans and specifications.

d. The QC&A officer shall document the QC&A program. Upon completion of the MSWLF unit construction, the QC&A officer shall submit a final report to the department that verifies compliance with the requirements of rule 567—113.7(455B), and the approved plans and specifications. A copy of the final report shall also be maintained by the facility in the operating record. At a minimum, the final report shall include the following.

(1) A title page and index.

(2) The name and permit number of the facility.

(3) Contact information for the QC&A officer and persons delegated by the QC&A officer to supervise or implement an aspect of the QC&A program.

(4) Contact information for all construction contractors.

(5) Copies of daily reports containing the following information.

1. The date.

2. Summary of weather conditions.

3. Summary of locations on the facility where construction was occurring.

4. Summary of equipment, materials and personnel utilized in construction.

5. Summary of meetings held regarding the construction of the MSWLF unit.

6. Summary of construction progress.

7. Photographs of the construction progress, with descriptions of the time, subject matter and location of each photograph.

8. Details of sampling and testing program for that day. At a minimum, this report shall include details of where sampling and testing occurred, the methods utilized, personnel involved and test results.

9. Details of how any material or constructed component that was found not to be in compliance via the sampling and testing program was remedied.

(6) A copy of detailed as-built drawings with supporting documentation and photographic evidence. This copy shall also include a narrative explanation of changes from the original department-approved plans and specifications.

(7) A signed and sealed statement by the QC&A officer that the MSWLF unit was constructed in accordance with the requirements of rule 567—113.7(455B), and the approved plans and specifications.

113.7(7) Vertical and horizontal expansions of MSWLF units. All vertical and horizontal expansions of disposal airspace over existing and new MSWLF units shall comply with the following requirements.

a. Horizontal expansions shall, at a minimum, comply with the following requirements:

(1) Horizontal expansions are new MSWLF units and, at a minimum, shall be designed and constructed in accordance with subrules 113.7(4), 113.7(5) and 113.7(6).

(2) The slope stability of the horizontal expansion between the existing unit and new MSWLF unit shall be analyzed. The interface between two MSWLF units shall not cause a slope failure of either of the MSWLF units.

(3) A horizontal expansion may include a vertical elevation increase of an existing MSWLF unit, pursuant to paragraph 113.7(7)“b,” if approved by the department.

b. Vertical expansions shall, at a minimum, comply with the following requirements:

(1) A vertical expansion of an MSWLF unit shall not be allowed if the MSWLF unit does not have an approved leachate collection system and a composite liner or a leachate collection system and an alternative liner modeled at an approved point of compliance.

(2) An analysis of the structural impacts of the proposed vertical expansion on the liner and leachate collection system shall be completed. The vertical expansion shall not contribute to the structural failure of the liner and leachate collection system.

(3) An analysis of the impact of the proposed vertical expansion on leachate generation shall be completed. The vertical expansion shall not overload the leachate collection system or contribute to excess head on the liner.

(4) An analysis of the effect of the proposed vertical expansion on run-on, runoff and discharges into waters of the state shall be completed. The vertical expansion shall not cause a violation of subrule 113.7(8).

(5) The proposed vertical expansion shall be in compliance with the final slopes required at closure pursuant to paragraph 113.12(1) "e."

(6) An analysis of the potential impact of the proposed vertical expansion on litter generation shall be completed. Landfill management strategies may need to be amended to help prevent increased litter.

(7) An analysis of the impact of the proposed vertical expansion on lines-of-sight and any visual buffering utilized by the landfill shall be completed.

113.7(8) *Run-on and runoff control systems.*

a. Owners or operators of all MSWLF units must design, construct, and maintain the following:

(1) A run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a 25-year storm;

(2) A runoff control system from the active portion of the landfill to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

b. Runoff from the active portion of the MSWLF unit must be handled in accordance with paragraph 113.10(1) "a."

567—113.8(455B) Operating requirements. The requirements of this rule shall be consolidated in a development and operations plan (DOPs) pursuant to subrule 113.8(4) and the emergency response and remedial action plan (ERRAP) pursuant to subrule 113.8(5), as applicable.

113.8(1) *Prohibited operations and activities.* For the purposes of this subrule, "regulated hazardous waste" means a solid waste that is a hazardous waste, as defined in Iowa Code section 455B.411.

a. *Waste screening for prohibited materials.* Owners or operators of all MSWLF units must implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes, polychlorinated biphenyls (PCB) wastes and other prohibited wastes listed in paragraph 113.8(1) "b." This program must include, at a minimum:

(1) Random inspections of incoming loads unless the owner or operator takes other steps to ensure that incoming loads do not contain regulated hazardous wastes, PCB wastes or other prohibited wastes listed in paragraph 113.8(1) "b";

(2) Records of any inspections;

(3) Training of facility personnel to recognize regulated hazardous wastes, PCB wastes and other prohibited wastes listed in paragraph 113.8(1) "b"; and

(4) Notification of the EPA regional administrator if regulated hazardous wastes or PCB wastes are discovered at the facility.

b. *Materials prohibited from disposal.* The following wastes shall not be accepted for disposal by an MSWLF. Some wastes may be banned from disposal via the multiple categories listed below.

(1) Hazardous waste, whether it is a chemical compound specifically listed by EPA as a regulated hazardous waste or a characteristic hazardous waste pursuant to the characteristics below:

1. Ignitable in that the waste has a flash point (i.e., it will ignite) at a temperature of less than 140 degrees Fahrenheit.

2. Corrosive in that the waste has a pH less than 2 or greater than 12.5.

3. Reactive in that the waste is normally unstable; reacts violently with water; forms an explosive mixture with water; contains quantities of cyanide or sulfur that could be released into the air in sufficient quantity to be a danger to human health; or can easily be detonated or exploded.

4. Toxicity characteristic leaching procedure (TCLP) (EPA Method 1311) toxic, in that a TCLP listed chemical constituent exceeds the EPA assigned concentration standard in 40 CFR Part 261 or the

department assigned concentration standard in Table I of rule 567—113.7(455B). Waste from a residential building that is contaminated by lead-based paint (i.e., the waste fails the TCLP test for lead only) may be disposed of in an MSWLF unit. The purpose of this exclusion is to help prevent the exposure of children to lead-based paint. Therefore, the meaning of “residential building” in regard to this TCLP exclusion shall be interpreted broadly and include any building which children or parents may utilize as a residence (temporarily or permanently). Such residential buildings include, but are not limited to, single-family homes, apartment buildings, townhomes, condominiums, public housing, military barracks, nursing homes, hotels, motels, bunkhouses, and campground cabins.

(2) Polychlorinated biphenyl (PCB) wastes with a concentration equal to or greater than 50 parts per million (ppm).

(3) Free liquids, liquid waste and containerized liquids. For purposes of this subparagraph, “liquid waste” means any waste material that is determined to contain “free liquids” as defined by Method 9095B (Paint Filter Liquids Test), as described in Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods (EPA Pub. No. SW-846). For the purposes of this subparagraph, “gas condensate” means the liquid generated as a result of the gas recovery process(es) at the MSWLF unit. However, free liquids and containerized liquids may be placed in MSWLF units if:

1. The containerized liquid is household waste other than septic waste. The container must be a small container similar in size to that normally found in household waste;

2. The waste is leachate or gas condensate derived from the MSWLF unit, whether it is a new or existing MSWLF unit or lateral expansion, and is designed with a composite liner and leachate collection system as described in paragraph 113.7(5) “a.” The owner or operator must demonstrate compliance with this subparagraph and place the demonstration in the operating record; or

3. The MSWLF unit is a research, development and demonstration (RD&D) project in which the department has authorized the addition of liquids and meets the applicable requirements of subrule 113.4(10).

(4) Septage, which is the raw material, liquids and pumpings from a septic system, unless treated pursuant to 567—Chapter 68.

(5) Appliances as defined pursuant to 567—Chapter 118, unless there is documentation that the appliance has been demanufactured pursuant to 567—Chapter 118.

(6) Radioactive waste, excluding luminous timepieces and other items using very small amounts of tritium.

(7) Infectious waste, unless managed and disposed of pursuant to 567—Chapter 109.

(8) Hot loads, meaning solid waste that is smoking, smoldering, emitting flames or hot gases, or otherwise indicating that the solid waste is in the process of combustion or close to igniting. Ash that has not been fully quenched or cooled is considered a hot load. Such wastes may be accepted at the gate, but shall be segregated and completely extinguished and cooled in a manner as safe and responsible as practical before disposal.

(9) Asbestos-containing material (ACM) waste with greater than 1 percent asbestos, unless managed and disposed of pursuant to 567—Chapter 109.

(10) Petroleum-contaminated soil, unless managed and remediated pursuant to 567—Chapter 120.

(11) Grit and bar screenings, and grease skimmings, unless managed and disposed of pursuant to 567—Chapter 109.

(12) Waste tires, unless each tire is processed into pieces no longer than 18 inches on any side. The department encourages the recycling of all waste tires, even if processed to disposal standards.

(13) Yard waste, except in the following circumstances:

1. When the yard waste is collected for disposal as a result of a severe storm and the yard waste originates in an area declared to be a disaster area in a declaration issued by the President of the United States or the governor.

2. When the yard waste is collected for disposal to control, eradicate, or prevent the spread of insect pests, tree and plant diseases, or invasive plant species.

3. When the yard waste is disposed of in a sanitary landfill that operates a methane collection system that produces energy. A methane collection system that burns landfill gas without using the energy for a

purpose other than reducing the amount of methane released is not considered to be a system that produces energy.

(14) Lead-acid batteries.

(15) Waste oil and materials containing free-flowing waste oil. Materials contaminated with waste oil may be disposed of if no free-flowing oil is retained in the material, and the material is not a hazardous waste.

(16) Baled solid waste, unless the waste is baled on site after the waste has been visually inspected for prohibited materials.

c. Open burning and fire hazards. No open burning of any type shall be allowed within the permitted boundary of an MSWLF facility. The fueling of vehicles and equipment, and any other activity that may produce sparks or flame, shall be conducted at least 50 feet away from the working face.

d. Scavenging and salvaging. Scavenging shall not be allowed at the MSWLF facility. However, salvaging by MSWLF operators may be allowed.

e. Animal feeding and grazing. Feeding animals MSW shall not be allowed at an MSWLF facility. The grazing of domestic animals on fully vegetated areas of the MSWLF facility not used for disposal, including closed MSWLF units, may be allowed by the department so long as the animals do not cause damage or interfere with operations, inspections, environmental monitoring and other required activities. Large, hooved animals (including but not limited to buffalo, cattle, llamas, pigs, and horses) shall not be allowed on closed MSWLF units.

113.8(2) Disposal operations and activities. All MSWLFs shall comply with the following requirements.

a. Survey controls and monuments. Survey controls and monuments shall be maintained as follows.

(1) The property boundary, the permitted boundary and the boundaries of all MSWLF units shall be surveyed and marked by a professional land surveyor at least once prior to closure.

(2) Prior to waste placement, all new MSWLF unit boundaries shall be surveyed and marked by a professional engineer.

(3) Survey monuments shall be established to check vertical elevations and the progression of fill sequencing. The survey monuments shall be established and maintained by a professional land surveyor.

(4) All survey stakes and monuments shall be clearly marked.

(5) A professional engineer shall biennially inspect all survey monuments and replace missing or damaged survey monuments.

b. First lift. The first lift and initial placement of MSW over a new MSWLF unit liner and leachate collection system shall comply with the following requirements.

(1) Waste shall not be placed in the new MSWLF unit until the QC&A officer has submitted a signed and sealed final report to the department pursuant to paragraph 113.7(6) "d" and that report has been approved by the department.

(2) Construction and earth-moving equipment shall not operate directly on the liner and leachate management system. Waste disposal operations shall begin at the edge of the new MSWLF unit by pushing MSW out over the liner and leachate collection system. Compactors and other similarly heavy equipment shall not operate directly on the leachate collection system until a minimum of 4 feet of waste has been mounded over the top of the leachate collection system.

(3) Construction and demolition debris and materials clearly capable of spearing through the leachate collection system and liner shall not be placed in the first 4 feet of waste over the top of the leachate collection system. The first 4 feet of waste shall consist of select waste that is unlikely to damage the liner and performance of the leachate collection system.

(4) The owner or operator must place documentation in the operating record and submit a copy to the department that adequate cover material was placed over the top of the leachate collection system in the MSWLF unit or that freeze/thaw effects had no adverse impact on the compacted clay component of the liner.

c. Fill sequencing. The rate and phasing of disposal operations shall comply with the following requirements.

(1) The fill sequencing shall be planned and conducted in a manner and at a rate that do not cause a slope failure, lead to extreme differential settlement, or damage the liner and leachate collection system.

(2) The fill sequencing shall be planned and conducted in a manner compliant with the run-on and runoff requirements of subrule 113.7(8) and surface water requirements of rule 567—113.10(455B).

d. Working face. The working face shall comply with the following requirements.

(1) The working face shall be no larger than necessary to accommodate the rate of disposal in a safe and efficient manner.

(2) The working face shall not be so steep as to cause heavy equipment and solid waste collection vehicles to roll over or otherwise lose control.

(3) Litter control devices of sufficient size to help prevent blowing litter shall be utilized at the working face. The operation of the working face shall attempt to minimize blowing litter.

(4) The operation of the working face shall prevent the harborage of vectors and attempt to minimize the attraction of vectors.

(5) Employees at the working face shall be trained to visually recognize universal symbols, markings and indications of prohibited wastes pursuant to paragraph 113.8(1) “b.”

e. Special wastes. Special wastes shall be managed and disposed of pursuant to 567—Chapter 109.

f. Cover material and alternative cover material. Pursuant to 567—Chapter 108, alternative cover material of an alternative thickness (e.g., tarps, spray covers) may be authorized if the owner or operator demonstrates to the approval of the department that the alternative material and thickness control vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment. Cover material or alternative cover material shall be available for use during all seasons in all types of weather. Cover material and alternative cover material shall be utilized as follows unless otherwise approved by the department pursuant to 567—Chapter 108:

(1) Daily cover. Six inches of cover material or an approved depth or application of alternative cover material shall be placed and maintained over waste in the active portion at the end of each operating day, or at more frequent intervals if necessary, to control vectors, fires, odors, blowing litter, and scavenging.

(2) Intermediate cover. At least 1 foot of compacted cover material or an approved depth or application of alternative cover material shall be placed and maintained over waste in the active portion that has not or will not receive more waste for at least 30 days. At least 2 feet of compacted cover material or alternative cover material shall be placed and maintained over waste in the active portion that has not or will not receive waste for at least 180 days. Such active portions shall be graded to manage run-on and runoff pursuant to subrule 113.7(8). Such active portions shall be seeded if they will not receive waste for a full growing season.

(3) Scarification of cover. To help prevent leachate seeps by aiding the downward flow of leachate, cover material or alternative cover material, which prevents the downward flow of leachate and is at least 5 feet from the outer edge of the MSWLF unit, shall be scarified prior to use of that area as a working face. Cover material or alternative cover material that does not impede the downward flow of leachate, as approved by the department, does not require scarification. Scarification may be as simple as the spearing or breaking up of a small area of the cover. Areas of intermediate cover may require removal of some of the cover material or alternative cover material to aid the downward flow of leachate.

(4) Final cover. Final cover over an MSWLF unit that is to be closed shall be constructed and maintained according to the closure and postclosure requirements of rules 567—113.12(455B) and 567—113.13(455B).

g. Leachate seeps. Leachate seeps shall be contained and plugged upon being identified. Leachate seeps shall not be allowed to reach waters of the state. Soils outside of the MSWLF unit that are contaminated by a leachate seep shall be excavated and then disposed of within the MSWLF unit. Such soils may be used for daily cover material.

h. Leachate recirculation. The department must approve an MSWLF unit for leachate recirculation. The primary goal of the leachate recirculation system is to help stabilize the waste in a more rapid, but controlled, manner. The leachate recirculation system shall not contaminate waters of the state, contribute to erosion, damage cover material, harm vegetation, or spray persons at the MSWLF facility. Leachate recirculation shall be limited to MSWLF units constructed with a composite liner.

i. *Differential settlement.* Areas of differential settlement sufficient to interfere with runoff and run-on shall be brought back up to the contours of the surrounding active portion. Differential settlement shall not be allowed to cause ponding of water on the active portion.

113.8(3) Facility operations and activities. All MSWLFs shall comply with the following requirements.

a. *Controlled access.* Owners or operators of all MSWLF units must control public access and prevent unauthorized vehicular traffic and illegal dumping of wastes by using artificial barriers, natural barriers, or both, as appropriate to protect human health and the environment.

b. *Scales and weights.* A scale certified by the Iowa department of agriculture and land stewardship shall weigh all solid waste collection vehicles and solid waste transport vehicles. The owner or operator shall maintain a record of the weight of waste disposed of.

c. *All-weather access to disposal.* A disposal area shall be accessible during all weather conditions.

d. *Salvaged and processed materials.* Salvaged and processed materials (e.g., scrap metal, compost, mulch, aggregate, tire chips) shall be managed and stored in an orderly manner that does not create a nuisance or encourage the attraction or harborage of vectors.

e. *Vector control.* Owners or operators must prevent or control the on-site populations of vectors using techniques appropriate for the protection of human health and the environment.

f. *Litter control.* The operator shall take steps to minimize the production of litter and the release of windblown litter off site of the facility. All windblown litter off site of the facility shall be collected daily unless prevented by unsafe working conditions. On-site litter shall be collected daily unless prevented by working conditions. A dated record of unsafe conditions that prevented litter collection activities shall be maintained by the facility.

g. *Dust.* The operator shall take steps to minimize the production of dust so that unsafe or nuisance conditions are prevented. Leachate shall not be used for dust control purposes.

h. *Mud.* The operator shall take steps to minimize the tracking of mud by vehicles exiting the facility so that slick or unsafe conditions are prevented.

i. *Leachate and wastewater treatment.* The leachate management system shall be managed and maintained pursuant to the requirements of paragraph 113.7(5)“b.” Leachate collection pipes shall be cleaned and inspected as necessary, but not less than once every three years. Leachate and wastewater shall be treated as necessary to meet the pretreatment limits, if any, imposed by an agreement between the MSWLF and a publicly owned wastewater treatment works (POTW) or by the effluent discharge limits established by an NPDES permit. Documentation of the POTW agreement or NPDES permit must be submitted to the department. All leachate and wastewater treatment systems shall conform to department wastewater design standards.

j. *Financial assurance.* Financial assurance shall be maintained pursuant to rule 567—113.14(455B).

113.8(4) Development and operations plan (DOPs). An MSWLF unit shall maintain a development and operations plan (DOPs). At a minimum, the DOPs shall detail how the facility will operate and how compliance with the requirements of rule 567—113.8(455B) will be maintained. The DOPs shall contain at least the following components.

a. A title page and table of contents.

b. Telephone number of the official responsible for the operation of the facility and an emergency contact person if different.

c. Service area of the facility and political jurisdictions included in that area.

d. Days and hours of operation of the facility.

e. Details of how the site will comply with the prohibited operations and activity requirements of subrule 113.8(1) and any related permit conditions.

f. Details of how the site will comply with the disposal operation and activity requirements of subrule 113.8(2) and any related permit conditions.

g. Details of how the site will comply with the facility operations and activity requirements of subrule 113.8(3), any related permit conditions, and any leachate and wastewater treatment requirements.

113.8(5) Emergency response and remedial action plan (ERRAP). All MSWLFs shall develop, submit to the department for approval, and maintain on site an ERRAP.

a. ERRAP submittal requirements. An updated ERRAP shall be submitted to the department with any permit modification or renewal request that incorporates facility changes that impact the ERRAP.

b. Content. The ERRAP is intended to be a quick reference during an emergency. The content of the ERRAP shall be concise and readily usable as a reference manual by facility managers and operators during emergency conditions. The ERRAP shall contain and address at least the following components, unless facility conditions render the specific issue as not applicable. To facilitate department review, the rationale for exclusion of any issues that are not applicable must be provided either in the body of the plan or as a supplement. Additional ERRAP requirements unique to the facility shall be addressed as applicable.

- (1) Facility information.
 1. Permitted agency.
 2. DNR permit number.
 3. Responsible official and contact information.
 4. Certified operator and contact information.
 5. Facility description.
 6. Site and environs map.
- (2) Regulatory requirements.
 1. Iowa Code section 455B.306(6) “d” criteria citation.
 2. Reference to provisions of the permit.
- (3) Emergency conditions, response activities and remedial action.
 1. Failure of utilities.
 - Short-term (48 hours or less).
 - Long-term (over 48 hours).
 2. Evacuation procedures during emergency conditions.
 3. Weather-related events.
 - Tornado and wind events.
 - Snow and ice.
 - Intense rainstorms, mud, and erosion.
 - Lightning strikes.
 - Flooding.
 - Event and postevent conditions.
 4. Fire and explosions.
 - Waste materials.
 - Buildings and site.
 - Equipment.
 - Fuels.
 - Utilities.
 - Facilities.
 - Working area.
 - Hot loads.
 - Waste gases.
 - Explosive devices.
 5. Regulated waste spills and releases.
 - Waste materials.
 - Leachate.
 - Waste gases.
 - Waste stockpiles and storage facilities.
 - Waste transport systems.
 - Litter and airborne particulate.
 - Site drainage system.
 - Off-site releases.
 6. Hazardous material spills and releases.
 - Load-check control points.

- Mixed waste deliveries.
- Fuels.
- Waste gases.
- Site drainage systems.
- Off-site releases.
- 7. Mass movement of land and waste.
 - Earthquakes.
 - Slope failure.
 - Waste shifts.
 - Waste subsidence.
- 8. Emergency and release notification and reporting.
 - Federal agencies.
 - State agencies.
 - County and city agencies including emergency management services.
 - News media.
 - Public and private facilities with special populations within five miles.
 - Reporting requirements and forms.
- 9. Emergency waste management procedures.
 - Communications.
 - Temporary discontinuation of services—short-term and long-term.
 - Facilities access and rerouting.
 - Waste acceptance.
 - Wastes in process.
- 10. Primary emergency equipment inventory.
 - Major equipment.
 - Fire hydrants and water sources.
 - Off-site equipment resources.
- 11. Emergency aid.
 - Responder contacts.
 - Medical services.
 - Contracts and agreements.
- 12. ERRAP training requirements.
 - Training providers.
 - Employee orientation.
 - Annual training updates.
 - Training completion and record keeping.
- 13. Reference tables, figures and maps.

113.8(6) MSWLF operator certification. Sanitary landfill operators shall be trained, tested, and certified by a department-approved certification program.

a. A sanitary landfill operator shall be on duty during all hours of operation of a sanitary landfill, consistent with the respective certification.

b. To become a certified operator, an individual shall complete a basic operator training course that has been approved by the department or an alternative, equivalent training approved by the department and shall pass a departmental examination as specified by this subrule. An operator certified by another state may have reciprocity subject to approval by the department.

c. A sanitary landfill operator certification is valid until June 30 of the following even-numbered year.

d. The required basic operator training course for a certified sanitary landfill operator shall have at least 25 contact hours and shall address the following areas, at a minimum:

- (1) Description of types of wastes.
- (2) Interpreting and using engineering plans.
- (3) Construction surveying techniques.

- (4) Waste decomposition processes.
- (5) Geology and hydrology.
- (6) Landfill design.
- (7) Landfill operation.
- (8) Environmental monitoring.
- (9) Applicable laws and regulations.
- (10) Permitting processes.
- (11) Leachate control and treatment.

e. Alternate basic operator training must be approved by the department. The applicant shall be responsible for submitting any documentation the department may require to evaluate the equivalency of alternate training.

f. Fees.

- (1) The examination fee for each examination is \$20.
- (2) The initial certification fee is \$8 for each one-half year of a two-year period from the date of issuance to June 30 of the next even-numbered year.
- (3) The certification renewal is \$24.
- (4) The penalty fee is \$12.

g. Examinations.

(1) The operator certification examinations shall be based on the basic operator training course curriculum.

(2) All individuals wishing to take the examination required to become a certified operator of a sanitary landfill shall complete the Operator Certification Examination Application, Form 542-1354. A listing of dates and locations of examinations is available from the department upon request. The application form requires the applicant to indicate the basic operator training course taken. Evidence of training course completion must be submitted with the application for certification. The completed application and the application fee shall be sent to the department and addressed to the central office in Des Moines. Application for examination must be received by the department at least 30 days prior to the date of examination.

(3) A properly completed application for examination shall be valid for one year from the date the application is approved by the department.

(4) Upon failure of the first examination, the applicant may be reexamined at the next scheduled examination. Upon failure of the second examination, the applicant shall be required to wait a period of 180 days between each subsequent examination.

(5) Upon each reexamination when a valid application is on file, the applicant shall submit to the department the examination fee at least ten days prior to the date of examination.

(6) Failure to successfully complete the examination within one year from the date of approval of the application shall invalidate the application.

(7) Completed examinations will be retained by the department for a period of one year after which they will be destroyed.

(8) Oral examinations may be given at the discretion of the department.

h. Certification.

(1) All operators who passed the operator certification examination by July 1, 1991, are exempt from taking the required operator training course. Beginning July 1, 1991, all operators are required to take the basic operator training course and pass the examination in order to become certified.

(2) Application for certification must be received by the department within 30 days of the date the applicant receives notification of successful completion of the examination. All applications for certification shall be made on a form provided by the department and shall be accompanied by the certification fee.

(3) Applications for certification by examination which are received more than 30 days but less than 60 days after notification of successful completion of the examination shall be accompanied by the certification fee and the penalty fee. Applicants who do not apply for certification within 60 days of notice of successful completion of the examination will not be certified on the basis of that examination.

(4) For applicants who have been certified under other state mandatory certification programs, the equivalency of which has been previously reviewed and accepted by the department, certification without examination will be recommended.

(5) For applicants who have been certified under voluntary certification programs in other states, certification will be considered. The applicant must have successfully completed a basic operator training course and an examination generally equivalent to the Iowa examination. The department may require the applicant to successfully complete the Iowa examination.

(6) Applicants who seek Iowa certification pursuant to subparagraphs 113.8(6)“h”(4) and (5) shall submit an application for examination accompanied by a letter requesting certification pursuant to those subparagraphs. Application for certification pursuant to those subparagraphs shall be received by the department in accordance with subparagraphs 113.8(6)“h”(2) and (3).

i. Renewals. All certificates shall expire every two years, on even-numbered years, and must be renewed every two years to maintain certification. Application and fee are due prior to expiration of certification.

(1) Late application for renewal of a certificate may be made, provided that such late application shall be received by the department or postmarked within 30 days of the expiration of the certificate. Such late application shall be on forms provided by the department and accompanied by the penalty fee and the certification renewal fee.

(2) If a certificate holder fails to apply for renewal within 30 days following expiration of the certificate, the right to renew the certificate automatically terminates. Certification may be allowed at any time following such termination, provided that the applicant successfully completes an examination. The applicant must then apply for certification in accordance with paragraph 113.8(6)“h.”

(3) An operator shall not continue to operate a sanitary landfill after expiration of a certificate without renewal thereof.

(4) Continuing education must be earned during the two-year certification period. All certified operators must earn ten contact hours per certificate during each two-year period. The two-year period will begin upon issuance of certification.

(5) Only those operators fulfilling the continuing education requirements before the end of each two-year period will be allowed to renew their certificates. The certificates of operators not fulfilling the continuing education requirements shall be void upon expiration, unless an extension is granted.

(6) All activities for which continuing education credit will be granted must be related to the subject matter of the particular certificate to which the credit is being applied.

(7) The department may, in individual cases involving hardship or extenuating circumstances, grant an extension of time of up to three months within which the applicant may fulfill the minimum continuing education requirements. Hardship or extenuating circumstances include documented health-related confinement or other circumstances beyond the control of the certified operator which prevent attendance at the required activities. All requests for extensions must be made 60 days prior to expiration of certification.

(8) The certified operator is responsible for notifying the department of the continuing education credits earned during the period. The continuing education credits earned during the period shall be shown on the application for renewal.

(9) A certified operator shall be deemed to have complied with the continuing education requirements of this subrule during periods that the operator serves honorably on active duty in the military service; or for periods that the operator is a resident of another state or district having a continuing education requirement for operators and meets all the requirements of that state or district for practice there; or for periods that the person is a government employee working as an operator and is assigned to duty outside the United States; or for other periods of active practice and absence from the state approved by the department.

j. Discipline of certified operators.

(1) Disciplinary action may be taken on any of the following grounds:

1. Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified operator. Duties of certified operators include compliance with rules and permit conditions applicable to landfill operation.

2. Failure to submit required records of operation or other reports required under applicable permits or rules of the department, including failure to submit complete records or reports.

3. Knowingly making any false statement, representation, or certification on any application, record, report or document required to be maintained or submitted under any applicable permit or rule of the department.

- (2) Disciplinary sanctions allowable are:

1. Revocation of a certificate.

2. Probation under specified conditions relevant to the specific grounds for disciplinary action. Additional education or training or reexamination may be required as a condition of probation.

- (3) The procedure for discipline is as follows:

1. The department shall initiate disciplinary action. The commission may direct that the department investigate any alleged factual situation that may be grounds for disciplinary action under subparagraph 113.8(6)“j”(1) and report the results of the investigation to the commission.

2. A disciplinary action may be prosecuted by the department.

3. Written notice shall be given to an operator against whom disciplinary action is being considered. The notice shall state the informal and formal procedures available for determining the matter. The operator shall be given 20 days to present any relevant facts and indicate the operator’s position in the matter and to indicate whether informal resolution of the matter may be reached.

4. An operator who receives notice shall communicate verbally, in writing, or in person with the department, and efforts shall be made to clarify the respective positions of the operator and department.

5. The applicant’s failure to communicate facts and positions relevant to the matter by the required date may be considered when determining appropriate disciplinary action.

6. If agreement as to appropriate disciplinary sanction, if any, can be reached with the operator and the commission concurs, a written stipulation and settlement between the department and the operator shall be entered into. The stipulation and settlement shall recite the basic facts and violations alleged, any facts brought forth by the operator, and the reasons for the particular sanctions imposed.

7. If an agreement as to appropriate disciplinary action, if any, cannot be reached, the department may initiate formal hearing procedures. Notice and formal hearing shall be in accordance with 567—Chapter 7 related to contested and certain other cases pertaining to license discipline.

- k. Revocation of certificates. Upon revocation of a certificate, application for certification may be allowed after two years from the date of revocation. Any such applicant must successfully complete an examination and be certified in the same manner as a new applicant.

- l. Temporary certification. A temporary operator of a sanitary landfill may be designated for a period of six months when an existing certified operator is no longer available to the facility. The facility must make application to the department, explain why a temporary certification is needed, identify the temporary operator, and identify the efforts which will be made to obtain a certified operator. A temporary operator designation shall not be approved for greater than a six-month period except for extenuating circumstances. In any event, not more than one six-month extension to the temporary operator designation may be granted. Approval of a temporary operator designation may be rescinded for cause as set forth in paragraph 113.8(6)“j.” All MSWLFs shall have at least one MSWLF operator trained, tested and certified by a department-approved program.

[ARC 2692C, IAB 8/31/16, effective 10/5/16]

567—113.9(455B) Environmental monitoring and corrective action requirements for air quality and landfill gas. All MSWLFs shall comply with the following environmental monitoring and corrective action requirements for air quality and landfill gas.

113.9(1) Air criteria. Owners or operators of all MSWLFs must ensure that the units do not violate any applicable requirements developed under a state implementation plan (SIP) approved or promulgated by the department pursuant to Section 110 of the Clean Air Act.

113.9(2) *Landfill gas.* All MSWLFs shall comply with the following requirements for landfill gas. For purposes of this subrule, “lower explosive limit” means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25°C and atmospheric pressure.

a. Owners or operators of all MSWLF units must ensure that:

(1) The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas pipeline, control or recovery system components);

(2) The concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary; and

b. Owners or operators of all MSWLF units must implement a routine methane-monitoring program to ensure that the standards of paragraph 113.9(2)“*a*” are met. Such a program shall include routine subsurface methane monitoring (e.g., at select groundwater wells, at gas monitoring wells).

(1) The type and frequency of monitoring must be determined based on the following factors:

1. Soil conditions;

2. The hydrogeologic conditions surrounding the facility;

3. The hydraulic conditions surrounding the facility;

4. The location of facility structures (including potential subsurface preferential pathways such as, but not limited to, pipes, utility conduits, drain tiles and sewers) and property boundaries; and

5. The locations of structures near the outside of the facility to which or along which subsurface migration of methane gas may occur. Examples of such structures include, but are not limited to, houses, buildings, basements, crawl spaces, pipes, utility conduits, drain tiles and sewers.

(2) The minimum frequency of monitoring shall be quarterly.

c. If methane gas levels exceeding the limits specified in paragraph 113.9(2)“*a*” are detected, the owner or operator must:

(1) Immediately take all necessary steps to ensure protection of human health and notify the department and department field office with jurisdiction over the MSWLF;

(2) Within 7 days of detection, place in the operating record and notify the department and department field office with jurisdiction over the MSWLF of the methane gas levels detected and a description of the steps taken to protect human health; and

(3) Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the department and department field office with jurisdiction over the MSWLF that the plan has been implemented. The plan shall describe the nature and extent of the problem and the proposed remedy.

d. The owner or operator shall submit an annual report to the department detailing the gas monitoring sampling locations and results, any action taken, and the results of steps taken to address gas levels exceeding the limits of paragraph 113.9(2)“*a*” during the previous year. This report shall include a site map that delineates all structures, perimeter boundary locations, and other monitoring points where gas readings were taken. The site map shall also delineate areas of landfill gas migration outside the MSWLF units, if any. The report shall contain a narrative explaining and interpreting all of the data collected during the previous year. The report shall be due each year at a date specified by the department in the facility’s permit.

567—113.10(455B) Environmental monitoring and corrective action requirements for groundwater and surface water. All MSWLFs shall comply with the following environmental monitoring and corrective action requirements for groundwater and surface water.

113.10(1) *General requirements for environmental monitoring and corrective action for groundwater and surface water.* The following general requirements apply to all provisions of this rule.

a. Surface water requirements. MSWLF units shall not:

(1) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402 of the Clean Water Act.

(2) Cause the discharge of a nonpoint source of pollution into waters of the United States, including wetlands, that violates any requirement of an areawide or statewide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act.

b. A new MSWLF unit must be in compliance with the groundwater monitoring requirements specified in subrules 113.10(2), 113.10(4), 113.10(5) and 113.10(6) before waste can be placed in the unit.

c. Once established at an MSWLF unit, groundwater monitoring shall be conducted throughout the active life and postclosure care period of that MSWLF unit as specified in rule 567—113.13(455B).

d. For the purposes of this rule, a “qualified groundwater scientist” means a scientist or an engineer who has received a baccalaureate or postgraduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields demonstrated by state registration, professional certifications, or completion of accredited university programs that enable that individual to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective action.

e. The department may establish alternative schedules for demonstrating compliance with:

(1) Subparagraph 113.10(2) “e” (3), pertaining to notification of placement of certification in operating record;

(2) Subparagraph 113.10(5) “c” (1), pertaining to notification that statistically significant increase (SSI) notice is in operating record;

(3) Subparagraphs 113.10(5) “c” (2) and (3), pertaining to an assessment monitoring program;

(4) Paragraph 113.10(6) “b,” pertaining to sampling and analyzing Appendix II constituents;

(5) Subparagraph 113.10(6) “d” (1), pertaining to placement of notice (Appendix II constituents detected) in record and notification of placement of notice in record;

(6) Subparagraph 113.10(6) “d” (2), pertaining to sampling for Appendices I and II;

(7) Paragraph 113.10(6) “g,” pertaining to notification (and placement of notice in record) of SSI above groundwater protection standard;

(8) Numbered paragraph 113.10(6) “g” (1) “4” and paragraph 113.10(7) “a,” pertaining to assessment of corrective measures;

(9) Paragraph 113.10(8) “a,” pertaining to selection of remedy and notification of placement in record;

(10) Paragraph 113.10(9) “f,” pertaining to notification of placement in record (certification of remedy completed).

113.10(2) Groundwater monitoring systems. All MSWLFs shall have a groundwater monitoring system that complies with the following requirements:

a. A groundwater monitoring system must be installed that meets the following objectives:

(1) Yields groundwater samples from the uppermost aquifer that represent the quality of background groundwater that has not been affected by leakage from a unit. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where either:

1. Hydrogeologic conditions do not allow the owner or operator to determine which wells are hydraulically upgradient; or

2. Sampling at other wells will provide an indication of background groundwater quality that is as representative as or more representative than that provided by the upgradient wells.

(2) Yields groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the relevant point of compliance specified by the department under numbered paragraph 113.7(5) “a” (2) “2.” The downgradient monitoring system must be installed at the relevant point of compliance specified by the department under numbered paragraph 113.7(5) “a” (2) “2” that ensures detection of groundwater contamination in the uppermost aquifer. When physical obstacles preclude installation of groundwater monitoring wells at the relevant point of compliance at existing units, the downgradient monitoring system may be installed at the closest practicable distance, hydraulically downgradient from the relevant point of compliance specified by the department under numbered paragraph 113.7(5) “a” (2) “2,” that ensures detection of groundwater contamination in the uppermost aquifer.

(3) Provides a high level of certainty that releases of contaminants from the site can be promptly detected. Downgradient monitoring wells shall be placed along the site perimeter, within 50 feet of the planned liner or waste boundary unless site conditions dictate otherwise, downgradient of the facility with

respect to the hydrologic unit being monitored. Each groundwater underdrain system shall be included in the groundwater detection monitoring program under subrule 113.10(5). The maximum drainage area routed through each outfall shall not exceed 10 acres unless it can be demonstrated that site-specific factors such as drain flow capacity or site development sequencing require an alternative drainage area. If contamination is identified in the groundwater underdrain system pursuant to subrule 113.10(5), the owner or operator shall manage the underdrain discharge as leachate in lieu of assessment monitoring and corrective action.

(4) Be designed and constructed with the theoretical release evaluation pursuant to subparagraph 113.6(3)“e”(6) taken into consideration.

b. For those facilities which are long-term, multiphase operations, the department may establish temporary waste boundaries in order to define locations for monitoring wells. The convergence of groundwater paths to minimize the overall length of the downgradient dimension may be taken into consideration in the placement of downgradient monitoring wells provided that the multiphase unit groundwater monitoring system meets the requirements of paragraphs 113.10(2)“a,” 113.10(2)“c,” 113.10(2)“d” and 113.10(2)“e” and will be as protective of human health and the environment as the individual monitoring systems for each MSWLF unit, based on the following factors:

- (1) Number, spacing, and orientation of the MSWLF units;
- (2) Hydrogeologic setting;
- (3) Site history;
- (4) Engineering design of the MSWLF units; and
- (5) Type of waste accepted at the MSWLF units.

c. Monitoring wells must be constructed and cased by a well contractor certified pursuant to 567—Chapter 82 in a manner that maintains the integrity of the monitoring well borehole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the borehole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the groundwater. Monitoring wells constructed in accordance with the rules in effect at the time of construction shall not be required to be abandoned and reconstructed as a result of subsequent amendments to these rules unless the department finds that the well is no longer providing representative groundwater samples. See Figure 1 for a general diagram of a properly constructed monitoring well.

(1) The owner or operator must notify the department that the design, installation, development, and decommission of any monitoring wells, piezometers and other measurement, sampling, and analytical devices documentation has been placed in the operating record.

(2) The monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program.

(3) Each groundwater monitoring point must have a unique and permanent number, and that number must never change or be used again at the MSWLF. The types of groundwater monitoring points shall be identified as follows:

1. Monitoring wells by “MW# (Insert unique and permanent number)”.
2. Piezometers by “PZ# (Insert unique and permanent number)”.
3. Groundwater underdrain systems by “GU# (Insert unique and permanent number)”.

(4) Monitoring well construction shall be performed by a certified well contractor (pursuant to 567—Chapter 82) and shall comply with the following requirements:

1. In all phases of drilling, well installation and completion, the methods and materials used shall not introduce substances or contaminants that may alter the results of water quality analyses.

2. Drilling equipment that comes into contact with contaminants in the borehole or aboveground shall be thoroughly cleaned to avoid spreading contamination to other depths or locations. Contaminated materials or leachate from wells must not be discharged onto the ground surface or into waters of the state so as to cause harm in the process of drilling or well development.

3. The owner or operator must ensure that, at a minimum, the well design and construction log information is maintained in the facility's permanent record using DNR Form 542-1277 and that a copy is sent to the department.

(5) Monitoring well casings shall comply with the following requirements:

1. The diameter of the inner well casing (see Figure 1) of a monitoring well shall be at least 2 inches.
2. Plastic-cased wells shall be constructed of materials with threaded and nonglued joints that do not allow water infiltration under the local subsurface pressure conditions and when the well is evacuated for sampling.

3. Well casing shall provide sufficient structural stability so that a borehole or well collapse does not occur. Flush joint casing is required for small diameter wells installed through hollow stem augers.

(6) Monitoring well screens shall comply with the following requirements:

1. Slot size shall be based on sieve analysis of the sand and gravel stratum or filter pack. The slot size must keep out at least 90 percent of the filter pack.
2. Slot configuration and open area must permit effective development of the well.
3. The screen shall be no longer than 10 feet in length, except for water table wells, in which case the screen shall be of sufficient length to accommodate normal seasonal fluctuations of the water table. The screen shall be placed 5 feet above and below the observed water table, unless local conditions are known to produce greater fluctuations. Screen length for piezometers shall be 2 feet or less. Multiple-screened, single-cased wells are prohibited.

(7) Monitoring well filter packs shall comply with the following requirements:

1. The filter pack shall extend at least 18 inches above and 12 inches below the well screen.
2. The size of the filter pack material shall be based on sieve analysis when sand and gravel are screened. The filter pack material must be 2.5 to 3 times larger than the 50 percent grain size of the zone being monitored.

3. In stratum that is neither sand nor gravel, the size of the filter pack material shall be selected based on the particle size of the zone being monitored.

(8) Monitoring well annular space shall comply with the following requirements:

1. Grouting materials must be installed from the top of the filter pack up in one continuous operation with a tremie tube.
2. The annular space between the filter pack and the frostline must be backfilled with bentonite grout.
3. The remaining annular space between the protective casing and the monitoring well casing must be sealed with bentonite grout from the frostline to the ground surface.

(9) Monitoring well heads shall be protected as follows:

1. Monitoring wells shall have a protective metal casing installed around the upper portion of the monitoring well casing as follows:

- The inside diameter of the protective metal casing shall be at least 2 inches larger than the outer diameter of the monitoring well casing.

- The protective metal casing shall extend from a minimum of 1 foot below the frostline to slightly above the well casing top; however, the protective casing shall be shortened if such a depth would cover a portion of the well screen.

- The protective casing shall be sealed and immobilized with a concrete plug around the outside. The bottom of the concrete plug must extend at least 1 foot below the frostline; however, the concrete plug shall be shortened if such a depth would cover a portion of the well screen. The top of the concrete plug shall extend at least 3 inches above the ground surface and slope away from the well. Soil may be placed above the plug and shall be at least 6 inches below the cap to improve runoff.

- The inside of the protective casing shall be sealed with bentonite grout from the frostline to the ground surface.

- A vented cap shall be placed on the monitoring well casing.

- A vented, locking cap shall be placed on the protective metal casing. The cap must be kept locked when the well is not being sampled.

2. All monitoring wells shall have a ring of brightly colored protective posts or other protective barriers to help prevent accidental damage.

3. All monitoring wells shall have a sign or permanent marking clearly identifying the permanent monitoring well number (MW#).

4. Run-on shall be directed away from all monitoring wells.

(10) Well development is required prior to the use of the monitoring well for water quality monitoring purposes. Well development must loosen and remove fines from the well screen and gravel pack. Any water utilized to stimulate well development must be of sufficient quality that future samples are not contaminated. Any gases utilized in well development must be inert gases that will not contaminate future samples. Following development, the well shall be pumped until the water does not contain significant amounts of suspended solids.

d. Groundwater monitoring points that are no longer functional must be sealed. Groundwater monitoring points that are to be sealed and are in a future waste disposal area shall be reviewed to determine if the method utilized to seal the monitoring point needs to be more protective than the following requirements. All abandoned groundwater-monitoring points (e.g., boreholes, monitoring wells, and piezometers) shall be sealed by a well contractor certified pursuant to 567—Chapter 82 and in accordance with the following requirements.

(1) The following information shall be placed in the operating record and a copy sent to the department:

1. The unique, permanent monitoring point number.
2. The reasons for abandoning the monitoring point.
3. The date and time the monitoring point was sealed.
4. The method utilized to remove monitoring point materials.
5. The method utilized to seal the monitoring point.
6. Department Form 542-1226 for Water Well Abandonment Plugging Record.

(2) The monitoring point materials (e.g., protective casing, casing, screen) shall be removed. If drilling is utilized to remove the materials, then the drilling shall be to the maximum depth of the previously drilled monitoring point. All drilling debris shall be cleaned from the interior of the borehole.

(3) The cleared borehole shall be sealed with impermeable bentonite grout via a tremie tube. The end of the tremie tube shall be submerged in the grout while filling from the bottom of the borehole to the top of the ground surface. Uncontaminated water shall be added from the surface as needed to aid grout expansion.

(4) After 24 hours, the bentonite grout shall be retopped if it has settled below the ground surface.

e. Hydrologic monitoring system plan (HMSP). Unless otherwise approved by the department in writing, the number, spacing, and depth of groundwater monitoring points shall be:

(1) Determined based upon site-specific technical information, including but not limited to the soil and hydrogeologic investigation pursuant to subrule 113.6(3) and the site exploration and characterization report pursuant to subrule 113.6(4), that must include thorough characterization of:

1. Aquifer thickness, groundwater flow rate, and groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and

2. Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including, but not limited to: thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities; and

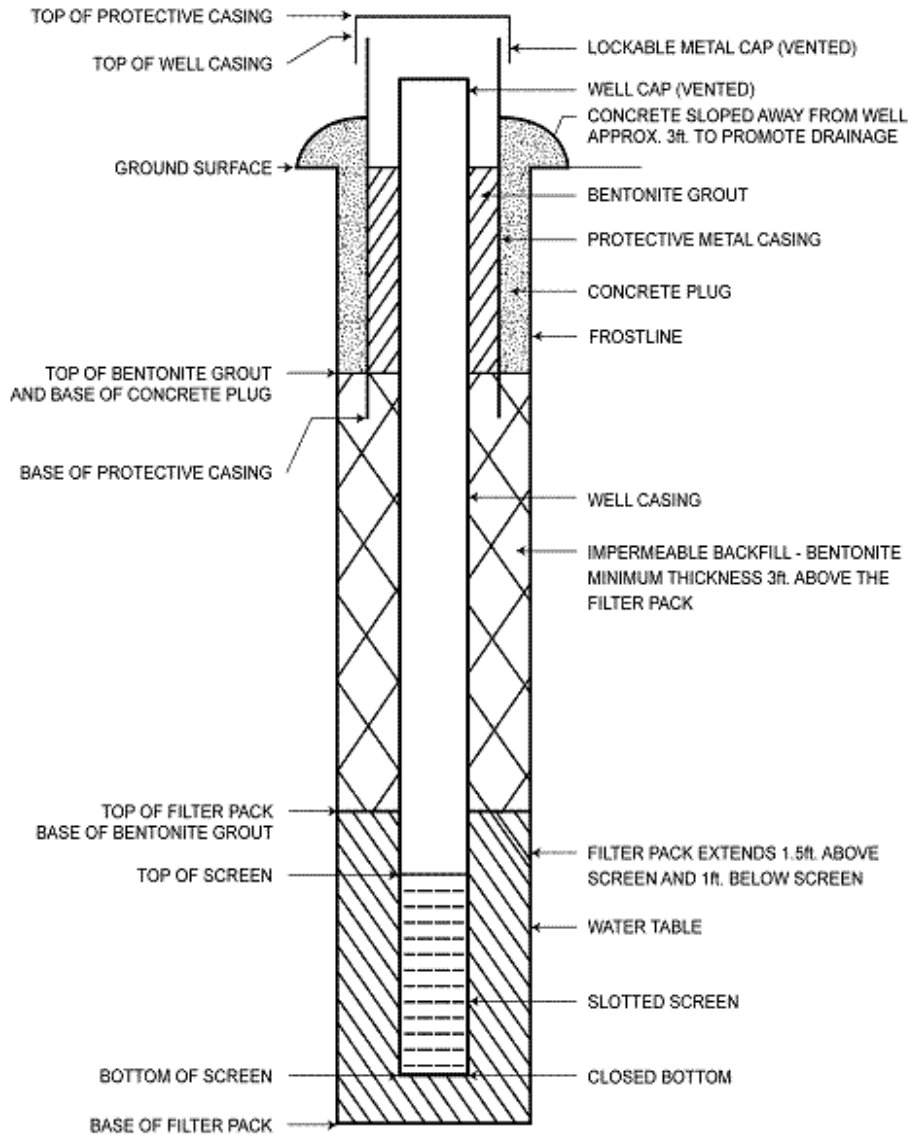
3. Projected paths and rates of movement of contaminants found in leachate pursuant to subparagraph 113.6(3)“e”(6).

(2) Designed and constructed with a maximum of 300 feet between downgradient groundwater monitoring wells, unless it is demonstrated by site-specific analysis or modeling that an alternative well spacing is justified. The convergence of groundwater paths to minimize the overall length of the downgradient dimension may be taken into consideration in the placement of downgradient monitoring wells provided that the groundwater monitoring system meets the requirements of paragraphs 113.10(2)“a,” 113.10(2)“c,” 113.10(2)“d,” and 113.10(2)“e.”

(3) Certified by a qualified groundwater scientist, as defined in paragraph 113.10(1)“d,” and approved by the department. Within 14 days of this certification and approval by the department, the owner or operator must notify the department that the certification has been placed in the operating record.

Figure 1

Typical Monitoring Well Cross Section



-- NOT TO SCALE --

f. Monitoring well maintenance and performance reevaluation plan. A monitoring well maintenance and performance reevaluation plan shall be included as part of the hydrologic monitoring system plan. The plan shall ensure that all monitoring points remain reliable. The plan shall provide for the following:

(1) A biennial examination of high and low water levels accompanied by a discussion of the acceptability of well location (vertically and horizontally) and exposure of the screened interval to the atmosphere.

(2) A biennial evaluation of water level conditions in the monitoring wells to ensure that the effects of waste disposal or well operation have not resulted in changes in the hydrologic setting and resultant flow paths.

(3) Measurements of well depths to ensure that wells are physically intact and not filling with sediment. Measurements shall be taken annually in wells which do not contain dedicated sampling pumps and every five years in wells containing dedicated sampling pumps.

(4) A biennial evaluation of well recharge rates and chemistry to determine if well deterioration is occurring.

113.10(3) *Surface water monitoring systems.* The department may require an MSWLF facility to implement a surface water monitoring program if there is reason to believe that a surface water of the state has been impacted as a result of facility operations (i.e., leachate seeps, sediment pond discharge) or a groundwater SSI over background has occurred.

a. A surface water monitoring program must be developed that consists of a sufficient number of monitoring points, designated at appropriate locations, to yield surface water samples that:

(1) Provide a representative sample of the upstream quality of a surface water of the state if the surface water being monitored is a flowing body of water.

(2) Provide a representative sample of the downstream quality of a surface water of the state if the surface water being monitored is a flowing body of water.

b. Surface water levels must be measured at a frequency specified in the facility's permit, within 1/10 of a foot at each surface water monitoring point immediately prior to sampling, each time surface water is sampled. The owner or operator must determine the rate and direction of surface water flow, if any, each time surface water is sampled. Surface water level and flow measurements for the same surface water of the state must be measured on the same day to avoid temporal variations that could preclude accurate determination of surface water flow and direction.

c. The owner or operator must notify and receive approval from the department for the designation or decommission of any surface water monitoring point, and must place that approval in the operating record.

d. The surface water monitoring points shall be designated to maintain sampling at that monitoring point throughout the life of the surface water monitoring program.

e. Each surface water monitoring point must have a unique and permanent number, and that number must never change or be used again at the MSWLF. Surface water monitoring points shall be identified by "SW# (Insert unique and permanent number)".

f. The number, spacing, and location of the surface water monitoring points shall be determined based upon site-specific technical information, including:

(1) Water level, including seasonal and temporal fluctuations in water level; and

(2) Flow rate and flow direction, including seasonal and temporal fluctuations in flow.

g. The MSWLF may discontinue the surface water monitoring program if monitoring data indicates that facility operations are not impacting surface water.

113.10(4) *Groundwater sampling and analysis requirements.*

a. The groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells installed in compliance with subrule 113.10(2). The groundwater monitoring program shall utilize a laboratory certified by the department. The owner or operator must notify the department that the sampling and analysis program documentation has been placed in the operating record, and the program must include procedures and techniques for:

(1) Sample collection;

(2) Sample preservation and shipment;

(3) Analytical procedures;

(4) Chain of custody control; and

(5) Quality assurance and quality control.

b. The groundwater monitoring programs must include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other

monitoring parameters in groundwater samples. Groundwater samples shall not be field-filtered prior to laboratory analysis.

c. The sampling procedures and frequency must be protective of human health and the environment, and consistent with subrule 113.10(5).

d. Groundwater elevations must be measured at a frequency specified in the facility's permit, within 1/100 of a foot in each well immediately prior to purging, each time groundwater is sampled. The owner or operator must determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same waste management area must be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

e. The owner or operator must establish background groundwater quality in a hydraulically upgradient or background well(s) for each of the monitoring parameters or constituents required in the particular groundwater monitoring program that applies to the MSWLF unit, as determined under paragraph 113.10(5) "a" or 113.10(6) "a." Background groundwater quality may be established at wells that are not located hydraulically upgradient from the MSWLF unit if the wells meet the requirements of subparagraph 113.10(2) "a"(1).

f. The number of samples collected to establish groundwater quality data must be consistent with the appropriate statistical procedures determined pursuant to paragraph 113.10(4) "g." The sampling procedures shall be those specified under paragraphs 113.10(5) "b" for detection monitoring, 113.10(6) "b" and 113.10(6) "d" for assessment monitoring, and 113.10(7) "b" for corrective action.

g. The owner or operator must specify in the operating record which of the following statistical methods will be used in evaluating groundwater monitoring data for each hazardous constituent. The statistical test chosen shall be conducted separately for each hazardous constituent in each well.

(1) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.

(2) An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.

(3) A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

(4) A control chart approach that gives control limits for each constituent.

(5) Another statistical test method that meets the performance standards of paragraph 113.10(4) "h." The owner or operator must place a justification for this alternative in the operating record and notify the department of the use of this alternative test. The justification must demonstrate that the alternative method meets the performance standards of paragraph 113.10(4) "h."

h. The statistical method required pursuant to paragraph 113.10(4) "g" shall comply with the following performance standards:

(1) The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data shall be transformed or a distribution-free theory test shall be used. If the distributions for the constituents differ, more than one statistical method may be needed.

(2) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level not less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experimentwise error rate for each testing period shall be not less than 0.05; however, the Type I error level of not less than 0.01 for individual well comparisons must be maintained.

(3) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined after the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern have been considered.

(4) If a tolerance interval or a predictional interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be protective of human health and the environment. These parameters shall be determined after the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern have been considered.

(5) The statistical method shall account for data below the limit of detection (LD) by recording such data at one-half the limit of detection (i.e., LD/2) or as prescribed by the statistical method. Any practical quantitation limit (pql) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

(6) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

i. The owner or operator must determine whether or not there is an SSI over background values for each parameter or constituent required in the particular groundwater monitoring program that applies to the MSWLF unit, as determined under paragraph 113.10(5) "a" or 113.10(6) "a."

(1) In determining whether an SSI has occurred, the owner or operator must compare the groundwater quality of each parameter or constituent at each monitoring well designated pursuant to subrule 113.10(2) to the background value of that constituent, according to the statistical procedures and performance standards specified under paragraphs 113.10(4) "g" and 113.10(4) "h."

(2) Within 45 days after completing sampling and analysis, the owner or operator must determine whether there has been an SSI over background at each monitoring well.

113.10(5) Detection monitoring program.

a. Detection monitoring is required at MSWLF units at all groundwater monitoring wells defined under subrule 113.10(2). At a minimum, a detection monitoring program must include the monitoring for the constituents listed in Appendix I and any additional parameters required by the department on a site-specific basis. An alternative list of constituents may be used if it can be demonstrated that the constituents removed are not reasonably expected to be in or derived from the waste contained in the unit and if the alternative list of constituents is expected to provide a reliable indication of leachate leakage or gas impact from the MSWLF unit.

(1) The department may establish an alternative list of inorganic indicator parameters for an MSWLF unit within Appendix I, in lieu of some or all of the heavy metals (constituents 1 to 15 in Appendix I), if the alternative parameters provide a reliable indication of inorganic releases from the MSWLF unit to the groundwater. In determining alternative parameters, the department shall consider the following factors:

1. The types, quantities and concentrations of constituents in wastes managed at the MSWLF unit;
2. The mobility, stability and persistence of waste constituents or their reaction products in the unsaturated zone beneath the MSWLF unit;
3. The detectability of indicator parameters, waste constituents and reaction products in the groundwater; and
4. The concentration or values and coefficients of variation of monitoring parameters or constituents in the groundwater background.

(2) Reserved.

b. The monitoring frequency for all constituents listed in Appendix I or in the alternative list approved in accordance with subparagraph 113.10(5) "a"(1) shall be at least semiannual (i.e., every six months) during the active life of the facility (including closure) and the postclosure period. Where insufficient background data exist, a minimum of five independent samples from each well, collected at intervals to account for seasonal and temporal variation, must be analyzed for the constituents in Appendix I or in the alternative list approved in accordance with subparagraph 113.10(5) "a"(1) during the first year.

At least one sample from each well must be collected and analyzed during subsequent semiannual sampling events. The department may specify an appropriate alternative frequency for repeated sampling and analysis for constituents in Appendix I or in the alternative list approved in accordance with subparagraph 113.10(5) "a"(1) during the active life (including closure) and the postclosure care period. The alternative frequency during the active life (including closure) shall be not less than annually. The alternative frequency shall be based on consideration of the following factors:

- (1) Lithology of the aquifer and unsaturated zone;
- (2) Hydraulic conductivity of the aquifer and unsaturated zone;
- (3) Groundwater flow rates;
- (4) Minimum distance between upgradient edge of the MSWLF unit and downgradient monitoring well screen (minimum distance of travel); and
- (5) Resource value of the aquifer.

c. If the owner or operator determines, pursuant to paragraph 113.10(4) "i," that there is an SSI over background for one or more of the constituents listed in Appendix I or in the alternative list approved in accordance with subparagraph 113.10(5) "a"(1) at any monitoring well specified under subrule 113.10(2), then the owner or operator:

(1) Must, within 14 days of this finding, place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels, and notify the department that this notice was placed in the operating record.

(2) Must establish within 90 days an assessment monitoring program meeting the requirements of subrule 113.10(6) except as provided in subparagraph 113.10(5) "c"(3).

(3) The owner or operator may demonstrate that a source other than an MSWLF unit caused the contamination or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a qualified groundwater scientist, approved by the department, and placed in the operating record. If resampling is a part of the demonstration, resampling procedures shall be specified prior to initial sampling. If a successful demonstration to the department is made and documented, the owner or operator may continue detection monitoring as specified in subrule 113.10(5). If, after 90 days, a successful demonstration is not made, the owner or operator must initiate an assessment monitoring program as required in subrule 113.10(6).

113.10(6) Assessment monitoring program.

a. Assessment monitoring is required whenever an SSI over background has been confirmed pursuant to paragraph 113.10(5) "c" to be the result of a release from the facility.

b. Within 90 days of triggering an assessment monitoring program, and annually thereafter, the owner or operator must sample and analyze the groundwater for all constituents identified in Appendix II. A minimum of one sample from each downgradient well shall be collected and analyzed during each sampling event. For any constituent detected in the downgradient wells as a result of the complete Appendix II analysis, a minimum of four independent samples from each well must be collected and analyzed to establish background for the constituents. The department may specify an appropriate subset of wells to be sampled and analyzed for Appendix II constituents during assessment monitoring. The department may delete any of the Appendix II monitoring parameters for an MSWLF unit if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the unit.

c. The department may specify an appropriate alternate frequency for repeated sampling and analysis for the full set of Appendix II constituents required by paragraph 113.10(6) "b" during the active life (including closure) and postclosure care period of the unit. The following factors shall be considered:

- (1) Lithology of the aquifer and unsaturated zone;
- (2) Hydraulic conductivity of the aquifer and unsaturated zone;
- (3) Groundwater flow rates;
- (4) Minimum distance between upgradient edge of the MSWLF unit and downgradient monitoring well screen (minimum distance of travel);
- (5) Resource value of the aquifer; and
- (6) Nature (fate and transport) of any constituents detected in response to this paragraph.

d. After obtaining the results from the initial or subsequent sampling events required in paragraph 113.10(6) “*b*,” the owner or operator must:

(1) Within 14 days, place a notice in the operating record identifying the Appendix II constituents that have been detected and notify the department that this notice has been placed in the operating record;

(2) Within 90 days, and on at least a semiannual basis thereafter, resample all wells specified by subrule 113.10(2) and conduct analyses for all constituents in Appendix I or in the alternative list approved in accordance with subparagraph 113.10(5) “*a*”(1), and for those constituents in Appendix II that are detected in response to the requirements of paragraph 113.10(6) “*b*.” Concentrations shall be recorded in the facility operating record. At least one sample from each well must be collected and analyzed during these sampling events. The department may specify an alternative monitoring frequency during the active life (including closure) and the postclosure period for the constituents referred to in this subparagraph. The alternative frequency for constituents in Appendix I or in the alternative list approved in accordance with subparagraph 113.10(5) “*a*”(1) during the active life (including closure) shall be no less than annual. The alternative frequency shall be based on consideration of the factors specified in paragraph 113.10(6) “*c*”;

(3) Establish background concentrations for any constituents detected pursuant to paragraph 113.10(6) “*b*” or subparagraph 113.10(6) “*d*”(2); and

(4) Establish groundwater protection standards for all constituents detected pursuant to paragraph 113.10(6) “*b*” or 113.10(6) “*d*.” The groundwater protection standards shall be established in accordance with paragraph 113.10(6) “*h*” or 113.10(6) “*i*.”

e. If the concentrations of all Appendix II constituents are shown to be at or below background values, using the statistical procedures in paragraph 113.10(4) “*g*” for two consecutive sampling events, the owner or operator must notify the department of this finding and may return to detection monitoring.

f. If the concentrations of any Appendix II constituents are above background values, but all concentrations are below the groundwater protection standard established under paragraph 113.10(6) “*h*” or 113.10(6) “*i*,” using the statistical procedures in paragraph 113.10(4) “*g*,” the owner or operator must continue assessment monitoring in accordance with this subrule.

g. If one or more Appendix II constituents are detected at statistically significant levels above the groundwater protection standard established under paragraph 113.10(6) “*h*” or 113.10(6) “*i*” in any sampling event, the owner or operator must, within 14 days of this finding, place a notice in the operating record identifying the Appendix II constituents that have exceeded the groundwater protection standard and notify the department and all other appropriate local government officials that the notice has been placed in the operating record. The owner or operator also:

(1) Must, within 90 days of this finding, comply with the following requirements or the requirements in subparagraph 113.10(6) “*g*”(2):

1. Characterize the nature and extent of the release by installing additional monitoring wells as necessary until the horizontal and vertical dimensions of the plume have been defined to background concentrations;

2. Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with subparagraph 113.10(6) “*g*”(2);

3. Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off site when indicated by sampling of wells in accordance with subparagraph 113.10(6) “*g*”(1); and

4. Initiate an assessment of corrective measures as required by subrule 113.10(7).

(2) May demonstrate that a source other than an MSWLF unit caused the contamination, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a qualified groundwater scientist, approved by the department, and placed in the operating record. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to subrule 113.10(6), and may return to detection monitoring if the Appendix II constituents are at or below background as specified in paragraph 113.10(6) “*e*.” Until a successful demonstration is made, the owner or operator must comply with paragraph 113.10(6) “*g*” including initiating an assessment of corrective measures.

h. The owner or operator must establish a groundwater protection standard for each Appendix II constituent detected in the groundwater. The groundwater protection standard shall be:

(1) For constituents for which a maximum contaminant level (MCL) has been promulgated under Section 1412 of the Safe Drinking Water Act (codified) under 40 CFR Part 141, the MCL for that constituent;

(2) For constituents for which MCLs have not been promulgated, the background concentration for the constituent established from wells in accordance with subrule 113.10(2); or

(3) For constituents for which the background concentration is higher than the MCL identified under subparagraph 113.10(6) “*h*” (1) or health-based concentrations identified under paragraph 113.10(6) “*i*,” the background concentration.

i. The department may establish an alternative groundwater protection standard for constituents for which MCLs have not been established. These groundwater protection standards shall be appropriate health-based concentrations that comply with the statewide standards for groundwater established pursuant to 567—Chapter 137.

j. In establishing alternative groundwater protection standards under paragraph 113.10(6) “*i*,” the department may consider the following:

(1) The policies set forth by the Groundwater Protection Act;

(2) Multiple contaminants in the groundwater with the assumption that the effects are additive regarding detrimental effects to human health and the environment;

(3) Exposure threats to sensitive environmental receptors; and

(4) Other site-specific exposure or potential exposure to groundwater.

113.10(7) *Assessment of corrective measures.*

a. Within 90 days of finding that any of the constituents listed in Appendix II have been detected at a statistically significant level exceeding the groundwater protection standards defined under paragraph 113.10(6) “*h*” or 113.10(6) “*i*,” the owner or operator must initiate an assessment of corrective measures. Such an assessment must be completed and submitted to the department for review and approval within 180 days of the initial finding unless otherwise authorized or required by the department.

b. The owner or operator must continue to monitor in accordance with the assessment monitoring program as specified in subrule 113.10(6).

c. The assessment shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under subrule 113.10(8), addressing at least the following:

(1) The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;

(2) The time required to begin and complete the remedy;

(3) The costs of remedy implementation; and

(4) The institutional requirements such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(ies).

d. Within 60 days of approval from the department of the assessment of corrective measures, the owner or operator must discuss the results of the corrective measures assessment, prior to the selection of a remedy, in a public meeting with interested and affected parties. The department may establish an alternative schedule for completing the public meeting requirement. Notice of public meeting shall be sent to all owners and occupiers of property adjacent to the permitted boundary of the facility, the department, and the department field office with jurisdiction over the facility. A copy of the minutes of this public meeting and the list of community concerns must be placed in the operating record and submitted to the department.

113.10(8) *Selection of remedy.*

a. Based on the results of the corrective measures assessment conducted under subrule 113.10(7), the owner or operator must select a remedy within 60 days of holding the public meeting that, at a minimum, meets the standards listed in paragraph 113.10(8) “*b*.” The department may establish an alternative schedule for selecting a remedy after holding the public meeting. The owner or operator must submit a

report to the department, within 14 days of selecting a remedy, describing the selected remedy, stating that the report has been placed in the operating record, and explaining how the selected remedy meets the standards in paragraph 113.10(8) "b."

b. Remedies must:

- (1) Be protective of human health and the environment;
- (2) Attain the groundwater protection standards specified pursuant to paragraph 113.10(6) "h" or 113.10(6) "i";
- (3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix II constituents into the environment that may pose a threat to human health or the environment; and
- (4) Comply with standards for management of wastes as specified in paragraph 113.10(9) "d."

c. In selecting a remedy that meets the standards of paragraph 113.10(8) "b," the owner or operator shall consider the following evaluation factors:

(1) The long-term and short-term effectiveness and protectiveness of the potential remedy(ies), along with the degree of certainty that the remedy will prove successful based on consideration of the following:

1. Magnitude of reduction of existing risks;
2. Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;
3. The type and degree of long-term management required, including monitoring, operation, and maintenance;
4. Short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, redispersion, or containment;
5. Time period until full protection is achieved;
6. Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redispersion, or containment;
7. Long-term reliability of the engineering and institutional controls; and
8. Potential need for replacement of the remedy.

(2) The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

1. The extent to which containment practices will reduce further releases; and
2. The extent to which treatment technologies may be used.

(3) The ease or difficulty of implementing a potential remedy(ies) based on consideration of the following factors:

1. Degree of difficulty associated with constructing the technology;
2. Expected operational reliability of the technology;
3. Need to coordinate with and obtain necessary approvals and permits from other agencies;
4. Availability of necessary equipment and specialists; and
5. Available capacity and location of needed treatment, storage, and disposal services.

(4) Practicable capability of the owner or operator, including a consideration of technical and economic capabilities.

(5) The degree to which community concerns, including but not limited to the concerns identified at the public meeting required pursuant to paragraph 113.10(7) "d," are addressed by a potential remedy(ies).

d. The owner or operator shall specify as part of the selected remedy a schedule(s) for initiating and completing remedial activities. Such a schedule must require the initiation of remedial activities within a reasonable period of time taking into consideration the factors set forth in subparagraphs 113.10(8) "d"(1) to (8). The owner or operator must consider the following factors in determining the schedule of remedial activities:

- (1) Extent and nature of contamination;

(2) Practical capabilities of remedial technologies in achieving compliance with groundwater protection standards established under paragraph 113.10(6) “h” or 113.10(6) “i” and other objectives of the remedy;

(3) Availability of treatment or disposal capacity for wastes managed during implementation of the remedy;

(4) Desirability of utilizing alternative or experimental technologies that are not widely available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;

(5) Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

(6) Resource value of the aquifer including:

1. Current and future uses;
2. Proximity and withdrawal rate of users;
3. Groundwater quantity and quality;
4. The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

5. The hydrogeologic characteristics of the facility and surrounding land;

6. Groundwater removal and treatment costs; and

7. The cost and availability of alternative water supplies;

(7) Practicable capability of the owner or operator; and

(8) Other relevant factors.

113.10(9) *Implementation of the corrective action plan.*

a. Based on the schedule established under paragraph 113.10(8) “d” for initiation and completion of remedial activities, the owner or operator must:

(1) Establish and implement a corrective action groundwater monitoring program that:

1. At a minimum, meets the requirements of an assessment monitoring program under subrule 113.10(6);

2. Indicates the effectiveness of the corrective action remedy; and

3. Demonstrates compliance with groundwater protection standards pursuant to paragraph 113.10(9) “e”;

(2) Implement the corrective action remedy selected under subrule 113.10(8); and

(3) Take any interim measures necessary to ensure the protection of human health and the environment. Interim measures should, to the greatest extent practicable, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to subrule 113.10(8). The following factors must be considered by an owner or operator in determining whether interim measures are necessary:

1. Time period required to develop and implement a final remedy;

2. Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;

3. Actual or potential contamination of drinking water supplies or sensitive ecosystems;

4. Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

5. Weather conditions that may cause hazardous constituents to migrate or be released;

6. Risk of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or the failure of a container or handling system; and

7. Other factors that may pose threats to human health and the environment.

b. An owner or operator may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with the requirements of paragraph 113.10(8) “b” is not being achieved through the remedy selected. In such cases, the owner or operator must notify the department and implement other methods or techniques that could practicably achieve compliance with the requirements, unless the owner or operator makes the determination under paragraph 113.10(9) “c.” The notification shall explain how the proposed alternative methods or techniques will meet the standards in

paragraph 113.10(8)“b,” or the notification shall indicate that the determination was made pursuant to paragraph 113.10(9)“c.” The notification shall also specify a schedule(s) for implementing and completing the remedial activities to comply with paragraph 113.10(8)“b” or the alternative measures to comply with paragraph 113.10(9)“c.” Within 90 days of approval by the department for the proposed alternative methods or techniques or the determination of impracticability, the owner or operator shall implement the proposed alternative methods or techniques meeting the standards of paragraph 113.10(8)“b” or implement alternative measures meeting the requirements of subparagraphs 113.10(9)“c”(2) and (3).

c. If the owner or operator determines that compliance with requirements under paragraph 113.10(8)“b” cannot be practicably achieved with any currently available methods, the owner or operator must:

(1) Obtain certification of a qualified groundwater scientist and approval by the department that compliance with requirements under paragraph 113.10(8)“b” cannot be practicably achieved with any currently available methods;

(2) Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment;

(3) Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:

1. Technically practicable; and
2. Consistent with the overall objective of the remedy; and

(4) Notify the department within 14 days that a report justifying the alternate measures prior to implementation has been placed in the operating record.

d. All solid wastes that are managed pursuant to a remedy required under subrule 113.10(8), or an interim measure required under subparagraph 113.10(9)“a”(3), shall be managed in a manner:

- (1) That is protective of human health and the environment; and
- (2) That complies with applicable RCRA, state and local requirements.

e. Remedies selected pursuant to subrule 113.10(8) shall be considered complete when:

(1) The owner or operator complies with the groundwater protection standards established under paragraph 113.10(6)“h” or 113.10(6)“i” at all points within the plume of contamination that lie beyond the groundwater monitoring well system established under subrule 113.10(2).

(2) Compliance with the groundwater protection standards established under paragraph 113.10(6)“h” or 113.10(6)“i” has been achieved by demonstrating that concentrations of Appendix II constituents have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in paragraphs 113.10(4)“g” and 113.10(4)“h.” The department may specify an alternative length of time during which the owner or operator must demonstrate that concentrations of Appendix II constituents have not exceeded the groundwater protection standard(s), taking into consideration:

1. The extent and concentration of the release(s);
2. The behavior characteristics of the hazardous constituents in the groundwater;
3. The accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variables that may affect accuracy; and
4. The characteristics of the groundwater.

(3) All actions required by the department to complete the remedy have been satisfied.

f. Upon completion of the remedy, the owner or operator must notify the department within 14 days that a certification has been placed in the operating record verifying that the remedy has been completed in compliance with the requirements of paragraph 113.10(9)“e.” The certification must be signed by the owner or operator and by a qualified groundwater scientist and approved by the department.

g. When, upon completion of the certification, the owner or operator determines that the corrective action remedy has been completed in accordance with the requirements under paragraph 113.10(9)“e,” the owner or operator shall be released from the requirements for financial assurance for corrective action pursuant to subrule 113.14(5).

113.10(10) Annual water quality reports. The owner or operator shall submit an annual report to the department detailing the water quality monitoring sampling locations and results, assessments, selection of remedies, implementation of corrective action, and the results of corrective action remedies to address

SSIs, if any, during the previous year. This report shall include a site map that delineates all monitoring points where water quality samples were taken, and plumes of contamination, if any. The report shall contain a narrative explaining and interpreting all of the data collected during the previous year. The report shall be due each year on a date set by the department in the facility's permit.

567—113.11(455B,455D) Record-keeping and reporting requirements. The primary purpose of the record-keeping and reporting activities is to verify compliance with this chapter and to document the construction and operations of the facility. The department can set alternative schedules for record-keeping and notification requirements as specified in subrules 113.11(1) and 113.11(2), except for the notification requirements in paragraph 113.6(2)“a” and numbered paragraph 113.10(6)“g”(1)“3.” All MSWLFs shall comply with the following record-keeping and reporting requirements.

113.11(1) Record keeping. The owner or operator of an MSWLF unit must record and retain near the facility in an operating record or in an alternative location approved by the department the following information as it becomes available:

- a. Permit application, permit renewal and permit modification application materials pursuant to rule 567—113.5(455B);
- b. The site exploration and characterization reports pursuant to subrule 113.6(4);
- c. Design and construction plans and specifications, and related analyses and documents, pursuant to rule 567—113.7(455B). The QC&A final reports, and related analyses and documents, pursuant to paragraph 113.7(6)“d”;
- d. Inspection records, training procedures, and notification procedures required in rule 567—113.8(455B);
- e. Any MSWLF unit design documentation for placement of leachate or gas condensate in an MSWLF unit as required under numbered paragraphs 113.8(1)“b”(3)“2” and “3”;
- f. Gas monitoring results from monitoring and any remediation plans required by rule 567—113.9(455B);
- g. Any demonstration, certification, finding, monitoring, testing, or analytical data required by rule 567—113.10(455B);
- h. Closure and postclosure care plans and any monitoring, testing, or analytical data as required by rules 567—113.12(455B) and 567—113.13(455B); and
- i. Any cost estimates and financial assurance documentation required by this chapter.

113.11(2) Reporting requirements. The owner or operator must notify the department when the documents required in subrule 113.11(1) have been placed in the operating record. All information contained in the operating record must be furnished upon request to the department and be made available at all reasonable times for inspection by the department.

567—113.12(455B) Closure criteria. All MSWLFs shall comply with the following closure requirements.

113.12(1) Owners or operators of all MSWLF units must install a final cover system that is designed to minimize infiltration and erosion. The final cover system must be designed and constructed to:

- a. Have a permeability less than or equal to the permeability of any bottom liner system (for MSWLFs with some type of liner) or have a permeability no greater than 1×10^{-7} cm/sec, whichever is less;
- b. Minimize infiltration through the closed MSWLF by the use of an infiltration layer that contains a minimum of 18 inches of compacted earthen material;
- c. Minimize erosion of the final cover by the use of an erosion layer that contains a minimum of 24 inches of earthen material that is capable of sustaining native plant growth;
- d. Have an infiltration layer and erosion layer that are a combined minimum of 42 inches of earthen material at all locations over the closed MSWLF unit; and
- e. Have a slope between 5 percent and 25 percent. Steeper slopes may be used if it is demonstrated that a steeper slope is unlikely to adversely affect final cover system integrity.

113.12(2) The department may approve an alternative final cover design that includes:

- a. An infiltration layer that achieves reduction in infiltration equivalent to the infiltration layer specified in paragraphs 113.12(1)“a” and 113.12(1)“b”; and

b. An erosion layer that provides protection from wind and water erosion equivalent to the erosion layer specified in paragraphs 113.12(1) “*c*” and 113.12(1) “*d*.”

113.12(3) The owner or operator must prepare a written closure plan that describes the steps necessary to close all MSWLF units at any point during the active life in accordance with the cover design requirements in subrule 113.12(1) or 113.12(2), as applicable. The closure plan, at a minimum, must include the following information:

a. A description of the final cover including source, volume, and characteristics of cover material, designed in accordance with subrule 113.12(1) or 113.12(2) and the methods and procedures to be used to install the cover;

b. An estimate of the largest area of the MSWLF unit requiring a final cover, as required under subrule 113.12(1) or 113.12(2), at any time during the active life;

c. An estimate of the maximum inventory of wastes on site over the active life of the landfill facility; and

d. A schedule for completing all activities necessary to satisfy the closure criteria in rule 567—113.12(455B).

113.12(4) The owner or operator must notify the department that the closure plan has been placed in the operating record no later than the initial receipt of waste in a new MSWLF unit.

113.12(5) At least 180 days prior to beginning closure of each MSWLF unit as specified in subrule 113.12(6), an owner or operator must notify the department of the intent to close the MSWLF unit, and that a notice of the intent to close the unit has been placed in the operating record. If the MSWLF facility will no longer be accepting MSW for disposal, then the owner or operator must also notify all local governments utilizing the facility and post a public notice of the intent to close and no longer to accept MSW.

113.12(6) The owner or operator must begin closure activities of each MSWLF unit:

a. No later than 30 days after the date on which the MSWLF unit receives the known final receipt of wastes; or

b. If the MSWLF unit has remaining capacity and there is a reasonable likelihood that the MSWLF unit will receive additional wastes, no later than one year after the most recent receipt of wastes. Extensions beyond the one-year deadline for beginning closure may be granted by the department if the owner or operator demonstrates that the MSWLF unit has the capacity to receive additional wastes and the owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed MSWLF unit.

113.12(7) The owner or operator of all MSWLF units must complete closure activities of each MSWLF unit in accordance with the closure plan within 180 days following the beginning of closure as specified in subrule 113.12(6). Extensions of the closure period may be granted by the department if the owner or operator demonstrates that closure will, of necessity, take longer than 180 days and that the owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed MSWLF unit.

113.12(8) Following closure of each MSWLF unit, the owner or operator must submit to the department certification, signed by an independent professional engineer (P.E.) registered in Iowa, verifying that closure has been completed in accordance with the closure plan. Upon approval by the department, the certification shall be placed in the operating record.

113.12(9) Following closure of all MSWLF units, the owner or operator must record a notation on the deed to the landfill facility property, or some other instrument that is normally examined during title search in lieu of a deed notification, and notify the department that the notation has been recorded and a copy has been placed in the operating record. The notation on the deed must in perpetuity notify any potential purchaser of the property that:

a. The land has been used as a landfill facility; and

b. Its use is restricted under paragraph 113.13(3) “*c*.”

113.12(10) The owner or operator may request permission from the department to remove the notation from the deed if all wastes are removed from the facility.

567—113.13(455B) Postclosure care requirements. All MSWLFs shall comply with the following postclosure care requirements.

113.13(1) Following closure of each MSWLF unit, the owner or operator must conduct postclosure care. Postclosure care must be conducted for 30 years, except as provided under subrule 113.13(2), and consist of at least the following:

a. Maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and runoff from eroding or otherwise damaging the final cover;

b. Maintaining and operating the leachate collection system in accordance with the requirements in paragraphs 113.7(5) “*b*” and 113.8(3) “*i*,” if applicable. The department may allow the owner or operator to stop managing leachate if the owner or operator demonstrates that leachate no longer poses a threat to human health and the environment;

c. Monitoring the groundwater in accordance with the requirements of rule 567—113.10(455B) and maintaining the groundwater monitoring system; and

d. Maintaining and operating the gas monitoring system in accordance with the requirements of rule 567—113.9(455B).

113.13(2) The length of the postclosure care period may be:

a. Decreased by the department if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the department; or

b. Increased by the department if the department determines that the lengthened period is necessary to protect human health and the environment.

113.13(3) The owner or operator of all MSWLF units must prepare a written postclosure plan that includes, at a minimum, the following information:

a. A description of the monitoring and maintenance activities required in subrule 113.13(1) for each MSWLF unit, and the frequency at which these activities will be performed;

b. Name, address, and telephone number of the person or office to contact about the facility during the postclosure period; and

c. A description of the planned uses of the property during the postclosure period. Postclosure use of the property shall not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this chapter. The department may approve any other disturbance if the owner or operator demonstrates that disturbance of the final cover, liner or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment.

113.13(4) The owner or operator must notify the department that a postclosure plan has been prepared and placed in the operating record by the date of initial receipt of waste.

113.13(5) Following completion of the postclosure care period for each MSWLF unit, the owner or operator must submit to the department a certification, signed by an independent professional engineer (P.E.) registered in Iowa, verifying that postclosure care has been completed in accordance with the postclosure plan. Upon department approval, the certification shall be placed in the operating record.

567—113.14(455B) Municipal solid waste landfill financial assurance.

113.14(1) *Purpose.* The purpose of this rule is to implement Iowa Code sections 455B.304(8) and 455B.306(8) by providing the criteria for establishing financial assurance for closure, postclosure care and corrective action at MSWLFs.

113.14(2) *Applicability.* The requirements of this rule apply to all owners and operators of MSWLFs except owners or operators that are state or federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States.

113.14(3) *Financial assurance for closure.* The owner or operator of an MSWLF must establish financial assurance for closure in accordance with the criteria in this rule. The owner or operator must provide continuous coverage for closure until released from this requirement by demonstrating compliance with rule 567—113.12(455B). Proof of compliance pursuant to paragraphs 113.14(3) “*a*” through 113.14(3) “*e*” must be submitted by the owner or operator yearly by April 1 and approved by the department.

a. The owner or operator shall submit the current version of department Form 542-8090, Municipal Solid Waste Sanitary Landfill Financial Assurance Report Form, which contains, but is not limited to, the amount of the financial assurance, the annual financial statement required by Iowa Code sections 455B.306(8) “e” and 455B.306(6) “c,” and the current balances of the closure and postclosure accounts at the time of submittal as required by Iowa Code section 455B.306(8) “b.”

b. The owner or operator shall submit a copy of the financial assurance instruments or the documents establishing the financial assurance instruments in an amount equal to or greater than the amount specified in subrule 113.14(9). Documentation for the mechanism(s) used to demonstrate financial assurance shall contain, at a minimum, the items required to be submitted as specified in paragraphs 113.14(6) “a” to 113.14(6) “i.”

c. The owner or operator shall submit a detailed written estimate, in current dollars, certified by an Iowa-licensed professional engineer, of the cost of hiring a third party to close the MSWLF in accordance with the closure plan as required by paragraph 103.5(1) “i” and rule 567—113.12(455B). Such estimate must be available at any time during the active life of the landfill.

(1) The cost estimate must equal the cost of closing the MSWLF at any time during the permitted life of the facility when the extent and manner of its operation would make closure the most expensive.

(2) The costs contained in the third-party estimate for closure must be accurate and reasonable when compared to the cost estimates used by other similarly situated landfills in Iowa.

(3) During the active life of the MSWLF, the owner or operator must annually adjust the closure cost estimate for inflation.

(4) The owner or operator must, annually or at the time of application for a permit amendment that increases closure costs, whichever occurs first, increase the closure cost estimate and the amount of financial assurance provided if changes to the closure plan or MSWLF conditions increase the maximum cost of closure at any time during the remaining active life of the facility.

(5) The owner or operator may reduce the amount of financial assurance for closure if the most recent estimate of the maximum cost of closure at any time during the active life of the facility is less than the amount of financial assurance currently provided. Prior to the reduction, the owner or operator must submit to the department the justification for the reduction of the closure cost estimate and the updated documentation required by paragraphs 113.14(3) “a” through 113.14(3) “e” and receive department approval for the reduction. Approval or denial shall be issued within 30 days of receipt of the reduction request.

(6) The third-party estimate submitted to the department must include the site area subject to closure and account for at least the following factors determined by the department to be minimal necessary costs for closure:

1. Closure and postclosure plan document revisions;
2. Site preparation, earthwork and final grading;
3. Drainage control culverts, piping and structures;
4. Erosion control structures, sediment ponds and terraces;
5. Final cap construction;
6. Cap vegetation soil placement;
7. Cap seeding, mulching and fertilizing;
8. Monitoring well, piezometer and gas control modifications;
9. Leachate system cleanout and extraction well modifications;
10. Monitoring well installations and abandonments;
11. Facility modifications to effect closed status;
12. Engineering and technical services;
13. Legal, financial and administrative services; and
14. Closure compliance certifications and documentation.

d. For publicly owned MSWLFs, the owner or operator shall submit to the department a copy of the owner’s or operator’s most recent annual audit report in the form prescribed by the office of the auditor of the state of Iowa.

e. Privately held MSWLFs shall submit an affidavit from the owner or operator indicating that a yearly review has been performed by a certified public accountant to determine whether the privately owned landfill is in compliance with this chapter. The affidavit shall state the name of the certified public accountant, the dates and conclusions of the review, and the steps taken to rectify any deficiencies identified by the accountant.

113.14(4) *Financial assurance for postclosure care.* The owner or operator of an MSWLF must establish financial assurance for the costs of postclosure care in accordance with the criteria in this chapter. The owner or operator must provide continuous coverage for postclosure care until released from this requirement by demonstrating compliance with the postclosure plan and the closure permit. Proof of compliance pursuant to paragraphs 113.14(4) "a" through 113.14(4) "e" must be submitted by the owner or operator yearly by April 1 and approved by the department.

a. The owner or operator shall submit the current version of department Form 542-8090, Municipal Solid Waste Sanitary Landfill Financial Assurance Report Form, which contains, but is not limited to, the amount of the financial assurance, the annual financial statement required by Iowa Code sections 455B.306(8) "e" and 455B.306(6) "c," and the current balances of the closure and postclosure accounts required by Iowa Code section 455B.306(8) "b."

b. The owner or operator shall submit a copy of the documents establishing a financial assurance instrument in an amount equal to or greater than the amount specified in subrule 113.14(9). Documentation for the mechanism(s) used to demonstrate financial assurance shall contain, at a minimum, the items required to be submitted as specified in paragraphs 113.14(6) "a" to 113.14(6) "i."

c. The owner or operator shall submit a detailed written estimate, in current dollars, certified by an Iowa-licensed professional engineer, of the cost of hiring a third party to conduct postclosure care for the MSWLF in compliance with the postclosure plan developed pursuant to paragraph 113.5(1) "i" and rule 567—113.13(455B). The cost estimate must account for the total cost of conducting postclosure care, as described in the plan, for the entire postclosure care period.

(1) The cost estimate for postclosure care must be based on the most expensive costs of that care during the entire postclosure care period.

(2) The costs contained in the third-party estimate for postclosure care must be accurate and reasonable when compared to the cost estimates used by other similarly situated landfills in Iowa.

(3) During the active life of the MSWLF and during the postclosure care period, the owner or operator must annually adjust the postclosure cost estimate for inflation.

(4) The owner or operator must, annually or at the time of application for a permit amendment that increases postclosure costs, whichever occurs first, increase the estimate and the amount of financial assurance provided if changes in the postclosure plan or MSWLF conditions increase the maximum cost of postclosure care.

(5) The owner or operator may reduce the amount of financial assurance for postclosure care if the most recent estimate of the maximum cost of postclosure care beginning at any time during the active life of the facility is less than the amount of financial assurance currently provided. Prior to the reduction, the owner or operator must submit to the department the justification for the reduction of the postclosure cost estimate and the updated documentation required by paragraphs 113.14(4) "a" through 113.14(4) "e" and must receive department approval for the reduction. Approval or denial shall be issued within 30 days of receipt of the reduction request.

(6) The third-party estimate submitted to the department must include the site area subject to postclosure care and account for at least the following factors determined by the department to be minimal necessary costs for postclosure care:

1. General site facilities, access roads and fencing maintenance;
2. Cap and vegetative cover maintenance;
3. Drainage and erosion control systems maintenance;
4. Groundwater to waste separation systems maintenance;
5. Gas control systems maintenance;
6. Gas control systems monitoring and reports;
7. Groundwater and surface water monitoring systems maintenance;

8. Groundwater and surface water quality monitoring and reports;
 9. Groundwater monitoring systems performance evaluations and reports;
 10. Leachate control systems maintenance;
 11. Leachate management, transportation and disposal;
 12. Leachate control systems performance evaluations and reports;
 13. Engineering and technical services;
 14. Legal, financial and administrative services; and
 15. Financial assurance, accounting, audits and reports.
- d. For publicly owned MSWLFs, the owner or operator shall submit to the department a copy of the owner's or operator's most recent annual audit report in the form prescribed by the office of the auditor of the state of Iowa.
- e. Privately held MSWLFs shall submit an affidavit from the owner or operator indicating that a yearly review has been performed by a certified public accountant to determine whether the privately owned landfill is in compliance with this chapter. The affidavit shall state the name of the certified public accountant, the dates and conclusions of the review, and the steps taken to rectify any deficiencies identified by the accountant.

113.14(5) *Financial assurance for corrective action.*

a. An owner or operator required to undertake corrective action pursuant to rules 567—113.9(455B) and 567—113.10(455B) must have a detailed written estimate, in current dollars, prepared by an Iowa licensed professional engineer of the cost of hiring a third party to perform the required corrective action. The estimate must account for the total costs of the activities described in the approved corrective action plan for the entire corrective action period. The owner or operator must submit to the department the estimate and financial assurance documentation within 30 days of department approval of the corrective action plan.

(1) The owner or operator must annually adjust the estimate for inflation until the corrective action plan is completed.

(2) The owner or operator must increase the cost estimate and the amount of financial assurance provided if changes in the corrective action plan or MSWLF conditions increase the maximum cost of corrective action.

(3) The owner or operator may reduce the amount of the cost estimate and the amount of financial assurance provided if the estimate exceeds the maximum remaining costs of the remaining corrective action. The owner or operator must submit to the department the justification for the reduction of the cost estimate and documentation of financial assurance.

b. The owner or operator of an MSWLF required to undertake a corrective action plan must establish financial assurance for the most recent corrective action plan by one of the mechanisms prescribed in subrule 113.14(6). The owner or operator must provide continuous coverage for corrective action until released from financial assurance requirements by demonstrating compliance with the following:

(1) Upon completion of the remedy, the owner or operator must submit to the department a certification of compliance with the approved corrective action plan. The certification must be signed by the owner or operator and by a qualified groundwater scientist and approved by the department.

(2) Upon department approval of completion of the corrective action remedy, the owner or operator shall be released from the requirements for financial assurance for corrective action.

113.14(6) *Allowable financial assurance mechanisms.* The mechanisms used to demonstrate financial assurance as required by Iowa Code section 455B.306(8) "a" must ensure that the funds necessary to meet the costs of closure, postclosure care, and corrective action for known releases will be available whenever the funds are needed. Owners or operators must choose from options in paragraphs 113.14(6) "a" to 113.14(6) "i."

a. *Trust fund.*

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, and corrective action, whichever is applicable, by establishing a trust fund which conforms to the requirements of this subrule. The trustee must be an entity which has the authority to act as a trustee and whose trust operations

are regulated and examined by a federal or state agency. A copy of the trust agreement must be submitted pursuant to subrules 113.14(3) and 113.14(4) and placed in the facility's official files.

(2) Payments into the trust fund must be made annually by the owner or operator over ten years or over the remaining life of the MSWLF, whichever is shorter, in the case of a trust fund for closure or postclosure care; or over one-half of the estimated length of the corrective action plan in the case of response to a known release. This period is referred to as the pay-in period.

(3) For a trust fund used to demonstrate financial assurance for closure and postclosure care, the first payment into the fund must be at least equal to the amount specified in subrule 113.14(9) for closure or postclosure care divided by the number of years in the pay-in period as defined in subparagraph 113.14(6) "a"(2).

The amount of subsequent payments must be determined by the following formula:

$$\text{Next Payment} = \frac{\text{CE} - \text{CB}}{Y}$$

where CE is the amount specified in 113.14(9) for closure or postclosure care (updated for inflation or other changes), CB is the current balance of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund must be at least equal to one-half of the current cost estimate for corrective action divided by the number of years in the corrective action pay-in period as defined in subparagraph 113.14(6) "a"(2). The amount of subsequent payments must be determined by the following formula:

$$\text{Next Payment} = \frac{\text{RB} - \text{CV}}{Y}$$

where RB is the most recent estimate of the required trust fund balance for corrective action, which is the total cost that will be incurred during the second half of the corrective action period, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(5) The initial payment into the trust fund must be made before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure care; or no later than 120 days after the corrective action remedy has been approved by the department.

(6) The owner or operator, or other person authorized to conduct closure, postclosure care, or corrective action activities may request reimbursement from the trustee for these expenditures, including partial closure, as they are incurred. Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure, postclosure care, or corrective action and if justification and documentation of the costs are placed in the operating record. The owner or operator must submit to the department documentation of the justification for reimbursement and verification that reimbursement has been received.

(7) The trust fund may be terminated by the owner or operator only if the owner or operator substitutes alternative financial assurance as specified in this rule or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this chapter.

(8) After the pay-in period has been completed, the trust fund shall be adjusted annually to correct any deficiency of the fund with respect to the adjusted cost estimates and may be adjusted annually should the balance in the fund exceed the adjusted cost estimate.

b. Surety bond guaranteeing payment or performance.

(1) An owner or operator may demonstrate financial assurance for closure or postclosure care by obtaining a payment or performance surety bond which conforms to the requirements of this subrule. An owner or operator may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of this subrule. The bond must be effective before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure care; or no later than 120 days after the corrective action remedy has been approved by the department. The owner or operator must submit a copy of the bond to the department and keep a copy in the facility's official files. The surety company issuing the bond must, at a minimum, be

among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. Department of the Treasury. The state shall not be considered a party to the surety bond.

(2) The penal sum of the bond must be in an amount at least equal to the amount specified in subrule 113.14(9) for closure and postclosure or corrective action, whichever is applicable.

(3) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond and also upon notice from the department pursuant to subparagraph 113.14(6) "b"(6).

(4) The owner or operator must establish a standby trust fund. The standby trust fund must meet the requirements of paragraph 113.14(6) "a" except the requirements for initial payment and subsequent annual payments specified in subparagraphs 113.14(6) "a"(2) through (5).

(5) Payments made under the terms of the bond will be deposited by the surety directly into the standby trust fund. Payments from the trust fund must be approved by the trustee and the department.

(6) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner and operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice from the surety of withdrawal of the cancellation, or proof of a deposit into the standby trust of a sum equal to the amount of the bond. If the owner or operator has not complied with this subparagraph within the 60-day time period, this shall constitute a failure to perform and the department shall notify the surety, prior to the expiration of the 120-day notice period, that such a failure has occurred.

(7) The bond must be conditioned upon faithful performance by the owner or operator of all closure, postclosure, or corrective action requirements of the Code of Iowa and this chapter. A failure to comply with subparagraph 113.14(6) "b"(6) shall also constitute a failure to perform under the terms of the bond.

(8) Liability under the bond shall be for the duration of the operation, closure, and postclosure periods.

(9) The owner or operator may cancel the bond only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this chapter.

c. Letter of credit.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure care, or corrective action, whichever is applicable, by obtaining an irrevocable standby letter of credit which conforms to the requirements of this subrule. The letter of credit must be effective before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure care; or no later than 120 days after the corrective action plan is approved by the department. The owner or operator must submit to the department a copy of the letter of credit and place a copy in the facility's official files. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the facility, and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the facility's files.

(3) The letter of credit must be irrevocable and issued for a period of at least one year in an amount at least equal to the amount specified in subrule 113.14(9) for closure, postclosure care or corrective action, whichever is applicable. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into the closure and postclosure accounts established pursuant to Iowa Code section 455B.306(8) "b." If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the closure and postclosure accounts established by the owner or operator pursuant to Iowa Code section 455B.306(8) "b." The provision of funds by the issuer of

the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

(4) The owner or operator may cancel the letter of credit only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this chapter.

d. Insurance.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure care, or corrective action by obtaining insurance which conforms to the requirements of this subrule. The insurance must be effective before the initial receipt of waste or prior to cancellation of an alternative financial assurance, in the case of closure and postclosure care; or no later than 120 days after the corrective action plan has been approved by the department. At a minimum, the insurer must be licensed to transact the business of insurance, or be eligible to provide insurance as an excess or surplus lines insurer, in one or more states. The owner or operator must submit to the department a copy of the insurance policy and retain a copy in the facility's official files.

(2) The closure or postclosure care insurance policy must guarantee that funds will be available to close the MSWLF unit whenever final closure occurs or to provide postclosure care for the MSWLF unit whenever the postclosure care period begins, whichever is applicable. The policy must also guarantee that once closure or postclosure care begins, the insurer will be responsible for the paying out of funds to the owner or operator or other person authorized to conduct closure or postclosure care, up to an amount equal to the face amount of the policy.

(3) The insurance policy must be issued for a face amount at least equal to the amount specified in subrule 113.14(9) for closure, postclosure care, or corrective action, whichever is applicable. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(4) An owner or operator, or any other person authorized to conduct closure or postclosure care, may receive reimbursements for closure or postclosure expenditures, including partial closure, whichever is applicable. Requests for reimbursement will be granted by the insurer only if the remaining value of the policy is sufficient to cover the remaining costs of closure or postclosure care, and if justification and documentation of the cost are placed in the operating record. The owner or operator must submit to the department documentation of the justification for reimbursement and verification that the reimbursement has been received.

(5) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided that such consent is not unreasonably refused.

(6) The insurance policy must provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may cancel the policy by sending notice of cancellation by certified mail to the owner and operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice from the insurer of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the insurance coverage into the closure and postclosure accounts established pursuant to Iowa Code section 455B.306(8) "b." If the owner or operator has not complied with this subrule within the 60-day time period, this shall constitute a failure to perform and shall be a covered event pursuant to the terms of the insurance policy. A failure by the owner or operator to comply with this subrule within the 60-day period shall make the insurer liable for the closure and postclosure care of the covered facility up to the amount of the policy limits, which shall be equal to the most recently submitted cost estimates.

(7) For insurance policies providing coverage for postclosure care, commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the

face amount of the policy. Such increase must be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for 26-week treasury securities.

(8) The owner or operator may cancel the insurance only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

e. Corporate financial test. An owner or operator that satisfies the requirements of this subrule may demonstrate financial assurance up to the amount specified below:

(1) Financial component. The owner or operator must satisfy the requirements of numbered paragraphs 113.14(6) “e”(1)“1” to “3” to meet the financial component of the corporate financial test.

1. The owner or operator must satisfy one of the following three conditions:

- A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor’s or Aaa, Aa, A or Baa as issued by Moody’s; or
- A ratio of less than 1.5 comparing total liabilities to net worth (net worth calculations may not include future permitted capacity of the subject landfill as an asset); or
- A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities;

2. The tangible net worth, excluding future permitted capacity of the subject landfill, of the owner or operator must be greater than:

- The sum of the current closure, postclosure care, and corrective action cost estimates and any other environmental obligations, including guarantees, covered by this financial test plus \$10 million except as provided in the second bulleted paragraph of numbered paragraph 113.14(6) “e”(1)“2”; or
- Net worth of \$10 million, excluding future permitted capacity of the subject landfill, plus the amount of any guarantees that have not been recognized as liabilities on the financial statements, provided that all of the current closure, postclosure care, and corrective action costs and any other environmental obligations covered by a financial test are recognized as liabilities on the owner’s or operator’s audited financial statements, and are subject to the approval of the department; and

3. The owner or operator must have, located in the United States, assets, excluding future permitted capacity of the subject landfill, amounting to at least the sum of current closure, postclosure care, and corrective action cost estimates and any other environmental obligations covered by a financial test as described in subparagraph 113.14(6) “e”(5).

(2) Record-keeping and reporting requirements. The owner or operator must submit the following records to the department and place a copy in the facility’s official files prior to the initial receipt of solid waste or cancellation of an alternative financial assurance instrument, in the case of closure and postclosure care; or no later than 120 days after the corrective action plan has been approved by the department:

1. A letter signed by a certified public accountant and based upon a certified audit that:

- Lists all the current cost estimates covered by a financial test including, but not limited to, cost estimates required by subrules 113.14(3) to 113.14(5); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40 CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and

- Provides evidence demonstrating that the owner or operator meets the conditions of subparagraph 113.14(6) “e”(1).

2. A copy of the independent certified public accountant’s unqualified opinion of the owner’s or operator’s financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner’s or operator’s financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this mechanism. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the

corporate financial test, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

3. If the certified public accountant's letter providing evidence of financial assurance includes financial data showing that the owner or operator satisfies subparagraph 113.14(6)"e"(1) that differs from data in the audited financial statements referred to in numbered paragraph 113.14(6)"e"(2)"2," then a special report from the owner's or operator's independent certified public accountant to the owner or operator is required. The special report shall be based upon an agreed-upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the certified public accountant's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

4. If the certified public accountant's letter provides a demonstration that the owner or operator has assured for environmental obligations as provided in the second bulleted paragraph of numbered paragraph 113.14(6)"e"(1)"2," then the letter shall include a report from the independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements and that documents how these obligations have been measured and reported, and verifies that the tangible net worth of the owner or operator is at least \$10 million plus the amount of any guarantees provided.

(3) The owner or operator may cease the submission of the information required by paragraph 113.14(6)"e" only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this chapter.

(4) The department may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subparagraph 113.14(6)"e"(1), require the owner or operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in subparagraph 113.14(6)"e"(2). If the department finds that the owner or operator no longer meets the requirements of subparagraph 113.14(6)"e"(1), the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

(5) Calculation of costs to be assured. When calculating the current cost estimates for closure, postclosure care, corrective action, or the sum of the combination of such costs to be covered, and any other environmental obligations assured by a financial test referred to in paragraph 113.14(6)"e," the owner or operator must include cost estimates required for subrules 113.14(3) to 113.14(5); cost estimates for municipal solid waste management facilities pursuant to 40 CFR Section 258.74; and cost estimates required for the following environmental obligations, if the owner or operator assures those environmental obligations through a financial test: obligations associated with UIC facilities under 40 CFR Part 144, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265.

f. Local government financial test. An owner or operator that satisfies the requirements of this subrule may demonstrate financial assurance up to the amount specified below:

(1) Financial component.

1. The owner or operator must satisfy one of the following requirements:

- If the owner or operator has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the owner or operator must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard & Poor's on all such general obligation bonds; or

- The owner or operator must satisfy both of the following financial ratios based on the owner's or operator's most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

2. The owner or operator must prepare its financial statements in conformity with Generally Accepted Accounting Principles or Other Comprehensive Bases of Accounting and have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa.

3. A local government is not eligible to assure its obligations in paragraph 113.14(6) “f” if it:

- Is currently in default on any outstanding general obligation bonds; or
- Has any outstanding general obligation bonds rated lower than Baa as issued by Moody’s or BBB as issued by Standard & Poor’s; or
- Operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or

- Receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement as required under numbered paragraph 113.14(6) “f”(1)“2.” A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism.

4. The following terms used in this paragraph are defined as follows:

- “Cash plus marketable securities” means all the cash plus marketable securities held by the local government on the last day of a fiscal year, excluding cash and marketable securities designated to satisfy past obligations such as pensions.

- “Debt service” means the amount of principal and interest due on a loan in a given time period, typically the current year.

- “Deficit” means total annual revenues minus total annual expenditures.

- “Total expenditures” means all expenditures, excluding capital outlays and debt repayment.

- “Total revenues” means revenues from all taxes and fees, excluding revenue from funds managed by local government on behalf of a specific third party, and does not include the proceeds from borrowing or asset sales.

(2) Public notice component. The local government owner or operator must include disclosure of the closure and postclosure care costs assured through the financial test in its next annual audit report prior to the initial receipt of waste at the facility or prior to cancellation of an alternative financial assurance mechanism, whichever is later. A reference to corrective action costs must be placed in the next annual audit report after the corrective action plan is approved by the department. For the first year the financial test is used to assure costs at a particular facility, the reference may instead be placed in the facility’s official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure and postclosure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(3) Record-keeping and reporting requirements.

1. The local government owner or operator must submit to the department the following items:

- A letter signed by the local government’s chief financial officer that lists all the current cost estimates covered by a financial test, as described in subparagraph 113.14(6) “f”(4); provides evidence and certifies that the local government meets the conditions of numbered paragraphs 113.14(6) “f”(1)“1,” “2,” and “3”; and certifies that the local government meets the conditions of subparagraphs 113.14(6) “f”(2) and (4); and

- The local government’s annual financial report indicating compliance with the financial ratios required by numbered paragraph 113.14(6) “f”(1)“1,” second bulleted paragraph, if applicable; and the requirements of numbered paragraph 113.14(6) “f”(1)“2” and the third and fourth bulleted paragraphs of numbered paragraph 113.14(6) “f”(1)“3”; and also indicating that the requirements of Governmental Accounting Standards Board Statement 18 have been met.

2. The items required in numbered paragraph 113.14(6) “f”(3)“1” must be submitted to the department and placed in the facility’s official files prior to the receipt of waste or prior to the cancellation of an alternative financial mechanism, in the case of closure and postclosure care; or, in the case of corrective action, not later than 120 days after the corrective action plan is approved by the department.

3. After the initial submission of the required items and their placement in the facility’s official files, the local government owner or operator must update the information and place the updated information in the facility’s official files within 180 days following the close of the owner’s or operator’s fiscal year.

4. The owner or operator may cease the submission of the information required by paragraph 113.14(6) “f” only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

5. A local government must satisfy the requirements of the financial test at the close of each fiscal year. If the local government owner or operator no longer meets the requirements of the local government financial test, the local government must, within 180 days following the close of the owner’s or operator’s fiscal year, obtain alternative financial assurance that meets the requirements of this rule, place the required submissions for that assurance in the operating record, and notify the department that the owner or operator no longer meets the criteria of the financial test and that alternative financial assurance has been obtained.

6. The department, based on a reasonable belief that the local government owner or operator may no longer meet the requirements of the local government financial test, may require additional reports of financial conditions from the local government at any time. If the department finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of the local government financial test, the local government must provide alternative financial assurance in accordance with this rule.

(4) Calculation of costs to be assured. The portion of the closure, postclosure care, and corrective action costs which an owner or operator may assure under this subrule is determined as follows:

1. If the local government owner or operator does not assure other environmental obligations through a financial test, the owner or operator may assure closure, postclosure care, and corrective action costs that equal up to 43 percent of the local government’s total annual revenue.

2. If the local government assures other environmental obligations through a financial test, including those associated with UIC facilities under 40 CFR Section 144.62, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, the owner or operator must add those costs to the closure, postclosure care, and corrective action costs it seeks to assure under this subparagraph. The total that may be assured must not exceed 43 percent of the local government’s total annual revenue.

3. The owner or operator must obtain an alternative financial assurance instrument for those costs that exceed the limits set in numbered paragraphs 113.14(6) “f”(4)“1” and “2.”

g. Corporate guarantee.

(1) An owner or operator may meet the requirements of this paragraph by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a “substantial business relationship” with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraph 113.14(6) “g” and must comply with the terms of the guarantee. A certified copy of the guarantee must be placed in the facility’s operating record along with copies of the letter from a certified public accountant and the accountant’s opinions. If the guarantor’s parent corporation is also the parent corporation of the owner or operator, the letter from the certified public accountant must describe the value received in consideration of the guarantee. If the guarantor is an owner or operator with a “substantial business relationship” with the owner or operator, this letter must describe this “substantial business relationship” and the value received in consideration of the guarantee.

(2) The guarantee must be effective and all required submissions made to the department prior to the initial receipt of waste or before cancellation of an alternative financial mechanism, in the case of closure and postclosure care; or, in the case of corrective action, no later than 120 days after the corrective action plan has been approved by the department.

(3) The terms of the guarantee must provide that:

1. If the owner or operator fails to perform closure, postclosure care, or corrective action of a facility covered by the guarantee, or fails to obtain alternative financial assurance within 90 days of notice of intent to cancel pursuant to numbered paragraphs 113.14(6) “g”(3)“2” and “3,” the guarantor will:

- Perform, or pay a third party to perform, closure, postclosure care, or corrective action as required (performance guarantee);

- Establish a fully funded trust fund as specified in paragraph 113.14(6) “a” in the name of the owner or operator (payment guarantee); or

- Obtain alternative financial assurance as required by numbered paragraph 113.14(6) “g”(3)“3.”

2. The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements of this rule unless the guarantor sends prior notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts.

3. If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the department, provide to the department adequate proof of alternative financial assurance, notice from the guarantor of withdrawal of the cancellation, or proof of the establishment of a fully funded trust fund pursuant to paragraph 113.14(6) “a.” If the owner or operator fails to comply with the provisions of this paragraph within the 90-day period, the guarantor must provide that alternative financial assurance prior to cancellation of the corporate guarantee.

(4) If a corporate guarantor no longer meets the requirements of paragraph 113.14(6) “e,” the owner or operator must, within 90 days, obtain alternative financial assurance and submit proof of alternative financial assurance to the department. If the owner or operator fails to provide alternative financial assurance within the 90-day period, the guarantor must provide that alternative financial assurance within the next 30 days.

(5) The owner or operator is no longer required to meet the requirements of paragraph 113.14(6) “g” upon the submission to the department of proof of the substitution of alternative financial assurance or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this chapter.

h. Local government guarantee. An owner or operator may demonstrate financial assurance for closure, postclosure care, or corrective action by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E. The guarantor must meet the requirements of the local government financial test in paragraph 113.14(6) “f” and must comply with the terms of a written guarantee.

(1) Terms of the written guarantee. The guarantee must be effective before the initial receipt of waste or before the cancellation of alternative financial assurance, in the case of closure and postclosure care; or no later than 120 days after the corrective action plan is approved by the department. The guarantee must provide that:

1. If the owner or operator fails to perform closure, postclosure care, or corrective action of a facility covered by the guarantee or fails to obtain alternative financial assurance within 90 days of notice of intent to cancel pursuant to numbered paragraphs 113.14(6) “h”(1)“2” and “3,” the guarantor will:

- Perform, or pay a third party to perform, closure, postclosure care, or corrective action as required;

or

- Establish a fully funded trust fund as specified in paragraph 113.14(6) “a” in the name of the owner or operator; or

- Obtain alternative financial assurance as required by numbered paragraph 113.14(6) “h”(1)“3.”

2. The guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department as evidenced by the return receipts.

3. If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the department, provide to the department adequate proof of alternative financial assurance, notice from the guarantor of withdrawal of the cancellation, or proof of the establishment of a fully funded trust fund pursuant to paragraph 113.14(6) “a.” If the owner or operator fails to comply with the provisions of this paragraph within the 90-day period, the guarantor must provide that alternative financial assurance prior to cancellation of the guarantee.

(2) Record-keeping and reporting requirements.

1. The owner or operator must submit to the department a certified copy of the guarantee along with the items required under subparagraph 113.14(6)“f”(3) and place a copy in the facility’s official files before the initial receipt of waste or before cancellation of alternative financial assurance, whichever is later, in the case of closure and postclosure care; or no later than 120 days after the corrective action plan has been approved by the department.

2. The owner or operator shall no longer be required to submit the items specified in numbered paragraph 113.14(6)“h”(2)“1” when proof of alternative financial assurance has been submitted to the department or the owner or operator is no longer required to provide financial assurance pursuant to this rule.

3. If a local government guarantor no longer meets the requirements of paragraph 113.14(6)“f,” the owner or operator must, within 90 days, submit to the department proof of alternative financial assurance. If the owner or operator fails to obtain alternative financial assurance within the 90-day period, the guarantor must provide that alternative financial assurance within the next 30 days.

i. Local government dedicated fund. The owner or operator of a publicly owned MSWLF or local government serving as a guarantor may demonstrate financial assurance for closure, postclosure care, or corrective action, whichever is applicable, by establishing a dedicated fund or account that conforms to the requirements of this subrule. A dedicated fund will be considered eligible if it complies with subparagraph 113.14(6)“i”(1) or (2) below, and all other provisions of this paragraph, and documentation of this compliance has been submitted to the department.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, or order to pay for closure, postclosure care, or corrective action costs, whichever is applicable, arising from the operation of the MSWLF and shall be funded for the full amount of coverage or funded for part of the required amount of coverage and used in combination with another mechanism(s) that provides the remaining coverage.

(2) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, or order as a reserve fund and shall be funded for no less than the full amount of coverage or funded for part of the required amount of coverage and used in combination with another mechanism(s) that provides the remaining coverage.

(3) Payments into the dedicated fund must be made annually by the owner or operator for ten years or over the permitted life of the MSWLF, whichever is shorter, in the case of a dedicated fund for closure or postclosure care; or over one-half of the estimated length of an approved corrective action plan in the case of a response to a known release. This is referred to as the “pay-in period.” The initial payment into the dedicated fund must be made before the initial receipt of waste in the case of closure and postclosure care or no later than 120 days after the corrective action plan has been approved by the department.

(4) For a dedicated fund used to demonstrate financial assurance for closure and postclosure care, the first payment into the dedicated fund must be at least equal to the amount specified in subrule 113.14(9), divided by the number of years in the pay-in period as defined in this subrule. The amount of subsequent payments must be determined by the following formula:

$$\text{Next Payment} = \frac{\text{CE} - \text{CB}}{\text{Y}}$$

where CE is the total required financial assurance for the owner or operator, CB is the current balance of the fund, and Y is the number of years remaining in the pay-in period.

(5) For a dedicated fund used to demonstrate financial assurance for corrective action, the first payment into the dedicated fund must be at least one-half of the current cost estimate, divided by the number of years in the corrective action pay-in period as defined in this subrule. The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{RB} - \text{CF}}{\text{Y}}$$

where RB is the most recent estimate of the required dedicated fund balance, which is the total cost that will be incurred during the second half of the corrective action period, CF is the current amount in the dedicated fund, and Y is the number of years remaining in the pay-in period.

(6) The initial payment into the dedicated fund must be made before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure care; or no later than 120 days after the corrective action remedy has been approved by the department.

(7) After the pay-in period has been completed, the dedicated fund shall be adjusted annually to correct any deficiency of the fund with respect to the adjusted cost estimates and may be adjusted annually should the balance in the fund exceed the adjusted cost estimate.

113.14(7) General requirements.

a. Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this subrule by establishing more than one financial mechanism per facility. The mechanisms must be a combination of those mechanisms outlined in this rule and must provide financial assurance for an amount at least equal to the current cost estimate for closure, postclosure care, or corrective action, whichever is applicable. The financial test and a guarantee provided by a corporate parent, sibling or grandparent may not be combined if the financial statements of the two entities are consolidated.

b. Use of one mechanism for multiple facilities. An owner or operator may satisfy the requirements of this subrule for multiple MSWLFs by the use of one mechanism if the owner or operator ensures that the mechanism provides financial assurance for an amount at least equal to the current cost estimates for closure, postclosure care, or corrective action, whichever is applicable, for all MSWLFs covered.

c. Criteria. The language of the financial assurance mechanisms listed in this rule must ensure that the instruments satisfy the following criteria:

(1) The financial assurance mechanisms must ensure that the amount of funds assured is sufficient to cover the costs of closure, postclosure care, or corrective action for known releases, whichever is applicable;

(2) The financial assurance mechanisms must ensure that funds will be available in a timely fashion when needed;

(3) The financial assurance mechanisms must be obtained by the owner or operator prior to the initial receipt of solid waste and no later than 120 days after the corrective action plan has been approved by the department until the owner or operator is released from the financial assurance requirements; and

(4) The financial assurance mechanisms must be legally valid, binding, and enforceable under Iowa law.

d. No permit shall be issued by the department pursuant to Iowa Code section 455B.305 unless the applicant has demonstrated compliance with rule 567—113.14(455B).

113.14(8) Closure and postclosure accounts. The holder of a permit for an MSWLF shall maintain a separate account for closure and postclosure care as required by Iowa Code section 455B.306(8) “b.” The account shall be specific to a particular facility.

a. Definitions. For the purpose of this subrule, the following definitions shall apply:

“Account” means a formal, separate set of records.

“Current balance” means cash in an account established pursuant to this rule plus the current value of investments of moneys collected pursuant to subrule 113.14(8) and used to purchase one or more of the investments listed in Iowa Code section 12B.10(5).

“Current cost estimate” means the closure cost estimate prepared and submitted to the department pursuant to subrule 113.14(3) and the postclosure cost estimate prepared and submitted pursuant to subrule 113.14(4).

b. Moneys in the accounts shall not be assigned for the benefit of creditors except the state of Iowa.

c. Moneys in the accounts shall not be used to pay any final judgment against a permit holder arising out of the ownership or operation of the site during its active life or after closure.

d. Withdrawal of funds. Except as provided in paragraph 113.14(8) “e,” moneys in the accounts may be withdrawn without departmental approval only for the purpose of funding closure, including partial closure, or postclosure activities that are in conformance with a closure/postclosure plan which has been

submitted pursuant to paragraph 113.5(1)“i.” Withdrawals for activities not in conformance with a closure/postclosure plan must receive prior written approval from the department. Permit holders using a trust fund established pursuant to paragraph 113.14(6)“a” to satisfy the requirements of this subrule must comply with the requirements of subparagraph 113.14(6)“a”(6) prior to withdrawal.

e. Excess funds. If the balance of a closure or postclosure account exceeds the current cost estimate for closure or postclosure at any time, the permit holder may withdraw the excess funds so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

f. Initial proof of establishment of account. A permit holder shall submit a statement of account, signed by the permit holder, to the department by April 1, 2003, that indicates that accounts have been established pursuant to this subrule. Permit holders for new MSWLFs permitted after April 1, 2003, shall submit to the department prior to the MSWLF’s initial receipt of waste a statement of account, signed by the permit holder.

g. An account established pursuant to paragraph 113.14(6)“a” for trust funds or paragraph 113.14(6)“i” for local government dedicated funds also satisfies the requirements of this subrule, and the permit holder shall not be required to establish closure and postclosure accounts in addition to said financial assurance accounts. Accounts established pursuant to paragraph 113.14(6)“a” or 113.14(6)“i,” which are intended to satisfy the requirements of this subrule, must comply with Iowa Code section 455B.306(8)“b.”

h. Yearly deposits. Deposits into the closure and postclosure accounts shall be made at least yearly in the amounts specified in this subrule beginning with the close of the facility’s first fiscal year that begins after June 30, 2002. The deposits shall be made within 30 days of the close of each fiscal year. The minimum yearly deposit to the closure and postclosure accounts shall be determined using the following formula:

$$\frac{CE - CB}{RPC} \times TR = \text{yearly deposit to account}$$

Where:

“CE” means the current cost estimate of closure and postclosure costs.

“CB” means the current balance of the closure or postclosure accounts.

“RPC” means the remaining permitted capacity, in tons, of the MSWLF as of the start of the permit holder’s fiscal year.

“TR” is the number of tons of solid waste disposed of at the facility in the prior year.

i. Closure and postclosure accounts may be commingled with other accounts so long as the amounts credited to each account balance are reported separately pursuant to paragraphs 113.14(3)“a” and 113.14(4)“a.”

j. The department shall have full rights of access to all funds existing in a facility’s closure or postclosure account, at the sole discretion of the department, if the permit holder fails to undertake closure or postclosure activities after being directed to do so by a final agency action of the department. These funds shall be used only for the purposes of funding closure and postclosure activities at the site.

113.14(9) Amount of required financial assurance. A financial assurance mechanism established pursuant to subrule 113.14(6) shall be in the amount of the third-party cost estimates required by subrules 113.14(3), 113.14(4), and 113.14(5) except that the amount of the financial assurance may be reduced by the sum of the cash balance in a trust fund or local government dedicated fund established to comply with subrule 113.14(8) plus the current value of investments held by said trust fund or local government dedicated fund if invested in one or more of the investments listed in Iowa Code section 12B.10(5).

567—113.15(455B,455D) Variances. A request for a variance to this chapter shall be submitted in writing pursuant to 561—Chapter 10. Some provisions of this chapter are minimum standards required by federal law (see 40 CFR 258), and variances to such provisions shall not be granted unless they are as protective as the applicable minimum federal standards.

Appendix I
Constituents for Detection Monitoring¹

Inorganic Constituents:	
(1) Antimony	(Total)
(2) Arsenic	(Total)
(3) Barium	(Total)
(4) Beryllium	(Total)
(5) Cadmium	(Total)
(6) Chromium	(Total)
(7) Cobalt	(Total)
(8) Copper	(Total)
(9) Lead	(Total)
(10) Nickel	(Total)
(11) Selenium	(Total)
(12) Silver	(Total)
(13) Thallium	(Total)
(14) Vanadium	(Total)
(15) Zinc	(Total)
Organic Constituents:	
(16) Acetone	67-64-1
(17) Acrylonitrile	107-13-1
(18) Benzene	71-43-2
(19) Bromochloromethane	74-97-5
(20) Bromodichloromethane	75-27-4
(21) Bromoform; Tribromomethane	75-25-2
(22) Carbon disulfide	75-15-0
(23) Carbon tetrachloride	56-23-5
(24) Chlorobenzene	108-90-7
(25) Chloroethane; Ethyl chloride	75-00-3
(26) Chloroform; Trichloromethane	67-66-3
(27) Dibromochloromethane; Chlorodibromomethane	124-48-1
(28) 1,2-Dibromo-3-chloropropane; DBCP	96-12-8
(29) 1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4
(30) o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1
(31) p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7
(32) trans-1,4-Dichloro-2-butene	110-57-6
(33) 1,1-Dichloroethane; Ethylidene chloride	75-34-3
(34) 1,2-Dichloroethane; Ethylene dichloride	107-06-2
(35) 1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4
(36) cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
(37) trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5
(38) 1,2-Dichloropropane; Propylene dichloride	78-87-5
(39) cis-1,3-Dichloropropene	10061-01-5
(40) trans-1,3-Dichloropropene	10061-02-6
(41) Ethylbenzene	100-41-4

Organic Constituents:	
(42) 2-Hexanone; Methyl butyl ketone	591-78-6
(43) Methyl bromide; Bromomethane	74-83-9
(44) Methyl chloride; Chloromethane	74-87-3
(45) Methylene bromide; Dibromomethane	74-95-3
(46) Methylene chloride; Dichloromethane	75-09-2
(47) Methyl ethyl ketone; MEK; 2-Butanone	78-93-3
(48) Methyl iodide; Iodomethane	74-88-4
(49) 4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1
(50) Styrene	100-42-5
(51) 1,1,1,2-Tetrachloroethane	630-20-6
(52) 1,1,2,2-Tetrachloroethane	79-34-5
(53) Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4
(54) Toluene	108-88-3
(55) 1,1,1-Trichloroethane; Methylchloroform	71-55-6
(56) 1,1,2-Trichloroethane	79-00-5
(57) Trichloroethylene; Trichloroethene	79-01-6
(58) Trichlorofluoromethane; CFC-11	75-69-4
(59) 1,2,3-Trichloropropane	96-18-4
(60) Vinyl acetate	108-05-4
(61) Vinyl chloride	75-01-4
(62) Xylenes	1330-20-7

Notes:

¹This list contains 47 volatile organics for which possible analytical procedures provided in EPA Report SW-846 "Test Methods for Evaluating Solid Waste," third edition, November 1986, as revised December 1987, includes Method 8260; and 15 metals for which SW-846 provides either Method 6010 or a method from the 7000 series of methods.

²Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

³Chemical Abstracts Service registry number. Where "Total" is entered, all species in the groundwater that contain this element are included.

Appendix II

List of Hazardous Inorganic and Organic Constituents¹

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-	8100 8270	200 10
Acenaphthylene	208-96-8	Acenaphthylene	8100 8270	200 10
Acetone	67-64-1	2-Propanone	8260	100
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile	8015	100
Acetophenone	98-86-2	Ethanone, 1-phenyl-	8270	10
2-Acetylaminofluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluoren-2-yl-	8270	20
Acrolein	107-02-8	2-Propenal	8030 8260	5 100
Acrylonitrile	107-13-1	2-Propenenitrile	8030 8260	5 200
Aldrin	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4, 10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1α,4α,4aβ,5α,8α,8aβ)-	8080 8270	0.05 10
Allyl chloride	107-05-1	1-Propene, 3-chloro-	8010 8260	5 10
4-Aminobiphenyl	92-67-1	[1,1'-Biphenyl]-4-amine	8270	20
Anthracene	120-12-7	Anthracene	8100 8270	200 10
Antimony	(Total)	Antimony	6010 7040 7041	300 2000 30
Arsenic	(Total)	Arsenic	6010 7060 7061	500 10 20

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
Barium	(Total)	Barium	6010 7080	20 1000
Benzene	71-43-2	Benzene	8020 8021 8260	2 0.1 5
Benzo[a]anthracene; Benzanthracene	56-55-3	Benz[a]anthracene	8100 8270	200 10
Benzo[b]fluoranthene	205-99-2	Benz[e]acephenanthrylene	8100 8270	200 10
Benzo[k]fluoranthene	207-08-9	Benzo[k]fluoranthene	8100 8270	200 10
Benzo[ghi]perylene	191-24-2	Benzo[ghi]perylene	8100 8270	200 10
Benzo[a]pyrene	50-32-8	Benzo[a]pyrene	8100 8270	200 10
Benzyl alcohol	100-51-6	Benzenemethanol	8270	20
Beryllium	(Total)	Beryllium	6010 7090 7091	3 50 2
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2α,3β,4α,5β,6β)-	8080 8270	0.05 10
beta-BHC	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2β,3α,4β,5α,6β)-	8080 8270	0.05 20
delta-BHC	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2α,3α,4β,5α,6β)-	8080 8270	0.1 20
gamma-BHC; Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2α,3β,4α,5α,6β)-	8080 8270	0.05 20
Bis(2-chloroethoxy)methane	111-91-1	Ethane, 1,1 ¹ -[methylene bis(oxy)] bis[2-chloro-	8110 8270	5 10

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
Bis(2-chloroethyl) ether; Dichloroethyl ether	111-44-4	Ethane, 1,1 ¹ -oxybis[2-chloro-	8110 8270	3 10
Bis-(2-chloro-1-methylethyl) ether; 2,2 ¹ -Dichlorodiisopropyl ether; DCIP, see Note 7	108-60-1	Propane, 2,2 ¹ -oxybis[1-chloro-	8110 8270	10 10
Bis(2-ethylhexyl) phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	8060	20
Bromochloromethane; Chlorobromomethane	74-97-5	Methane, bromochloro-	8021 8260	0.1 5
Bromodichloromethane; Dibromochloromethane	75-27-4	Methane, bromodichloro-	8010 8021 8260	1 0.2 5
Bromoform; Tribromomethane	75-25-2	Methane, tribromo-	8010 8021 8260	2 15 5
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-	8110 8270	25 10
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester	8060 8270	5 10
Cadmium	(Total)	Cadmium	6010 7130 7131	40 50 1
Carbon disulfide	75-15-0	Carbon disulfide	8260	100
Carbon tetrachloride	56-23-5	Methane, tetrachloro-	8010 8021 8260	1 0.1 10
Chlordane	See Note 8	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	8080 8270	0.1 50
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-	8270	20
Chlorobenzene	108-90-7	Benzene, chloro-	8010	2

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
			8020 8021 8260	2 0.1 5
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chlor-α-(4-chlorophenyl)-α-hydroxy-, ethyl ester	8270	10
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	Phenol, 4-chloro-3-methyl-	8040 8270	5 20
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-	8010 8021 8260	5 1 10
Chloroform; Trichloromethane	67-66-3	Methane, trichloro-	8010 8021 8260	0.5 0.2 5
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-	8120 8270	10 10
2-Chlorophenol	95-57-8	Phenol, 2-chloro-	8040 8270	5 10
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-	8110 8270	40 10
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-	8010 8260	50 20
Chromium	(Total)	Chromium	6010 7190 7191	70 500 10
Chrysene	218-01-9	Chrysene	8100 8270	200 10
Cobalt	(Total)	Cobalt	6010 7200 7201	70 500 10
Copper	(Total)	Copper	6010 7210 7211	60 200 10
m-Cresol; 3-methylphenol	108-39-4	Phenol, 3-methyl-	8270	10

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
o-Cresol; 2-methylphenol	95-48-7	Phenol, 2-methyl-	8270	10
p-Cresol; 4-methylphenol	106-44-5	Phenol, 4-methyl-	8270	10
Cyanide	57-12-5	Cyanide	9010	200
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-	8150	10
4,4 ¹ -DDD	72-54-8	Benzene 1,1 ¹ -(2,2-dichloroethyl-idene) bis[4-chloro-	8080 8270	0.1 10
4,4 ¹ -DDE	72-55-9	Benzene, 1,1 ¹ -(dichloroethenyl-idene) bis[4-chloro-	8080 8270	0.05 10
4,4 ¹ -DDT	50-29-3	Benzene, 1,1 ¹ -(2,2,2-trichloroethylidene)bis[4-chloro-	8080 8270	0.1 10
Diallate	2303-16-4	Carbamothioic acid, bis(1-methyl-ethyl)-, S-(2,3-dichloro-2-propenyl) ester	8270	10
Dibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene	8100 8270	200 10
Dibenzofuran	132-64-9	Dibenzofuran	8270	10
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-	8010 8021 8260	1 0.3 5
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-	8011 8021 8260	0.1 30 25
1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	Ethane, 1,2-dibromo-	8011 8021 8260	0.1 10 5
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	8060 8270	5 10

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-	8010 8020 8021 8120 8260 8270	2 5 0.5 10 5 10
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	Benzene, 1,3-dichloro-	8010 8020 8021 8120 8260 8270	5 5 0.2 10 5 10
p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro-	8010 8020 8021 8120 8260 8270	2 5 0.1 15 5 10
3,3 ¹ -Dichlorobenzidine	91-94-1	[1,1 ¹ -Biphenyl]-4,4 ¹ -diamine, 3,3 ¹ -dichloro-	8270	20
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro-, (E)-	8260	100
Dichlorodifluoromethane; CFC 12	75-71-8	Methane, dichlorodifluoro-	8021 8260	0.5 5
1,1-Dichloroethane; Ethylidene chloride	75-34-3	Ethane, 1,1-dichloro-	8010 8021 8260	1 0.5 5
1,2-Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,1-dichloro-	8010 8021 8260	0.5 0.3 5
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	Ethene, 1,1-dichloro-	8010 8021 8260	1 0.5 5
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	Ethene, 1,2-dichloro-, (Z)-	8021 8260	0.2 5
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	Ethene, 1,2-dichloro-, (E)-	8010 8021 8260	1 0.5 5

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro-	8040 8270	5 10
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro-	8270	10
1,2-Dichloropropane; Propylene dichloride	78-87-5	Propane, 1,2-dichloro-	8010 8021 8260	0.5 0.05 5
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	Propane, 1,3-dichloro-	8021 8260	0.3 5
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	Propane, 2,2-dichloro-	8021 8260	0.5 15
1,1-Dichloropropene	563-58-6	1-Propene, 1,1-dichloro-	8021 8260	0.2 5
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-	8010 8260	20 10
trans-1,3-Dichloropropene	10061-02-6	1-Propene, 1,3-dichloro-, (E)-	8010 8260	5 10
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexa, chloro-1a, 2,2a,3,6,6a,7,7a-octahydro-, (1α, 2β, 2αα, 3β, 6β, 6αα, 7β, 7αα)-	8080 8270	0.05 10
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	8060 8270	5 10
0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	Phosphorothioic acid, 0,0-diethyl 0-pyrazinyl ester	8141 8270	5 20
Dimethoate	60-51-5	Phosphorodithioic acid, 0,0-dimethyl S- [2-(methylamino)-2-oxoethyl] ester	8141 8270	3 20
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-	8270	10
7,12-Dimethylbenz[a]anthracene	57-97-6	Benz[a]anthracene, 7,12-dimethyl-	8270	10

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
3,3 ¹ -Dimethylbenzidine	119-93-7	[1,1 ¹ -Biphenyl]-4,4 ¹ -diamine, 3,3 ¹ -dimethyl-	8270	10
2,4-Dimethylphenol; m-Xylenol	105-67-9	Phenol, 2,4-dimethyl-	8040 8270	5 10
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester	8060 8270	5 10
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-	8270	20
4,6-Dinitro-o-cresol 4,6-Dinitro-2-methylphenol	534-52-1	Phenol, 2-methyl-4,6-dinitro-	8040 8270	150 50
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro-	8040 8270	150 50
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-	8090 8270	0.2 10
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-	8090 8270	0.1 10
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	8150 8270	1 20
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester	8060 8270	30 10
Diphenylamine	122-39-4	Benzenamine, N-phenyl-	8270	10
Disulfoton	298-04-4	Phosphorodithioic acid, 0,0-diethyl S-[2-(ethylthio)ethyl] ester	8140 8141 8270	2 0.5 10
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	8080 8270	0.1 20
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	8080 8270	0.05 20

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
		thiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide,(3α,5α,6β,9β,9α)-		
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-3-dioxide	8080 8270	0.5 10
Endrin	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a, 7,7a-octahydro-, (1α,2β,2aβ,3α,6α, 6aβ,7β,7aα)-	8080 8270	0.1 20
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta[cd]pentalene- 5-carboxaldehyde,2,2a,3, 3,4,7-hexachlorodecahydro-, (1α,2β, 2aβ,4β,4aβ,5β,6aβ, 6bβ,7R)-	8080 8270	0.2 10
Ethylbenzene	100-41-4	Benzene, ethyl-	8020 8221 8260	2 0.05 5
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8015 8260 8270	5 10 10
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester	8270	20
Famphur	52-85-7	Phosphorothioic acid, 0-[4-[(dimethyl-amino)sulfonyl]phenyl] 0,0-dimethyl ester	8270	20
Fluoranthene	206-44-0	Fluoranthene	8100 8270	200 10
Fluorene	86-73-7	9H-Fluorene	8100 8270	200 10
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7, 8,8- heptachloro-	8080 8270	0.05 10

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
		3a,4,7,7a-tetrahydro-		
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro-, (1α,1bβ, 2α, 5α,5aβ, 6β, 6aα)	8080 8270	1 10
Hexachlorobenzene	118-74-1	Benzene, hexachloro-	8120 8270	0.5 10
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	8021 8120 8260 8270	0.5 5 10 10
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	8120 8270	5 10
Hexachloroethane	67-72-1	Ethane, hexachloro-	8120 8260 8270	0.5 10 10
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	8270	10
2-Hexanone; Methyl butyl ketone	591-78-6	2-Hexanone	8260	50
Indeno(1,2,3-cd)pyrene	193-39-5	Indeno(1,2,3-cd)pyrene	8100 8270	200 10
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-	8015 8240	50 100
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene,1,2, 3,4, 10,10- hexachloro-1,4,4a,5,8,8a-hexahydro-(1α,4α,4aβ,5β,8β,8aβ)-	8270 8260	20 10
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl-	8090 8270	60 10
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-	8270	10

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
		propenyl)-		
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	8270	20
Lead	(Total)	Lead	6010 7420 7421	400 1000 10
Mercury	(Total)	Mercury	7470	2
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-	8015 8260	5 100
Methapyrilene	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N ¹ -2-pyridinyl-N1/2-thienylmethyl)-	8270	100
Methoxychlor	72-43-5	Benzene, 1,1 ¹ -(2,2,2, trichloroethylidene)bis[4-methoxy-	8080 8270	2 10
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-	8010 8021	20 10
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-	8010 8021	1 0.3
3-Methylcholanthrene	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro- 3-methyl-	8270	10
Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	2-Butanone	8015 8260	10 100
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-	8010 8260	40 10
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester	8015 8260	2 30
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester	8270	10
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-	8270	10

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, 0,0-dimethyl	8140 8141 8270	0.5 1 10
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	2-Pentanone, 4-methyl-	8015 8260	5 100
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-	8010 8021 8260	15 20 10
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-	8010 8021 8260	5 0.2 10
Naphthalene	91-20-3	Naphthalene	8021 8100 8260 8270	0.5 200 5 10
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione	8270	10
1-Naphthylamine	134-32-7	1-Naphthalenamine	8270	10
2-Naphthylamine	91-59-8	2-Naphthalenamine	8270	10
Nickel	(Total)	Nickel	6010 7520	150 400
o-Nitroaniline; 2-Nitroaniline	88-74-4	Benzenamine, 2-nitro-	8270	50
m-Nitroaniline; 3-Nitroaniline	99-09-2	Benzenamine, 3-nitro-	8270	50
p-Nitroaniline; 4-Nitroaniline	100-01-6	Benzenamine, 4-nitro-	8270	20
Nitrobenzene	98-95-3	Benzene, nitro-	8090 8270	40 10
o-Nitrophenol; 2-Nitrophenol	88-75-5	Phenol, 2-nitro-	8040 8270	5 10
p-Nitrophenol; 4-Nitrophenol	100-02-7	Phenol, 4-nitro-	8040 8270	10 50
N-Nitrosodi-n-butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-	8270	10

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso-	8270	20
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-	8070	2
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-	8070	5
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine propyl-	621-64-7	1-Propanamine, N-nitroso-N-	8070	10
N-Nitrosomethylethalamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-	8270	20
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-	8270	40
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-	8270	10
Parathion	56-38-2	Phosphorothioic acid, 0,0-diethyl 0-(4-nitrophenyl) ester	8141 8270	0.5 10
Pentachlorobenzene	608-93-5	Benzene, pentachloro-	8270	10
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-	8270	20
Pentachlorophenol	87-86-5	Phenol, pentachloro-	8040 8270	5 50
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenyl)	8270	20
Phenanthrene	85-01-8	Phenanthrene	8100 8270	200 10
Phenol	108-95-2	Phenol	8040	1
p-Phenylenediamine	106-50-3	1,4-Benzenediamine	8270	10
Phorate	298-02-2	Phosphorodithioic acid, 0,0-diethyl S-	8140 8141	2 0.5

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
		[(ethylthio)methyl]ester	8270	10
Polychlorinated biphenyls; PCBs; Aroclors	See Note 9	1,1[prime]-Biphenyl, chloroderivatives	8080 8270	50 200
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	8270	10
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile	8015 8260	60 150
Pyrene	129-00-0	Pyrene	8100 8270	200 10
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-	8270	10
Selenium	(Total)	Selenium	6010 7740 7741	750 20 20
Silver	(Total)	Silver	6010 7760 7761	70 100 10
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	8150	2
Styrene	100-42-5	Benzene, ethenyl-	8020 8021 8260	1 0.1 10
Sulfide	18496-25-8	Sulfide	9030	4000
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	8150	2
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-	8270	10
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-	8010 8021 8260	5 0.05 5
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-	8010 8021	0.5 0.1

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
			8260	5
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	Ethene, tetrachloro-	8010 8021 8260	0.5 0.5 5
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-	8270	10
Thallium	(Total)	Thallium	6010 7840 7841	400 1000 10
Tin	(Total)	Tin	6010	40
Toluene	108-88-3	Benzene, methyl-	8020 8021 8260	2 0.1 5
o-Toluidine	95-53-4	Benzenamine, 2-methyl-	8270	10
Toxaphene	See Note 10	Toxaphene	8080	2
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-	8021 8120 8260 8270	0.3 0.5 10 10
1,1,1-Trichloroethane; Methylchloroform	71-55-6	Ethane, 1,1,1-trichloro-	8010 8021 8260	0.3 0.3 5
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-	8010 8260	0.2 5
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-	8010 8021 8260	1 0.2 5
Trichlorofluoromethane; CFC-11	75-69-4	Methane, trichlorofluoro-	8010 8021 8260	10 0.3 5
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-	8040 8270	5 10

Common Name ²	CAS RN ³	Chemical abstracts index name ⁴	Suggested Method ⁵	PQL (μg/L) ⁶
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-	8010 8021 8260	10 5 15
0,0,0-Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, 0,0,0-triethyl ester	8270	10
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Total)	Vanadium	6010 7910 7911	80 2000 40
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8260	50
Vinyl chloride; Chloroethene	75-01-4	Ethene, chloro-	8010 8021 8260	2 0.4 10
Xylene (total)	See Note 11	Benzene, dimethyl-	8020 8021 8260	5 0.2 5
Zinc	(Total)	Zinc	6010 7950 7951	20 50 0.5

Notes:

¹The regulatory requirements pertain only to the list of substances; the right-hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.

²Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

³Chemical Abstracts Service registry number. Where “Total” is entered, all species in the groundwater that contain this element are included.

⁴CAS index names are those used in the 9th Collective Index.

⁵Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 “Test Methods for Evaluating Solid Waste,” third edition, November 1986, as revised, December 1987. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.

⁶Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in groundwaters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure.

PQLs are based on 5 mL samples for volatile organics and 1 L samples for semivolatile organics. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

⁷This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2[sec]-oxybis[2-chloro- (CAS RN 39638-32-9).

⁸Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6). PQL shown is for technical chlordane. PQLs of specific isomers are about 20 µg/L by method 8270.

⁹Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor 1016 (CAS RN 12674-11-2), Aroclor 1221 (CAS RN 11104-28-2), Aroclor 1232 (CAS RN 11141-16-5), Aroclor 1242 (CAS RN 53469-21-9), Aroclor 1248 (CAS RN 12672-29-6), Aroclor 1254 (CAS RN 11097-69-1), and Aroclor 1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.

¹⁰Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.

¹¹Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p-xylene (CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7). PQLs for method 8021 are 0.2 µg/L for o-xylene and 0.1 for m- or p-xylene. The PQL for m-xylene is 2.0 µg/L by method 8020 or 8260.

These rules are intended to implement Iowa Code section 455B.304.

[Filed 11/21/02, Notice 9/18/02—published 12/11/02, effective 1/15/03]

[Filed 6/14/07, Notice 12/6/06—published 7/4/07, effective 10/1/07]¹

[Filed 12/10/08, Notice 6/4/08—published 12/31/08, effective 2/4/09]

[Editorial change: IAC Supplement 2/25/09]

[Filed ARC 2692C (Notice ARC 2539C, IAB 5/25/16), IAB 8/31/16, effective 10/5/16]

OBJECTION

At its February 6, 2009 meeting the Administrative Rules Review Committee voted to object to the provisions of ARC 7474B relating to the closure of existing landfills. This filing appears in IAB Vol. XXXI, No. 14 (12-31-2008). The committee takes this action pursuant to the authority of §17A.4(5).

This rulemaking attempted to resolve issues raised by a Committee objection imposed in December, 2007. Although the Commission has made a serious effort to resolve the issues surrounding the 2007 rulemaking, the Committee believes the main underlying issue in the 2007 objection remains: that ARC 7474B is unreasonable because projects that were designed and constructed in accordance with rules in effect at the time of construction cannot be required to be redesigned or reconstructed due to subsequent rule changes unless the department finds that such facilities are causing pollution. That principle was set out in a “grandfather” clause which first appeared in an earlier rule and while it remains in place it has been restricted in the current filing. This filing continues to impose new requirements on facilities properly designed, constructed and permitted under the earlier rules. The committee believes the right conferred in the earlier rule cannot be extinguished or conditioned.

Objection filed February 10, 2009

¹ Effective date delayed 70 days by the Administrative Rules Review Committee at its meeting held September 11, 2007.

CHAPTER 114
SANITARY LANDFILLS: CONSTRUCTION AND DEMOLITION WASTES

[Prior to 12/11/02, see 567—Chs 102, 103, 110]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—114.1(455B) Scope and applicability. This chapter details the plan and operating requirements for all sanitary landfills accepting only construction and demolition wastes. All sanitary landfills accepting only construction and demolition wastes must conform with the provisions of these rules. This chapter also pertains to the hydrologic monitoring system standards for these solid waste disposal facilities.

567—114.2(455B) Permit required. No public or private agency shall construct or operate a sanitary disposal project without first obtaining a permit from the director.

567—114.3(455B) Types of permits. There are four types of permits issued by the director.

114.3(1) *Sanitary disposal project permit.* This permit is issued by the director under the authority of Iowa Code section 455B.305 for sanitary disposal projects which comply with the requirements described in 567—Chapters 102 to 106, 109 to 116, and 118 to 122. Such permits are issued for a term of three years and are renewable for similar terms.

a. Applications for renewal shall be received at the department office at least 90 days before the expiration date of the existing permit on a form provided by the department.

b. The department shall conduct an inspection of the sanitary disposal project following receipt of the application for renewal. Following the inspection, the permit holder shall be notified of all measures needed to bring the sanitary disposal project into conformance with Iowa Code chapter 455B and these rules.

c. A permit shall be renewed when a properly completed application has been received and all corrective measures identified in 114.3(1) “*b*” have been completed.

114.3(2) *Temporary permit.* This permit is issued by the director under the authority of Iowa Code subsection 455B.307(1) for solid waste disposal sites which do not comply with the requirements of Iowa Code chapter 455B and these rules. Such permits are issued for a term of one year and are renewable. Temporary permits may be renewed if the director finds that the public interest will be best served by granting a renewal and the applicant has complied with the terms of the previous temporary permit.

a. Temporary permits shall incorporate as a condition a compliance schedule that specifies how and when the applicant will meet the requirements of Iowa Code chapter 455B and these rules.

b. The decision of the director whether to issue a temporary permit, which is discretionary, shall be a final decision. Once a temporary permit has been issued, it may be suspended or revoked only as provided in Iowa Code section 455B.305 and 567—Chapter 7.

114.3(3) *Developmental permit.* The director may issue a developmental permit for construction and operation of a sanitary disposal project which is not specifically described in these rules if the permit applicant demonstrates at a public hearing that the proposed project can provide satisfactory disposal of solid waste without adverse health-related or environmental effects.

a. No such permit shall be issued until the director, after public hearing, considers and approves the proposed project.

b. A developmental permit shall be issued for a term of no less than one year and no more than three years.

c. A developmental permit may be renewed if the director finds, following public hearing, that the sanitary disposal project provided satisfactory disposal of solid waste without adverse health-related or environmental effects over the term of the prior permit.

114.3(4) *Closure permit.* This permit is issued by the director under the authority of Iowa Code section 455B.305 for sanitary disposal projects which no longer accept solid waste. Such permits are issued for a term of 30 years. If the postclosure period is extended, the term of subsequent renewal of the permit will be determined on a site-specific basis. A sanitary disposal project shall require a closure permit until

the department determines that postclosure maintenance, postclosure monitoring, and operation of the required leachate control system are no longer necessary.

a. Application shall be filed at the time of department notification of intended closure as required by this rule.

b. The application for issuance of this permit shall be based on a previously approved comprehensive plan and other rules adopted pursuant to the authority of Iowa Code section 455B.306.

c. This permit shall require submission of an annual audit report detailing the status of the financial instrument and other funds as required to guarantee completion of postclosure and monitoring requirements.

d. This permit may be modified by the issuance of an amendment by the department. Requests for permit amendments may be initiated by the department or by the permit holder.

e. At the end of the applicable postclosure period, and upon satisfactory completion of all required postclosure activities as established by Iowa Code chapter 455B, written notification shall be issued by the director stating that a permit is no longer required for the facility.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—114.4(455B) Applications for permits.

114.4(1) *Application requirements for permits and renewals.* More information can be found in 567—subrule 102.2(1).

114.4(2) *Time limit on submittal of information.*

a. Sanitary disposal project permit applications. If an application for a sanitary disposal project permit is found by the department to be incomplete, the applicant will be notified of that fact and of the specific deficiencies. Thirty days following such notification, the application may be returned by the department as incomplete without prejudice to the applicant's right to reapply. The applicant may be granted, upon request, an additional 30 days to complete the application.

b. Application for renewal or amendment of a sanitary disposal project. If an application for a sanitary disposal project permit renewal or amendment is found by the department to be incomplete, the applicant will be notified of that fact and of the specific deficiencies. Thirty days following such notification, the application may be denied by the department.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—114.5(455B) Preparation of plans. All plans and specifications submitted in the application for a sanitary disposal project permit or a developmental permit shall be prepared in conformance with Iowa Code chapter 542B and shall be submitted in triplicate.

567—114.6(455B) Construction and operation. All sanitary disposal projects shall be constructed and operated according to the plans and specifications as approved by the department and the terms of the permit. The approved plans and specifications shall constitute a term of the permit.

567—114.7(455B) Compliance with rule changes.

114.7(1) *Design and construction.* Sanitary disposal projects designed and constructed in accordance with rules in effect at the time of construction shall not be required to be redesigned or reconstructed due to subsequent rule changes unless the department finds that such facilities are causing pollution. Such facilities shall be brought into compliance with rules in effect at the time of reconstructing, enlarging, or otherwise modifying the sanitary disposal project, or at the time of permit renewal.

114.7(2) *Operation.* If any new rule conflicts with an operating procedure prescribed in the engineering plans or the permit of a sanitary disposal project, the operation shall conform with the new rule.

567—114.8(455B) Amendments. Sanitary disposal project permits, temporary permits, and developmental permits may be modified by the issuance of an amendment by the department, except as provided in 114.7(1).

567—114.9(455B) Transfer of title and permit. If title to an operational sanitary disposal project is transferred, and the transferee desires to continue operation of the project, the transferee shall apply in writing to the department within 30 days of the transfer for a transfer of the permit.

114.9(1) The department shall transfer the permit when it determines that the sanitary disposal project is in compliance with Iowa Code chapter 455B and these rules and the terms of the permit, and that the transferee possesses the equipment and personnel to operate the project in conformance with Iowa Code chapter 455B and these rules and the terms of the permit.

114.9(2) No permit shall be valid after 60 days following transfer of title, unless the permit has been transferred by the department to the new titleholder pursuant to this rule.

567—114.10(455B) Permit conditions. Any permit may be issued subject to conditions specified in writing which are necessary to ensure that the sanitary disposal project can be constructed and operated in compliance with these rules.

567—114.11(455B) Effect of revocation. If a permit for a sanitary disposal project held by any public or private agency is revoked by the director, no new permit shall be issued to that agency for that disposal project for a period of one year from the date of revocation. Such revocation shall not prohibit the issuance of a permit for the disposal project to another public or private agency.

567—114.12(455B) Inspection prior to start-up. The department shall be notified when the initial construction of a sanitary disposal project has been completed in order that an inspection may be made to determine that the project is constructed as designed. No solid waste shall be accepted by a sanitary disposal project until that project has been inspected and approved by the department.

567—114.13(455B) Primary plan requirements for all sanitary disposal projects. Every application for any permit issued by the department shall include the following. In addition, every application shall include the particular information required by the chapter describing the type of project to be constructed.

114.13(1) The name, address and telephone number of:

- a. Owner of site where project will be located.
- b. Permit applicant.
- c. Official responsible for operation of project.
- d. Design engineer.
- e. Agency to be served by the project, if any.
- f. Responsible official of agency served, if any.

114.13(2) A legal description of the site.

114.13(3) A map or aerial photograph locating the boundaries of the site and identifying:

- a. North or other principal compass points.
- b. Zoning and land use within one-half mile.
- c. Haul routes to and from the site with load limits or other restrictions.
- d. Homes and buildings within one-half mile.
- e. Section lines or other legal boundaries.
- f. Any nearby runway used or planned to be used by turbojet or piston-type aircraft at FAA-certified airports.

114.13(4) Type, source, and expected volume or weight of waste to be handled per day, week or year.

114.13(5) An organizational chart.

114.13(6) A detailed description of the disposal process to be used.

114.13(7) A table listing the equipment to be used, its design capacities and expected loads.

114.13(8) A contingency plan detailing specific procedures to be followed in case of equipment breakdown, maintenance downtime, or fire in equipment or vehicles, including methods to be used to remove or dispose of accumulated waste.

114.13(9) Proof of the applicant's ownership of the site or legal entitlement to use the site for the disposal of solid waste for the term of the permit for which application is made.

114.13(10) Closure/postclosure plan.

- a. A closure/postclosure plan shall be submitted which:
 - (1) Details how and when the facility will be closed in accordance with applicable requirements of this chapter.
 - (2) Describes the proposed groundwater monitoring plan, leachate control system, and site inspection and maintenance activities necessary to comply with this chapter.
 - (3) States the name, address and telephone number of the person or office to serve as a contact with regard to the facility during the postclosure period.
 - b. The closure/postclosure plan shall be submitted at the time of the first permit renewal after January 15, 2003, but not less than 180 days prior to closure.
- 114.13(11)** Such other information as may be required by the director.

567—114.14(455B) Hydrologic monitoring system planning requirements.

114.14(1) All plans, specifications and other documentation required herein must be developed by an engineer registered in Iowa.

114.14(2) All sanitary disposal projects shall conduct a soil and hydrogeologic investigation which conforms to the requirements of this chapter. The purpose of soil and hydrogeologic investigation is to obtain data to determine potential routes of contaminant migration from a site via groundwater. The rules that follow set forth minimum requirements for such investigations. Additional work and use of other methods (e.g., geophysical techniques) are encouraged.

567—114.15(455B) Soil investigation.

114.15(1) *Soil borings.*

a. *Number of borings.* A sufficient number of soil borings shall be made to accurately identify the hydrogeologic variations of the site. For new sites, the minimum number of borings required is 10 for sites of less than 10 acres, 20 for sites of 10 to 50 acres, and 20 plus an additional boring for every 10 acres above 50 acres for sites larger than 50 acres. Fewer borings may be needed for existing sites, depending on previous work done at the site. Also, no borings will be required in existing fill areas. The department may require additional borings based on the geological complexity of the site.

b. *Depth of borings.* All borings must extend a minimum of 25 feet deep and at least 10 feet deep below the water table. However, borings in proposed fill areas shall be terminated 10 feet above the uppermost aquifer or be grouted to provide such separation. At least half the borings located outside the existing or proposed fill area shall extend 10 feet into the uppermost aquifer, 50 feet below the water table, or 10 feet into bedrock. At least one boring shall extend 10 feet into bedrock or 100 feet below the lowest ground surface elevation.

c. *Boring method.* Borings shall comply with the applicable portions of rule 567—114.23(455B). The preferred boring method is hollow stem auger, although it may be necessary to use other methods at greater depths and in bedrock. When wet drilling methods are used for boring in which monitoring wells or piezometers are installed, the drilling fluid and methods and development procedures shall be approved by and documented with the department.

d. *Assurance that soil boring samples have been taken at the site.* The soil boring samples must be kept by the permit applicant until the permit is issued and must be made available to the department if the department requests them.

114.15(2) *Soil samples.* Samples shall be collected at 5-foot intervals and at every change in stratum. These samples shall be obtained using a split spoon sampler and the procedures of the standard penetration test, conducted in accordance with American Society of Testing and Materials (ASTM) Standard D1586. This test simply counts the blows of a 140-pound hammer falling 30 inches on the sampler per foot penetration of the sampler. A minimum of one undisturbed Shelby tube sample shall be obtained in the uppermost cohesive stratum at or below the lowest depth at which solid waste will be disposed of. Shelby tube sampling shall be in accordance with ASTM Standard D1587. Samples shall be clearly marked, preserved, and maintained for future inspection. Samples selected for laboratory analysis shall be preserved and transported to the laboratory in accordance with ASTM Standard D422.

114.15(3) *Laboratory test of discrete soil samples.* Laboratory tests of discrete soil samples shall be conducted to correlate strata between soil borings, obtain permeability data on each stratum, and design monitoring wells.

a. Permeability tests. Permeability tests using a constant-head or falling-head permeameter shall be run on a minimum of one sample from each Shelby tube sample. Each sample shall be from a different soil boring representing a different area of the site.

b. Grain size distribution. Grain size distribution tests shall be conducted on a minimum of one sample from each distinct stratum. Analysis shall be conducted in accordance with ASTM Standards D422 and D1140. Estimates of permeability shall be developed for each sample tested based on grain size distribution and standard penetration blow counts.

567—114.16(455B) Hydrogeologic investigation.

114.16(1) *Groundwater level measurements.* The elevation of the water table shall be determined at or near the location of each soil boring which penetrates the water table. The water table may be determined using a completed water table monitoring well, or piezometer. The bottom of a piezometer used to measure water table elevation shall be no more than 5 feet below the water table.

The apparent horizontal groundwater flow direction should be determined based on water table measurements. Vertical groundwater flow shall then be assessed in at least two profiles approximately parallel to the apparent horizontal flow direction. Vertical groundwater flow shall be assessed using at least two well clusters per profile. Each well cluster shall contain a water table monitoring well or piezometer and additional water level monitoring points based on site conditions as follows:

a. If the water table is in the uppermost aquifer, one additional water level monitoring point shall be located near the base of the aquifer or at least 20 feet below the base of the water table monitoring point. This additional monitoring point may not be required if the aquifer is less than 20 feet thick.

b. If the uppermost aquifer is less than 50 feet below the water table, an additional water level monitoring point shall be located at the top of the aquifer.

c. If the uppermost aquifer is more than 50 feet below the water table, additional water level monitoring points shall be placed at depths of 30 feet and 50 feet below the water table.

d. If required, the one deeper soil boring into bedrock shall be used as a site for one well cluster. Water table monitoring points in this cluster shall correspond to the other well cluster used for a profile. In addition, water level monitoring points shall be placed at the bottom of the boring and, if possible, at the top and bottom of the uppermost aquifer. Groundwater level measurements shall be made after the water levels have stabilized in the monitoring point, at least 24 hours after completion and bailing of the monitoring well, or installation of the piezometer. The water level in existing wells shall be observed and recorded prior to bailing. Each set of water level measurements shall be made in as short a time frame as possible not to exceed 8 hours.

114.16(2) *In-situ permeability tests.* In-situ permeability tests shall be conducted on each monitoring well and piezometer in each well cluster.

a. Pumping test. If more than one monitoring point is located in the uppermost aquifer, a pumping test shall be conducted at one or more upper aquifer monitoring points. A pumping test involves pumping at a constant rate from one well while observing water levels in other wells. The pumping rate shall be as high as possible without dewatering the well. Water level measurements in other uppermost aquifer wells shall be measured at frequent intervals near the start of the test and then at progressively longer intervals (e.g., 1-minute intervals to 10 minutes, 5-minute intervals to an hour, 15-minute intervals to 2 hours, and half-hour intervals thereafter). Continuous water level recording is preferable.

Water levels in wells not located in the uppermost aquifer shall be recorded throughout the test at regular intervals (e.g., every half hour). Water levels in all wells shall be measured 24 hours prior to the test and just before the test. The test duration shall be at least 4 hours and continue until a stabilized drawdown condition is observed. Longer tests may be necessary if other uppermost aquifer monitoring points are slow to respond. Water level readings shall be recorded through the recovery phase of the water table.

b. Bail and slug tests. Monitoring wells and piezometers located in materials with low permeabilities shall be tested using bail or slug tests. These tests involve rapidly removing or adding a known volume of water to a well and then recording water levels in the well as the well recovers to its original level.

Typically, the necessary frequency of measurements will be similar to that required of pumping tests. In materials of very low permeability, less frequent measurements are necessary. In materials of higher permeability, more frequent measurements may be necessary.

567—114.17(455B) Hydrologic monitoring system planning report requirements. The hydrologic monitoring system planning report shall contain a description of field investigations and presentation of results including a description of the field and laboratory testing methods; a presentation of the test results and field measurements; documentation of a reasonable effort to inventory all active, unused, and abandoned wells within one mile of the facility; and the identification of all public water supply wells and wells with water withdrawal permits pursuant to 567—Chapters 50 to 52 within three miles of the facility. Well logs, other available information on well construction, static water levels, and usage shall be obtained. The well inventory shall be based on thorough reviews of state and local collections of well logs and, when possible, interviews or surveys of well owners. Also to be included are maps showing the location of soil borings, other field tests/measurements, and existing wells.

567—114.18(455B) Evaluation of hydrogeologic conditions.

114.18(1) Based on soil boring and other available information, a description of the site geology shall be made. This description shall include preparation of geologic cross sections of sufficient number and spacing (no fewer than four at every site) to adequately define all areas of the site and of sufficient detail to adequately depict major stratigraphic and structural trends and reflect geologic structural features in relation to groundwater flow. Each pair of cross sections must be as near to perpendicular as possible to adequately portray the site geology.

114.18(2) A description of the hydrogeologic unit(s) within the saturated zone shall be made including thickness; depth; hydraulic properties, such as transmissivity and storage coefficient or specific yield; description of the role of each as confining bed, aquifer, or perched saturated zone and its actual or potential use as a water supply aquifer.

114.18(3) All groundwater flow paths from the site shall be identified, including both horizontal and vertical components of flow. A contour map of the water table shall be presented showing horizontal flow paths. A potentiometric surface map of the uppermost aquifer showing horizontal flow paths shall also be presented, if different from the water table. Vertical flow paths shall be shown in at least two profiles approximately parallel to the direction of horizontal flow. Vertical flow paths shall be determined by water level measurements from clustered wells at different depths, if possible. An evaluation of vertical groundwater flow based on the hydrologic properties of the various strata encountered at the site, estimated groundwater flow and recharge rates, and known information on hydraulic head shall also be made.

114.18(4) The seasonal, temporal and artificially induced variations in groundwater flow shall be evaluated. Temporal variations occur due to natural events, such as rainfall. The addition of tile lines, removal of overburden, or deposition of wastes would constitute artificially induced variations.

114.18(5) Surface water flow paths from the site shall be identified on topographic contour maps.

567—114.19(455B) Monitoring system plan. A hydrologic monitoring system shall be designed to intercept the groundwater and surface water flow paths from the site. The plan shall include proposed locations and depths for monitoring wells in accordance with monitoring well siting criteria in rule 567—114.22(455B). Monitoring wells shall be designed in accordance with rule 567—114.23(455B). The surface water monitoring plan shall include monitoring points on all standing and flowing bodies of water which will receive surface runoff or groundwater discharge from the site. For streams, sampling points upstream and downstream of areas of potential impact from the site shall be selected.

567—114.20(455B) Sampling protocol. At a minimum, the sampling protocol must include the following:

1. Order in which monitoring points are to be sampled, all tests and procedures needed at each monitoring point and the order in which these procedures will be carried out, equipment and containers to be used, procedures and precautions for their use; precautions to avoid introducing contaminants from outside sources into monitoring wells or samples; and how equipment must be cleaned between uses;
2. Procedures for evacuating each monitoring well prior to each water quality sampling;

3. Procedures for handling field blanks and other quality assurance samples at the facility and in transit to and from the laboratory;
4. Procedures for field filtration of samples, if required;
5. Procedures for sample preservation;
6. Procedures for sample collection, labeling and handling at the facility and during transport to the laboratory;
7. Procedures for recording field observations and measurements;
8. Procedures for records maintenance and data analysis; and
9. Procedures for sampling surface water monitoring points including exact sampling locations and depths.

567—114.21(455B) Monitoring well maintenance and performance reevaluation plan.

114.21(1) A monitoring well maintenance and performance reevaluation plan shall be included as part of the hydrologic monitoring system plan. The plan shall ensure that all monitoring points remain reliable.

114.21(2) The plan shall provide for the following:

- a. A biennial examination of high and low water levels accompanied by a discussion of the acceptability of well location (vertically and horizontally) and exposure of the screened interval to the atmosphere.
- b. A biennial evaluation of water level conditions in the monitoring wells to ensure that the effects of waste disposal or well operation have not resulted in changes in the hydrologic setting and resultant flow paths.
- c. Annual measurement of well depths to ensure that wells are physically intact and not filling with sediment.
- d. Every five years conduct in-situ permeability tests on monitoring wells to compare test data with those collected originally to determine if well deterioration is occurring.

567—114.22(455B) Monitoring well siting requirements.

114.22(1) Downgradient monitoring wells. Downgradient monitoring wells must be located to provide a high level of certainty that releases of contaminants from the site can be promptly detected. Downgradient monitoring wells shall be placed along the site perimeter, within 50 feet of the planned liner or waste boundary unless site conditions dictate otherwise, downgradient of the facility with respect to the hydrologic unit being monitored. For those facilities which are long-term, multiphase operations, the department may establish temporary waste boundaries in order to define locations for monitoring wells. The convergence of groundwater paths to minimize the overall length of the downgradient dimension may be taken into consideration in the placement of downgradient monitoring wells.

114.22(2) Water table wells. At least three downgradient water table monitoring wells shall be installed at each facility. The maximum spacing between wells shall be 600 feet.

114.22(3) Uppermost aquifer monitoring wells. If different from water table monitoring wells, at least three uppermost aquifer monitoring wells shall be installed at each facility. Uppermost aquifer monitoring wells shall be spaced no more than 600 feet apart. If the uppermost aquifer is located more than 50 feet below the water table, this requirement may be relaxed, although at least one downgradient uppermost aquifer monitoring well will be required.

114.22(4) Other downgradient monitoring wells. Additional downgradient monitoring wells will be required if the water table and uppermost aquifer monitoring wells do not intercept most vertical flow paths from the site. In such situations, monitoring wells shall be placed at the appropriate depths to intercept the remaining flow paths and shall be spaced at no more than 600 feet apart.

114.22(5) Upgradient monitoring wells. Upgradient monitoring wells shall not be affected by the site. At least one upgradient monitoring well shall be installed into each stratum being monitored by downgradient monitoring wells. If it is not possible to actually locate a monitoring well upgradient of the site, the well shall be placed as near the site as feasible without being affected by the site.

114.22(6) Monitoring point identification system. The various types of monitoring points shall be identified as follows:

- a. Monitoring Well MW# _____

- b. Surface Water Monitoring Point SW# _____
- c. Piezometer PZ# _____

Each monitoring point must have a unique number, regardless of the type of monitoring point, and that number must never change.

567—114.23(455B) Monitoring well/soil boring construction standards.

114.23(1) General considerations.

a. Contractors involved in construction of monitoring wells and piezometers and soil boring activities shall be registered with the department as required in 567—Chapter 82.

b. To the extent possible, all monitoring well construction materials must not absorb, desorb, react or otherwise alter the screened soil stratum or the quality of the groundwater being sampled. Galvanized metal, glues, welding solvents, pipe thread lubricants and other foreign substances must not be used.

c. All monitoring well construction materials must be protected from contamination prior to installation.

d. A typical cross section of a properly constructed monitoring well is shown in Figure 1 at the end of this chapter.

114.23(2) Casings.

a. As a minimum, the diameter of the inner casing (see Figure 1) of a monitoring well must be at least 2 inches.

b. Plastic cased wells must be constructed of materials with threaded, nonglued joints which do not allow water infiltration under natural subsurface pressure conditions or when the well is evacuated for sampling.

c. Well casings must provide structural stability to prevent casing collapse during installation as well as drill hole integrity when installed. Flush joint casing is required for small diameter wells installed through hollow stem augers.

d. Well casings must be constructed of inert materials such as polytetrafluorethylene, stainless steel or polyvinyl chloride. The department may approve other casing materials if the owner or operator can demonstrate that the material has a low potential for biasing the water quality parameters of samples. The department may approve the construction of composite well casings (casings with less inert materials in the unsaturated zone).

114.23(3) Well screens.

a. Slot size will be based on sieve analysis of the sand and gravel stratum or filter pack. The slot size must hold out 35 percent to 60 percent of the formation material and not less than 90 percent of the filter pack.

b. Slot configuration and open area must permit effective development of the well.

c. Screen length. Maximum screen length shall be 10 feet except for water table wells in which the screen must be of sufficient length to accommodate expected seasonal fluctuations of the water table. The screen shall be placed 5 feet above and below the observed water table, unless local conditions are known to produce greater fluctuations. Screen length for piezometers shall be 2 feet or less. Multiple screened single-cased wells are prohibited.

114.23(4) Filter pack.

a. To prevent other materials from coming in contact with the well screen, the filter pack shall extend 18 inches above and 12 inches below the well screen.

b. Size must be based on sieve analysis of sand and gravel stratum. The filter pack material must be 2.5 to 3 times larger than 50 percent grain size of the zone being monitored.

114.23(5) Grouting.

a. The annular space above the filter pack must be sealed with expanding cement or bentonite grout. The vertical dimension of this seal must be a minimum of 3 feet.

b. The annular space between the seal and to just below the frostline must be backfilled with an impervious material such as bentonite grout or expanding cement.

c. The remaining annular space must be sealed with bentonite grout to the ground surface.

d. Grouting materials must be installed from the top of the filter pack up in one continuous operation with a tremie tube.

114.23(6) Well protection.

a. Plastic cased wells. A protective metal casing must be installed around the well casing. The inside diameter of the protective metal casing shall be at least 2 inches larger than the outside diameter of the well casing. The protective metal casing shall extend from a minimum of 1 foot below the frostline to slightly above the well casing top. The protective casing shall be shortened or omitted if it covers part of the well screen. The protective casing shall be sealed or immobilized with a concrete plug around the outside. The bottom of the concrete plug must extend at least 1 foot below the frostline. The concrete plug shall be shortened if it covers part of the well screen. The top of the plug shall be extended approximately 3 to 6 inches above the ground surface and shall slope away from the well approximately 3 feet. Soil may be placed above the plug. The inside of the protective casing shall be sealed with a bentonite grout. A vented cap shall be placed on the well casing and a protective locking cap on the metal casing. The lockable cap must be kept locked when the well is not in use.

b. Metal cased wells. The concrete plug shall be extended from at least 1 foot below the frostline to approximately 3 to 6 inches above the ground surface and sloped away from the well approximately 3 feet. Soil may be placed on top of the concrete plug. A vented, locking cap shall be placed on the casing. The lockable cap must be kept locked when the well is not in use. See Figure 1.

c. To protect against accidental damage, a ring of brightly colored posts or other protective devices must be installed around all wells.

114.23(7) Well drilling.

a. The owner or operator must ensure that in all phases of drilling, well installation and completion, the methods and materials used do not introduce substances that may alter the results of water quality analyses.

b. Well drilling equipment coming into contact with contaminants in the borehole or aboveground must be thoroughly cleaned to avoid spreading contamination to other depths or locations. Contaminated materials or leachate from wells must not be discharged onto the ground surface or into ponds or streams so as to cause environmental harm in the processes of drilling or well development.

c. The owner or operator must ensure that, at a minimum, the following well design and construction log information be retained at the site and a copy of this information be sent to the department:

- (1) Date/time of construction;
- (2) Name and address of the driller;
- (3) Drilling method and drilling fluid used;
- (4) Soil sampling methods;
- (5) Surveyed location (± 0.5 ft.);
- (6) Soil and rock classifications;
- (7) Field observations;
- (8) Well name/number;
- (9) Borehole diameter and well casing diameter;
- (10) Well depth (± 0.1 ft.);
- (11) Water level measurements;
- (12) Drilling and lithologic logs;
- (13) Casing materials, inside diameter and weight or wall thickness;
- (14) Screen materials;
- (15) Casing and screen joint type;
- (16) Screen slot size/length;
- (17) Filter pack material/size (depths from ____ to ____);
- (18) Filter pack volume;
- (19) Filter pack replacement method;
- (20) Sealant materials (depths from ____ to ____);
- (21) Sealant volume;
- (22) Sealant placement method;
- (23) Grouting schedule and materials;
- (24) Surface seal design/construction (depths from ____ to ____);

- (25) Type of protection well cap;
- (26) Ground surface elevation (± 0.1 ft.);
- (27) Well cap elevation (± 0.01 ft.);
- (28) Top of casing elevation (± 0.01 ft.); and
- (29) Detailed drawing of well (including dimensions).

114.23(8) *Well development.* Prior to use of the monitoring well for water quality monitoring purposes, well development is required to ensure the collection of representative groundwater samples. Procedures used in well development involve using a surge block, bailing or surging by pumping of compressed inert gas to produce a movement of water at alternately high and low velocities into and out of the well screen and gravel pack in order to loosen and remove fine materials. Development of low hydraulic conductivity wells may require the circulation of water down the well casing, out through the screen and gravel pack, and up the open borehole prior to the placement of grout or seal in the annulus. Any additional water used must be of a quality so as not to interfere with future groundwater quality determinations. Following surging, the well is pumped until the water does not contain significant quantities of suspended solids.

567—114.24(455B) Sealing abandoned wells and boreholes. Boreholes, piezometers and observation wells not used for groundwater monitoring must be sealed. The location of the abandoned well or borehole shall be documented in writing with reference to the landfill's coordinate system and method of sealing. The document must be retained at the landfill with a copy sent to the department.

114.24(1) *Sealing boreholes.* The borehole shall be filled by extending a tremie tube to the bottom of the hole. Bentonite or expanding cement grout shall be applied through the tube to the bottom of the hole and the tremie tube shall be raised as the hole is filled from the bottom upward. The end of the tremie tube shall be submerged in the grout while filling. The borehole shall be filled from the base of the boring all the way to the ground surface.

114.24(2) *Sealing abandoned monitoring wells.*

a. Well is known to be constructed properly with impermeable grout that was installed from the bottom up using a tremie tube. Any existing protective metal casing shall be removed by vertically pulling it off the well. With a tremie tube, the inner well casing shall be filled with an impermeable grout slurry from the bottom to ground surface. After 24 hours, the grout shall be retopped if it has settled below the existing ground surface.

b. Well construction is improper or undocumented. An attempt should be made to remove the well casing. If the well casing cannot be removed, the well casing shall either be drilled around with a hollow stem auger of large inside diameter or shall be drilled out with a standard casing bit or solid stem auger with a boring diameter greater than the initial diameter of the hole. Drilling shall be to the maximum depth of the previously drilled boring. The drilling debris shall be cleaned from the interior of the auger or borehole. The borehole shall be sealed with an impermeable grout using a tremie tube. If the soil conditions permit the sealing to be conducted in a continuous operation, the tremie tube shall be submerged in the grout at all times. After 24 hours, the grout shall be retopped if it has settled below the ground surface.

c. Monitoring wells in future fill areas. The well shall be removed and sealed as described in the procedures for sealing boreholes in 114.24(1).

567—114.25(455B) Variance from design, construction, and operation standards. Pursuant to the authority of Iowa Code section 455B.303, a variance from the specific requirements of rules 567—114.14(455B) to 567—114.25(455B) may be issued, modified, or denied by the director. The request shall also include any supporting information to be considered by the director in the formulation of a decision.

567—114.26(455B) General requirements for all sanitary landfills.

114.26(1) *Plan requirements.* The plans for all sanitary landfills shall include the following:

a. The map and aerial photograph required in subrule 114.13(3) of sufficient scale to show all homes, buildings, lakes, ponds, watercourses, wetlands, dry runs, rock outcroppings, roads and other applicable

details including topography and drainage patterns. All wells shall be identified on the map or aerial photograph and a bench mark shall be indicated.

b. A plot drawing in appropriate scale of the site and the immediately adjacent area showing dimensions, topography with appropriate contour intervals, drainage patterns, known existing drainage tiles, locations where any geologic samples were taken, all water wells with their uses, and present and planned pertinent features including but not limited to roads, fencing, and cover stockpiles.

c. Detailed engineering drawing of the site showing all initial and permanent roads, buildings and equipment to be installed; unloading and holding areas; fences and gates; landscaping and screening devices; personnel and maintenance facilities; and sewer and water lines.

d. A liner system that meets the following requirements, depending upon the type of waste material disposed of:

(1) Municipal solid waste landfills (MSWLFs) shall have a composite liner system consisting of two components. The upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil as specified in subparagraph 114.26(1)“d”(2). FML components consisting of high-density polyethylene (HDPE) shall be at least 60-mil thick. The FML must be installed in direct and uniform contact with the compacted soil component. The requirements for MSWLF facilities under this subparagraph were effective November 13, 1996, and apply to liner and cover systems that had not been installed by that date.

(2) Nonmunicipal solid waste landfills may utilize a liner system meeting 114.26(1)“d”(1) or shall have a soil liner consisting of at least four feet of recompacted soil. The description, source and volume of the material to be used for the landfill liner, including the method of installation, must be provided. The coefficient of permeability must be 1×10^{-7} cm/sec (0.00028 ft/day) or less as determined by appropriate laboratory analysis. The percent of standard or modified proctor density at moisture contents consistent with expected field conditions and corresponding to a measured coefficient of permeability equal to or less than 1×10^{-7} cm/sec shall be determined in the laboratory. The soil shall be placed in lifts not to exceed 8 inches in thickness. A minimum of one field density test shall be performed per lift per acre to verify that the density determined by the laboratory analysis as correlated to permeability has been achieved. Results of field density tests shall be submitted to the department prior to the placement of solid waste.

e. Alternative liner systems.

(1) The department may approve an alternative to the liner system specified in subparagraph 114.26(1)“d”(1) provided that the alternative liner system design has included certification by a professional engineer registered in Iowa stating that the proposed alternative liner system will ensure that the contaminant concentration values listed in federal regulations under 40 CFR 258, Subpart D, Table 1, will not be exceeded in the uppermost aquifer at the designated monitoring points of compliance as specified by the department.

This point of compliance shall be no more than 150 meters from the waste management boundary. This point of compliance is to be utilized for the purpose of certifying the alternative design only. All operational issues related to monitoring systems, compliance determinations, groundwater assessments, and remedial measures are governed by the appropriate relevant rules in this chapter and 567—Chapter 111. The certification shall be on a form furnished by the department which shall include space for identification of the sources of data utilized; formulas, models, tests or other methods utilized to determine contaminant concentrations at the points of compliance; and all references or guidance documents relied upon for the techniques or methods applied. A copy of all data utilized, formulas, models, tests or other methods utilized to determine contaminant concentrations at the point of compliance shall be placed in the facility's official files prior to operation of the landfill.

(2) An alternative liner system to that required in subparagraph 114.26(1)“d”(2) may be approved by the director if the design of the liner system is equivalent to the soil liner required in subparagraph 114.26(1)“d”(2) in performance, longevity and protection of the groundwater; or, based on the specific type of waste to be disposed of, the design of the liner system offers equivalent protection of the groundwater. Undisturbed soil will not be allowed for use as liner material.

f. Diversion and drainage structures designed to prevent ponding, infiltration, inundation, erosion, slope failure and washout from surface runoff due to a 25-year, 24-hour rainfall event, as shown in the department of agriculture and land stewardship publication "Climatology of Iowa Series #2-1980."

g. A leachate collection, storage and treatment and disposal system designed to protect the soils, surface water, and groundwater from leachate contamination. This system shall be designed to operate during the active life of the site and during the postclosure period required by Iowa Code section 455B.304.

(1) The design and construction of the system must be in accordance with subrule 114.26(3) and be coordinated with the planned phase development of the site and the timing of leachate generation.

(2) The potential for leachate generation shall be evaluated in determining the design for the facility.

(3) The plan must include proposed quality assurance and quality control testing to be performed during installation and operation of the system. This plan shall include procedures that will be followed during installation of the leachate collection system and during normal landfill operations to ensure the system's integrity and design standards.

h. A drawing of the scheme of development including any excavation, trenching, and fill shown progressively with time. The methods to be used to ensure compliance with the scheme and to provide vertical and horizontal controls shall be described.

i. Cross-sectional drawings showing progressively with time the original and proposed elevation of excavating, trenching, and fill.

j. Evidence that the proposed plan has been reviewed by the local soil conservation district commissioner and that the technical assistance of the soil conservation district will be utilized to facilitate compliance with wind and water soil loss limit regulations provided for in Iowa Code sections 467A.42 to 467A.51.

k. An ultimate land use proposal, including intermediate stages, with time schedules indicating the total and complete land use. Final elevations, grades, permanent drainage structures, monitoring or treatment facilities and permanent improvements of the completed landfill shall be included. Any supporting drawings to the ultimate land use proposal shall be in appropriate scale.

l. Information describing:

(1) Source, volume, and characteristics of cover material;

(2) Area of site in acres;

(3) Areas to be used for salvaging and the burning of diseased trees.

m. A report consisting of information verifying that the portion of the site to be filled is:

(1) So situated as to obviate any predictable lateral movement of significant quantities of leachate from the site to standing or flowing surface water or to shallow aquifers that are in actual use or are deemed to be of potential use as a water resource.

(2) So situated that the base of the proposed site is at least 5 feet above the high water table unless a greater separation is required to ensure that there will be no significant adverse effect on groundwater or surface waters or a lesser separation is unlikely to have a significant adverse effect on groundwater and surface waters.

(3) Outside a flood plain or shoreland, unless proper engineering and sealing of the site will render it acceptable and prior approval of the department under Title V of these rules and, when necessary, the U.S. Corps of Engineers is obtained.

(4) So situated to ensure no adverse effect on any well within 1,000 feet of the site existing at the time of application for the original permit which is being used or could be used without major renovation for human or livestock consumption or at least 1,000 feet from any such well unless hydrologic conditions are such that a greater distance is required to ensure no adverse effect on the well.

(5) So situated to ensure no adverse effect on the source of any community water system in existence at the time of application for the original permit within one mile of the site or at least one mile from the source of any community water system in existence at the time of application for the original permit unless hydrologic conditions are such that a greater distance is required to ensure no adverse effect on the water system.

(6) At least 20 feet from the adjacent property line unless there is a written agreement with the owner of the abutting property. The report shall verify that the portion to be filled is at least 50 feet from the

adjacent property line. The written agreement shall be filed with the county recorder and shall become a permanent record of the property.

(7) Beyond 500 feet from any existing habitable residence unless there is written agreement with the owner of the residence and the site is screened by natural objects, plantings, fences or by other appropriate means. The residence must be in existence on the date of application for the original permit from the department. The written agreement shall be filed with the county recorder and recorded for abstract of title purposes, and a copy submitted to the department.

n. Should conditions in violation of 114.26(1) “m”(1), (2), (3), (4), or (5) exist, the original plan shall detail how the site is to be engineered to provide equivalent protection to the water resources. The applicant shall have the burden of showing that equivalent protection will be provided.

o. If sewage sludge is to be disposed of at the site, the characteristics of the sludge and the method of disposal shall be described. If sludge is to be utilized for land application, such utilization shall be in conformance with 567—Chapter 67.

p. The required soil and hydrogeologic design information specified in rules 567—114.14(455B) through 567—114.25(455B).

q. Such additional data and information as may be deemed necessary by the director to evaluate a proposed sanitary landfill.

r. When a new landfill or lateral expansion is located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any airport runway end used by only piston-type aircraft, the plan must contain a notice that the landfill’s official files will include the following demonstration: that the site is designed and will be operated so that it does not pose a bird hazard to aircraft. For any new site or a lateral expansion within a five-mile radius of any airport runway end used for turbojet or piston-type aircraft, the plan must show that the Federal Aviation Administration has been notified. For existing landfills located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any runway end used by only piston-type aircraft, the owner or operator must prepare the demonstration required above in this paragraph and notify the director that it has been placed in the facility’s official files.

s. When a new landfill or lateral expansion is located within 200 feet of a fault that has had displacement in Holocene time, the plan must contain a notice that the facility’s official files will include the following demonstration: that an alternative setback distance of less than 200 feet will prevent damage to the structural integrity of the site and will be protective of human health and the environment.

t. When a new landfill or a lateral expansion is located in seismic impact zones, the plan must contain a notice that the facility’s official files will include the following demonstration: that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in the lithified earth material for the site.

u. When a new facility or lateral expansion is located in an unstable area, the plan must contain a notice that the facility’s official files will include the following demonstration: that engineering measures have been incorporated into the site design to ensure that the integrity of the structural components of the site will not be disrupted. The demonstration must consider the on-site or local soil conditions that may result in significant differential settling, on-site or local geologic or geomorphologic features, and on-site or local human-made features or events (both surface and subsurface). For existing facilities located in an unstable area, the owner or operator must prepare the above demonstration required in this paragraph and notify the director that it has been placed in the facility’s official files.

114.26(2) General operating requirements for all sanitary landfills. All sanitary landfills shall be operated in conformance with this subrule. The plan submitted shall detail how the sanitary landfill will comply with these requirements.

a. Solid waste shall be unloaded at the operating area only when an operator is on duty at that area. Solid waste may be deposited in storage containers inside the site under the supervision of an attendant or operator.

b. Access to the site shall be restricted, and a gate shall be provided at the entrance to the site and shall be kept locked when an attendant or operator is not on duty.

c. A copy of the permit, engineering plans and reports shall be kept at the site at all times unless the applicant demonstrates to the department that, on the basis of the characteristics of the waste to be handled at the site and the times of operation of the site, such is unnecessary.

d. Sites not open to the public shall have a permanent sign posted at the site entrance specifying:

- (1) Name of operation.
- (2) The site permit number.
- (3) That the site is not open to the public.
- (4) The name and telephone number of the responsible official.

e. Solid waste shall not be deposited in such a manner that material or leaching therefrom may cause pollution of groundwater or surface waters.

f. Provision shall be made for an all-weather fill area which is accessible for solid waste disposal during all weather conditions under which solid waste is received and disposed of at the site. Such all-weather areas shall be operated at all times in accordance with Iowa Code chapter 455B and these rules.

g. Provisions shall be made to have cover material available for winter and wet weather operations.

h. Each site shall be graded and provided with drainage facilities to meet the requirements of 114.26(1) "f" to minimize flow of surface water onto and into the portion of the site being filled and to prevent soil erosion and ponding of water.

i. The finished surface of the site shall be repaired as required, covered with soil, and seeded with native grasses or other suitable vegetation immediately upon completion or promptly in the spring on areas terminated during winter conditions. If necessary, seeded slopes shall be covered with straw or similar material to prevent erosion.

j. Each sanitary landfill shall be staked as necessary and inspected annually, or as otherwise specified in the permit, by a professional engineer registered in Iowa. A brief report by the engineer indicating areas of conformance or nonconformance with the approved plans and specifications shall be submitted to the department by the permit holder within 30 days of the inspections. In specifying alternate inspection frequencies, the department shall consider the types and quantities of waste disposed of, the rate of development of the site, the degree of control over site development inherent in the design and topography of the site and the quality of prior operation.

k. If any pockets, seams or layers of sand or other highly permeable material are encountered at the sanitary landfill, the permit holder shall promptly notify the department and shall ensure that a professional engineer registered in Iowa has certified that all sands encountered were totally excavated or sealed off properly or otherwise handled as explicitly provided for in the permit before solid waste is disposed of in that area of the site.

l. The total volume of leachate collected for each month shall be recorded, and the elevation of leachate in the landfill shall be provided to the department in accordance with the schedule specified in the permit.

114.26(3) Hydrologic monitoring system. The owner or operator of a solid waste disposal facility shall operate and maintain a hydrologic monitoring system which includes a sufficient number of groundwater monitoring wells and surface water monitoring points to determine the impact, if any, that the sanitary disposal project is having on the adjacent water. The hydrologic monitoring systems shall enable early detection of the escape of pollutants from a sanitary landfill.

The hydrologic monitoring system shall be planned, designed and constructed in accordance with the provisions of rules 567—114.14(455B) through 567—114.25(455B) and implemented in accordance with the following schedule:

a. A hydrologic monitoring system plan shall be submitted to the department for review and approval with any application for a new permit. Installation of the approved system shall be completed prior to the deposition of solid waste into the landfill.

b. A hydrologic monitoring system plan shall be submitted with applications for permit renewal, not later than the date of renewal, with completion of installation and operation within one year of approval of the plan. Installation of the plan shall be completed within one year of the date of department approval.

c. Upon notice by the department, a hydrologic monitoring system plan may be required to be submitted within six months of such notification, with completion of installation and operation of the approved plan within one year of the date of department approval.

114.26(4) Hydrologic monitoring system operating requirements.

a. *Operational sampling requirements.* All sampling shall be conducted in accordance with an approved sampling protocol, components of which are described in rule 567—114.20(455B).

b. *Groundwater levels.* The elevation of water in each monitoring well shall be measured monthly and recorded to the nearest 0.01 foot. Level measurements must be made before a well is evacuated for sample collection.

c. *Surface water levels.* The water level or flow rate of each surface water body sampled shall be measured and recorded at the time of sample collection.

d. *First-year water sampling.* During the first year of operation of the hydrologic monitoring system, a sample shall be collected quarterly from each groundwater monitoring well and surface water monitoring point. The purpose of this sample is to determine baseline water quality information and enable initial estimation of water quality variability. Each sample shall be analyzed for the following parameters in addition to the parameters listed in paragraph “e” of this subrule and any additional parameter deemed necessary by the department:

- (1) Arsenic, dissolved.
- (2) Barium, dissolved.
- (3) Cadmium, dissolved.
- (4) Chromium, total dissolved.
- (5) Lead, dissolved.
- (6) Mercury, dissolved.
- (7) Magnesium, dissolved.
- (8) Zinc, dissolved.
- (9) Copper, dissolved.
- (10) Benzene.
- (11) Carbon tetrachloride.
- (12) 1,2-Dichloroethane.
- (13) Trichloroethylene.
- (14) 1,1,1-Trichloroethane.
- (15) 1,1-Dichloroethylene.
- (16) Paradichlorobenzene.

e. *Routine semiannual water sampling.* After the first year, each monitoring point must be sampled semiannually as specified in the facility’s operation permit and analyzed for the following parameters:

- (1) Chloride.
- (2) Specific conductance (field measurement).
- (3) pH (field measurement).
- (4) Ammonia nitrogen.
- (5) Iron, dissolved.
- (6) Chemical oxygen demand.
- (7) Temperature (field measurement).
- (8) Any additional parameters deemed necessary by the department.

f. *Routine annual water sampling.* One sample per year from each monitoring point collected in a quarter specified in the facility’s operation permit must be analyzed for the following parameters:

- (1) Total organic halogen.
- (2) Phenols.
- (3) Any additional parameters deemed necessary by the department.

114.26(5) Laboratory procedures. The owner or operator of the solid waste facility must have the groundwater and surface water samples analyzed only by laboratories that are certified by the state of Iowa. Until the department adopts rules regarding certification of laboratories, analyses shall be conducted at a laboratory that certifies to the department that the appropriate analytical procedure is utilized.

All analyses of parameters not covered in the Safe Drinking Water Act (SDWA) must be performed according to methods specified in SW-846 or approved by the United States Environmental Protection Agency. Any analytical method used on non-SDWA parameters deviating from those specified in SW-846 or approved by EPA must be approved by the department.

All analyses must be recorded on forms which, in addition to the analytical results, show the precision of the data set, bias, and limit of detection.

114.26(6) *Analysis of sampling data.* For each parameter analyzed during the first year of operation of the hydrologic monitoring system, as listed in paragraph 114.26(4) “d” above, the mean and standard deviation for each upgradient monitoring well shall be determined using the first year of data. For routine semiannual monitoring parameters, as listed in paragraph 114.26(4) “e” above, mean and standard deviation shall be recalculated annually using all available analytical data. If the analytical results for a downgradient monitoring point do not fall within the control limits of two standard deviations above the mean parameter(s) level in a corresponding upgradient monitoring point, the owner or operator shall submit this information to the department within 30 days of receipt of the analytical results. If the analytical results from an upgradient monitoring point do not fall within two standard deviations of the mean parameter(s) level for that monitoring point, the department shall also be notified within 30 days.

114.26(7) *Additional sampling.* The department will determine if additional sampling is warranted, after receipt of information indicating a possible release as required in subrule 114.26(6) above. The department may require any additional samples to be split and analyzed to determine if the values obtained outside the control limits were the result of laboratory or sampling error. Any additional analytical results shall be submitted to the department by the owner or operator within seven days of receipt. The department will review the information and determine if additional monitoring or preparation of a groundwater quality assessment plan, in accordance with subrule 114.26(9), is necessary.

114.26(8) *Record keeping and recording.*

a. The persons conducting the sampling must record the procedures, measurements, and observations at the time of sampling. The field records must be sufficient to document whether the procedures and requirements specified in the sampling protocol have been followed. The records must also contain the names of the persons conducting the sampling, the time and date each monitoring point was sampled, and the required field measurement or test result. The owner or operator must submit copies of these field records to the department if requested.

b. The owner or operator shall keep records of analyses and the associated groundwater surface elevations for the active life and postclosure period of the facility. These records shall be kept at the site or in the administrative files of the owner or operator and shall be available for review by the department upon request in the county in which the landfill is located.

c. The owner or operator shall provide the department with copies of the quarterly monitoring analytical results by the dates specified in the facility’s operation permit.

d. An annual report summarizing the effect of the facility on groundwater and surface water quality shall be submitted to the department by November 30 each year. The summary is to be prepared by an engineer registered in the state of Iowa and incorporated in the November semiannual engineer inspection report. The contents of this summary are to include the following items:

- (1) Amounts and kinds of wastes accepted under Special Waste Authorizations.
- (2) A narrative describing the effects of the facility on surrounding surface water and groundwater quality and any changes made or maintenance needed in the monitoring network.
- (3) Graphs showing concentrations versus time for all monitoring parameters for each well for as long as records exist for that parameter. Control limits (— two standard deviations from the initial background value) must be shown in each graph.
- (4) Results of activities and tests required by the well maintenance and performance reevaluation plan described in rule 567—114.21(455B).

114.26(9) *Groundwater quality assessment plan.*

a. If leachate migration occurs, the owner or operator, as required by the department, shall develop and submit for approval a specific plan to conduct a groundwater quality assessment study at the facility to

determine the rate of migration and the extent and constituent composition of the leachate release. At a minimum, the assessment monitoring plan must contain the following elements:

- (1) Discussion of the hydrogeologic conditions at the site with an identification of potential contaminant pathways.
 - (2) Description of the present detection monitoring system.
 - (3) A description of the approach the owner or operator will take to substantiate any contention that the contamination may have been falsely indicated.
 - (4) Description of the investigatory approach used to characterize the rate and extent of leachate migration.
 - (5) Discussion of the number, location and depth of wells that will be initially installed as well as a strategy for installing more wells in subsequent investigatory phases.
 - (6) Information on well design and construction.
 - (7) Description of the sampling and analytical program used to obtain and analyze groundwater monitoring data.
 - (8) Description of data collection and analysis procedures.
 - (9) Schedule for the implementation of each phase of the assessment study.
- b. After the plan has been approved by the department, the owner or operator shall implement the plan according to the schedule in the plan.
- c. Within 90 days after the activities prescribed in the groundwater assessment plan have been completed, the owner or operator shall submit a written groundwater quality assessment report to the department.
- d. If the department determines that no waste or waste constituents from the facility have entered the groundwater, the owner or operator shall reinstate the routine monitoring program.

If the department determines that waste or waste constituents have been released from the facility and have entered the groundwater, the owner or operator shall continue to make the determinations described by the assessment plan and develop a remedial action/mitigation plan to alleviate or reduce contamination to the fullest extent possible.

114.26(10) *Postclosure monitoring requirements.*

- a. At least six months prior to closing the site, the owner or operator of a sanitary landfill shall submit a plan to the department for approval detailing a 30-year postclosure monitoring program.
- b. The department will review the facility's postclosure monitoring records at five-year intervals to determine if changes in the monitoring frequencies or parameters are required.
- c. The commission may adopt rules on a site-specific basis identifying additional monitoring requirements for sanitary landfills for which the postclosure monitoring period is to be extended.

114.26(11) *Leachate control systems for new landfills.* Every new landfill must have a leachate collection, storage, and treatment and discharge system in place prior to accepting waste. This system shall be operated in conformance with the approved design during the active life of the site and during the postclosure period.

a. *Leachate collection system.*

- (1) The leachate collection system shall be designed to allow not more than 1 foot of head above the top of the landfill liner. The collection system must include a method for measuring the leachate head in the landfill at the lowest area(s) of the collection system.
- (2) The landfill liner must be graded toward the leachate collection pipe at a slope greater than 2 percent, but not to exceed 10 percent. The side slopes of the landfill liner must be less than 25 percent.
- (3) A drainage layer must be placed immediately above the landfill liner. This drainage layer shall consist of a minimum of 1 foot of soil with a coefficient of permeability of 1×10^{-3} cm/sec (2.8 ft/day) or greater.
- (4) Leachate collection pipe shall be placed in a trench excavated a minimum of 18 inches into the liner. The liner system beneath the trench shall meet the applicable requirements specified under 114.26(1) "d."
- (5) Leachate collection pipe shall be surrounded by a gravel protection and drainage layer, and by either a graded filter layer or by a geotextile filter fabric.

(6) The collection pipe must be covered with a filter material to encourage flow and to prevent infiltration of fine-grained materials into the pipe. The collection pipe must be perforated or slotted, of a sufficient diameter to handle the expected flow, but not less than 4 inches in inside diameter; capable of being cleaned throughout the active life of the site and during the postclosure period; chemically resistant to the wastes and the expected leachate; and of sufficient strength to support maximum static and dynamic loads imposed by the overlying wastes, cover materials, and equipment used during the construction and operation of the site. Documentation shall be submitted which includes methods and specifications for cleaning of the pipes, chemical compatibility of the pipes, and calculations and specifications for pipe strength.

(7) The leachate collection system shall be equipped with valves to enable the flow of leachate from the facility to be shut off during periods of maintenance.

(8) The leachate collection system shall be cleaned out once every three years, or more frequently if leachate head or the volume of leachate collected indicates cleanout is necessary. A report of the methods and results of the cleanout shall be submitted at the time of permit renewal.

b. Leachate storage system. The leachate storage system must be:

(1) Capable of storing at least seven days' accumulation of leachate based on mathematical simulated volume using average precipitation; and

(2) Constructed of materials which are compatible with the expected leachate; and

(3) Accessible at all times of the year and under all weather conditions.

c. Leachate treatment and disposal system.

(1) Leachate shall be treated by such physical, chemical or biological processes as necessary to meet the pretreatment limits, if any, imposed by a treatment agreement between the landfill and a publicly owned treatment works, or by the effluent discharge limitation established by an NPDES permit issued to the landfill.

(2) Leachate recirculation systems shall be designed to minimize detrimental effects to vegetative cover, to minimize erosion and damage to the soil cover, and to promote rapid stabilization of the waste. Such systems shall not be allowed for sites which do not satisfy all of the requirements of 114.26(11).

(3) All leachate treatment systems, except as described in (2) above, shall conform to wastewater treatment design standards as established by the department.

d. Inspection prior to start-up. The department shall be notified when the initial construction of the leachate collection, storage, and treatment and discharge system has been completed in order that an inspection may be made to determine that the leachate control system is constructed as designed. Prior to this inspection, construction certification reports from the project engineer must be submitted discussing quality assurance and quality control testing done to ensure that all materials and equipment for the leachate control system have been placed in accordance with the approved engineering plans, reports and specifications. The results of all testing must be included, along with documentation of any failed tests, a description of the procedures used to correct the failures, and results of any retesting performed. This inspection may be incorporated with the inspection required by rule 567—114.12(455B).

114.26(12) *Leachate control systems for existing landfills.*

a. All existing landfills must submit a leachate control plan, as described in paragraph “b” below, when any of the following occur:

(1) At the time of permit renewal;

(2) When requesting a change in the existing permit for expansion or modification of the waste fill area;

(3) Within 180 days of notification by the department of the detection of any leachate seep or contamination of the groundwater or surface waters from leachate; or

(4) At least 180 days prior to landfill closure.

b. The design of the leachate control system must include leachate collection, storage, and treatment and disposal.

(1) New fill areas of a landfill that have not previously received waste must address the design standards of subrules 114.26(1) and 114.26(11).

(2) Existing fill areas must address the design standards of subrule 114.26(11), except paragraph “a,” subparagraphs (1) to (4). The leachate collection system must be designed to achieve the lowest possible leachate head above the landfill liner and must include a method of measuring the leachate head.

c. The leachate control plan must be implemented within one year of departmental approval of the leachate control plan.

114.26(13) Closure requirements. The owner or operator of the landfill must close the site in a manner that minimizes the potential for postclosure release of pollutants to the air, groundwater or surface waters.

a. A minimum of two permanent surveying monuments must be installed by a registered land surveyor from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the postclosure period.

b. The final cover of a nonmunicipal solid waste landfill shall consist of:

(1) Not less than 2 feet of compacted soil. The permeability must be 1×10^{-7} cm/sec or less as determined by appropriate laboratory analysis. The percent of standard or modified proctor density at moisture content consistent with expected field conditions and corresponding to a measured coefficient of permeability equal to or less than 1×10^{-7} cm/sec shall be determined in the laboratory. The soil shall be placed in lifts not to exceed 8 inches in thickness. A minimum of one field density test shall be performed per lift per acre to verify that the density determined by the laboratory analysis as correlated to permeability has been achieved. Results of field density tests shall be submitted to the department. The compacted soil shall be keyed into the bottom liner at the waste cell boundary.

(2) Not less than 2 feet of uncompacted soil, containing sufficient organic matter to support vegetation. The thickness of this soil layer must be at least the root depth of the planned vegetative cover to prevent root penetration into the underlying soil layers. This layer shall be placed as soon as possible to prevent desiccation, cracking and freezing of the compacted soil layer described in 114.26(13) “b”(1).

(3) A layer of compacted soil, incinerator ash, or similar material permitted by the department may be used to prepare the site for placement of the compacted soil layer described in 114.26(13) “b”(1). The use of such material will not serve as a replacement for the compacted soil layer described in 114.26(13) “b”(1).

(4) Alternate methods and materials may be permitted if shown to provide equal or superior performance.

c. The final cover for a municipal solid waste landfill shall consist of:

(1) An erosion layer underlaid by an infiltration layer. The infiltration layer must be comprised of a minimum of 18 inches of earthen material that has a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less. The erosion layer must consist of a minimum of 6 inches of earthen material that is capable of sustaining native plant growth.

(2) The department may approve an alternate final cover design that includes an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified above in subparagraph (1) and an erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified above in subparagraph (1).

d. Those portions of existing landfills demonstrating placement of final cover in conformance with previously approved plans and specifications or regulations in effect at the time of such approval shall not be required to apply additional cover solely to achieve compliance with 114.26(13) “b” and “c.” Those areas of existing landfills which have not been completed in conformance with the exemptions provided herein prior to January 15, 2003, shall complete all such areas in conformance with an approved closure plan pursuant to subrule 114.13(10) which shall include compliance with the provisions of 114.26(13) “b” and “c.” This paragraph shall not preclude a requirement to provide additional cover to such exempted areas as a result of the conclusions of a groundwater assessment or remedial action plan.

e. The final cover shall be designed and graded to meet the drainage requirements of 114.26(1) “f.” The final cover must have a minimum slope of 5 percent, and shall not exceed a slope of 25 percent. Those portions of existing landfills demonstrating placement of final cover in conformance with previously approved plans and specifications shall not be required to reconstruct the cover to meet either the minimum

or maximum slope established by this subrule. Those areas which have not been completed by placement of final cover pursuant to this exemption on January 15, 2003, shall be completed in conformance with an approved closure plan pursuant to subrule 114.13(10) and shall meet the minimum and maximum slope requirements stated herein. This subrule shall not preclude a requirement to modify the slope of any portion of the landfill as a result of the conclusion of a groundwater assessment or remedial action plan.

f. The final cover shall be seeded with native grasses or other suitable vegetation as soon as practical upon completion to prevent soil erosion. If seeding must be delayed due to summer or winter conditions, silt fences or other structures shall be used to minimize erosion of the final cover until the next season suitable for planting. The placement of cover in conformance with 114.26(13)“*b*” and “*c*” shall not be delayed due to season and shall be placed as soon as the solid waste has reached its maximum design elevation within the cell. Vegetation type shall be based on density and root depth, nutrient availability, soil thickness, and soil type. Alternatives to vegetative cover may be considered to control erosion and promote runoff.

g. An approved groundwater monitoring system as required by the closure permit and the rules must be in place and operating.

h. An approved leachate collection and treatment system as required by the closure permit and the rules must be in place and operating.

i. An approved landfill gas monitoring and collection or ventilation system as required by the closure permit and the rules must be in place and operating unless determined not to be necessary by the director.

j. An approved financial assurance instrument, adequate to cover costs of all postclosure activities as required by the closure plan and the closure permit, must be provided upon promulgation of the appropriate rules.

k. All requirements of the closure plan, the closure permit, and the rules must be satisfied.

114.26(14) *Postclosure requirements for 30 years following closure of the site.* The owner or operator of the site must comply with all postclosure requirements.

a. The diversion and drainage system as required in 114.26(1)“*f*” must be maintained to approved specifications to prevent run-on and runoff from eroding or otherwise damaging the final cover.

b. The integrity and effectiveness of the final cover must be maintained by making repairs as necessary to correct the effects of settling, subsidence, erosion, or other events. If damage to the compacted soil layer described in 114.26(13)“*b*”(1) occurs, repairs shall be made to correct the damage and return it to its original specifications.

c. The vegetative cover shall be reseeded as necessary to maintain good vegetative growth. Any invading vegetation whose root system could damage the compacted soil layer shall be removed or destroyed immediately.

d. The groundwater monitoring system shall be operated and maintained and shall comply with all applicable rules and closure permit requirements.

e. The leachate collection, removal and treatment systems shall be operated and maintained and shall comply with all applicable rules and closure permit requirements.

f. The landfill gas monitoring and collection systems shall be operated and maintained and shall comply with all applicable rules and closure permit requirements.

g. Semiannual reports shall be submitted to the department. These reports shall contain information concerning the general conditions at the site, groundwater monitoring results, amount of leachate collected and treated, information concerning the landfill gas monitoring and collection system, and other information as may be required by the closure permit. In addition, locations and elevations of all permanent monuments, required in 114.26(13)“*a*,” shall be determined at least once every three years or more frequently in the event of obvious disturbance of the monument. The reports are due by April 30 and October 31 for the preceding six-month period.

h. The permanent surveying monuments required in 114.26(13)“*a*” shall be maintained.

114.26(15) *Control of explosive gases.*

a. Owners or operators of all sanitary landfills must ensure that:

(1) The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane gas in facility structures (excluding gas control or recovery system components); and

(2) The concentration of methane gas does not exceed the lower explosive limit for methane gas at the facility property boundary.

b. Owners or operators of all sanitary landfills must monitor quarterly for compliance with paragraph “a” of this subrule. An annual report shall be submitted by November 30 summarizing the methane gas monitoring results and any action taken resulting from gas levels exceeding the limits during the previous year.

c. If methane gas levels exceeding the limits specified in paragraph “a” of this subrule are detected, the owner or operator must:

(1) Immediately take all necessary steps to ensure protection of human health and notify the director;

(2) Within seven days after detection, submit to the director a report stating the methane gas levels detected and a description of the steps taken to protect human health;

(3) Within 60 days of detection, implement a plan for remediation of the methane gas releases and send a copy of the remediation plan to the director. The plan shall describe the nature and extent of the problem and the proposed remedy.

567—114.27(455B) Operating requirements for all sanitary disposal projects. Every application for any permit issued by the department shall detail the means by which the applicant will comply with the following operating requirements. All sanitary disposal projects shall be operated in conformance with these requirements.

114.27(1) Open burning shall be prohibited except when permitted by 567—Chapter 23. Any burning to be conducted at the site shall be at a location that is separate and distinct from the operating area.

114.27(2) Litter shall be confined to the property on which the sanitary disposal project is located. At the conclusion of each day of operation, any litter strewn beyond the confines of the operating area shall be collected and stored in covered leakproof containers or properly disposed of.

114.27(3) Scavenging shall be prohibited. Any salvaging to be conducted must be described in the permit application, and all salvaged materials must be stored and removed from the sanitary disposal project site in conformance with the permit conditions.

114.27(4) Effective means shall be taken to control flies, other insects, rodents and other vermin.

114.27(5) Equipment designated in the plans and specifications or equivalent equipment shall be used to operate the site at all times.

114.27(6) The major internal roads shall be of all-weather construction and maintained in good condition. Dust shall be controlled on internal roads.

114.27(7) Sites open to the public shall have a permanent sign posted at the site entrance specifying:

a. Name of the operation.

b. The site permit number.

c. The hours and days the site is open to the public.

d. The categories of waste which will be accepted for disposal or, as an alternative, the identification of the categories of waste which are prohibited.

e. Telephone number of official responsible for the operation.

114.27(8) Free liquids or waste containing free liquids. No free liquids or waste containing free liquids shall be disposed of in a sanitary landfill.

114.27(9) General closure requirements.

a. The owner or operator shall notify the department in writing at least 180 days prior to closure of the facility or suspension of operations.

b. Notice of closure shall be posted at the facility at least 180 days prior to closure indicating the date of closure and alternative solid waste management facilities. Notice of closure shall also be published at least 180 days prior to closure in a newspaper of local circulation. This notice shall include the date of closure and alternative solid waste management facilities.

c. Implementation of the closure/postclosure plan shall be completed within 90 days of the closure of the facility. The owner and an engineer registered in Iowa shall certify that the closure/postclosure plan has been implemented in compliance with the rules, the closure/postclosure plan and the permit.

d. Upon completion of closure activities, the following documentation shall be submitted: as-built plans showing changes from the original design plans; test results indicating compliance with final cover as applicable, waste removal, equipment decontamination; a copy of the notation filed with the county recorder; and other forms of documentation as required.

567—114.28(455B) Specific requirements for a sanitary landfill proposing to accept only construction and demolition waste.

114.28(1) *Plan requirements.* The plans for sanitary landfills proposing to accept only construction and demolition waste shall include the following information in addition to that required by rules 567—114.2(455B) through 567—114.13(455B), 567—114.27(455B), 567—114.29(455B) and 567—114.30(455B) and subrule 114.26(1).

114.28(2) *Specific operating requirements for sanitary landfills proposing to accept only construction and demolition waste.* Sanitary landfills accepting only construction and demolition waste shall be operated in conformance with rules 567—114.2(455B) through 567—114.13(455B), 567—114.27(455B), 567—114.29(455B) and 567—114.30(455B), subrule 114.26(2), and this subrule. The plan submitted shall detail how the sanitary landfill will comply with these requirements.

a. Immediately after solid waste is deposited, it shall be uniformly distributed and compacted as densely as practical.

b. The waste shall be covered with a minimum of 1 foot of earth at least once every seven days of operation. The day during which cover will be applied shall be specified in the plan.

c. At least a 2-foot cover of compacted earth shall be applied to any area of the sanitary landfill which will not be utilized for further disposal of solid waste for more than two months. The cover shall be graded to allow surface water runoff.

d. The final cover shall be consistent with the proposed land use but in no event shall the cover be less than 2 feet.

567—114.29(455B) Operator certification. Sanitary landfill operators shall be trained, tested, and certified by a department-approved certification program.

114.29(1) A sanitary landfill operator shall be on duty during all hours of operation of a sanitary landfill, consistent with the respective certification.

114.29(2) To become a certified operator, an individual shall complete a basic operator training course that has been approved by the department or an alternative, equivalent training approved by the department and shall pass a departmental examination as specified by this rule. An operator certified by another state may have reciprocity subject to approval by the department.

114.29(3) A sanitary landfill operator certification is valid until June 30 of the following even-numbered year.

114.29(4) Basic operator training course. The required basic operator training course for a certified sanitary landfill operator will have at least 25 contact hours and will address the following areas, at a minimum:

- a. Description of types of wastes;
- b. Interpreting and using engineering plans;
- c. Construction surveying techniques;
- d. Waste decomposition processes;
- e. Geology and hydrology;
- f. Landfill design;
- g. Landfill operation;
- h. Environmental monitoring;
- i. Applicable laws and regulations;
- j. Permitting processes;
- k. Leachate control and treatment.

114.29(5) Alternate basic operator training must be approved by the department. It shall be the applicant's responsibility to submit any documentation the department may require to evaluate the equivalency of alternate training.

114.29(6) Fees.

- a.* The examination fee for each examination shall be \$20.
- b.* The initial certification fee shall be \$8 for each one-half year of a two-year period from the date of issuance to June 30 of the next even-numbered year.
- c.* The certification renewal shall be \$24.
- d.* The penalty fee shall be \$12.

114.29(7) Examinations.

- a.* The operator certification examinations will be based on the basic operator training course curriculum.
- b.* All persons wishing to take the examination required to become a certified operator of a sanitary landfill shall complete the Operator Certification Examination Application, Form 542-1354. A listing of dates and locations of examinations is available from the department upon request. The application form requires the applicant to indicate the basic operator training course taken. Evidence of training course completion must be submitted with the application for certification. The completed application and the application fee shall be sent to the director and addressed to the central office in Des Moines. Application for examination must be received by the department at least 30 days prior to the date of examination.
- c.* A properly completed application for examination will be valid for one year from the date the application is approved by the department.
- d.* Upon failure of the first examination, the applicant may be reexamined at the next scheduled examination. Upon failure of the second examination, the applicant shall be required to wait a period of 180 days between each subsequent examination.
- e.* Upon each reexamination when a valid application is on file, the applicant shall submit to the department the examination fee at least ten days prior to the date of examination.
- f.* Failure to successfully complete the examination within one year from the date of approval of the application shall invalidate the application.
- g.* Completed examinations will be retained by the director for a period of one year after which they will be destroyed.
- h.* Oral examinations may be given at the discretion of the department.

114.29(8) Certification.

- a.* All operators who passed the operator certification examination by July 1, 1991, are exempt from taking the required operator training course. Beginning July 1, 1991, all operators will be required to take the basic operator training course and pass the examination in order to become certified.
- b.* Application for certification must be received by the department within 30 days of the date the applicant receives notification of successful completion of the examination. All applications for certification shall be made on a form provided by the department and shall be accompanied by the certification fee.
- c.* Applications for certification by examination which are received more than 30 days but less than 60 days after notification of successful completion of the examination shall be accompanied by the certification fee and the penalty fee. Applicants who do not apply for certification within 60 days of notice of successful completion of the examination will not be certified on the basis of that examination.
- d.* For applicants who have been certified under other state mandatory certification programs, the equivalency of which has been previously reviewed and accepted by the department, certification without examination will be recommended.
- e.* For applicants who have been certified under voluntary certification programs in other states, certification will be considered. The applicant must have successfully completed a basic operator training course and an examination generally equivalent to the Iowa examination. The director may require the applicant to successfully complete the Iowa examination.
- f.* Applicants who seek Iowa certification pursuant to 114.29(8)“d” or “e” shall submit an application for examination accompanied by a letter requesting certification pursuant to those paragraphs.

Application for certification pursuant to those paragraphs shall be received by the director in accordance with 114.29(8) "a" and "b."

114.29(9) Renewals. All certificates shall expire every two years, on even-numbered years, and must be renewed every two years to maintain certification. Application and fee are due prior to expiration of certification.

a. Late application for renewal of a certificate may be made provided that such late application shall be received by the director or postmarked within 30 days of the expiration of the certificate. Such late application shall be on forms provided by the department and accompanied by the penalty fee and the certification renewal fee.

b. If a certificate holder fails to apply for renewal within 30 days following expiration of the certificate, the right to renew the certificate automatically terminates. Certification may be allowed at any time following such termination, provided that the applicant successfully completes an examination. The applicant must then apply for certification in accordance with subrule 114.29(8).

c. An operator may not continue to operate a sanitary landfill after expiration of a certificate without renewal thereof.

d. Continuing education must be earned during the two-year certification period. All certified operators must earn ten contact hours per certificate during each two-year period. The two-year period will begin upon issuance of certification.

e. Only those operators fulfilling the continuing education requirements before the end of each two-year period will be allowed to renew their certificates. The certificates of operators not fulfilling the continuing education requirements shall be void upon expiration, unless an extension is granted.

f. All activities for which continuing education credit will be granted must be related to the subject matter of the particular certificate to which the credit is being applied.

g. The director may, in individual cases involving hardship or extenuating circumstances, grant an extension of time of up to three months within which the applicant may fulfill the minimum continuing education requirements. Hardship or extenuating circumstances include documented health-related confinement or other circumstances beyond the control of the certified operator which prevent attendance at the required activities. All requests for extensions must be made 60 days prior to expiration of certification.

h. The certified operator is responsible for notifying the department of the continuing education credit earned during the period. The continuing education credits earned during the period shall be shown on the application for renewal.

i. A certified operator shall be deemed to have complied with the continuing education requirements of this rule during periods that the operator serves honorably on active duty in the military service; or for periods that the operator is a resident of another state or district having a continuing education requirement for operators and meets all the requirements of that state or district for practice there; or for periods that the person is a government employee working as an operator and is assigned to duty outside of the United States; or for other periods of active practice and absence from the state as approved by the department.

114.29(10) Discipline of certified operators.

a. Disciplinary action may be taken on any of the following grounds:

(1) Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified operator. Duties of certified operators include compliance with rules and permit conditions applicable to sanitary landfill operation.

(2) Failure to submit required records of operation or other reports required under applicable permits or rules of the department, including failure to submit complete records or reports.

(3) Knowingly making any false statement, representation, or certification on any application, record, report or document required to be maintained or submitted under any applicable permit or rule of the department.

b. Disciplinary sanctions allowable are:

(1) Revocation of a certificate.

(2) Probation under specified conditions relevant to the specific grounds for disciplinary action. Additional education or training or reexamination may be required as a condition of probation.

c. The procedure for discipline is as follows:

(1) The director shall initiate disciplinary action. The commission may direct that the director investigate any alleged factual situation that may be grounds for disciplinary action under 114.29(10) “a” and report the results of the investigation to the commission.

(2) A disciplinary action may be prosecuted by the director.

(3) Written notice shall be given to an operator against whom disciplinary action is being considered. The notice shall state the informal and formal procedures available for determining the matter. The operator shall be given 20 days to present any relevant facts and indicate the operator’s position in the matter and to indicate whether informal resolution of the matter may be reached.

(4) An operator who receives notice shall communicate verbally, in writing, or in person with the director, and efforts shall be made to clarify the respective positions of the operator and director.

(5) The applicant’s failure to communicate facts and position relevant to the matter by the required date may be considered when determining appropriate disciplinary action.

(6) If agreement as to appropriate disciplinary sanction, if any, can be reached with the operator and the commission concurs, a written stipulation and settlement between the department and the operator shall be entered. The stipulation and settlement shall recite the basic facts and violations alleged, any facts brought forth by the operator, and the reasons for the particular sanctions imposed.

(7) If an agreement as to appropriate disciplinary action, if any, cannot be reached, the director may initiate formal hearing procedures. Notice and formal hearing shall be in accordance with 567—Chapter 7 related to contested and certain other cases pertaining to license discipline.

114.29(11) Revocation of certificates. Upon revocation of a certificate, application for certification may be allowed after two years from the date of revocation. Any such applicant must successfully complete an examination and be certified in the same manner as a new applicant.

114.29(12) A temporary operator of a sanitary landfill may be designated for a period of six months when an existing certified operator is no longer available to the facility. The facility must make application to the department, explain why a temporary certification is needed, identify the temporary operator, and identify the efforts which will be made to obtain a certified operator. A temporary operator designation shall not be approved for greater than a six-month period except for extenuating circumstances. In any event, not more than one six-month extension to the temporary operator designation may be granted. Approval of a temporary operator designation may be rescinded for cause as set forth in 114.29(10).

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—114.30(455B) Emergency response and remedial action plans.

114.30(1) *Purpose.* The purpose of this rule is to implement Iowa Code section 455B.306(6) “d” by providing the criteria for developing a detailed emergency response and remedial action plan (ERRAP) for permitted sanitary disposal projects.

114.30(2) *Applicability.* The requirements of this rule apply to the owners or operators of all sanitary landfills.

114.30(3) *Submittal requirements.*

a. The owner or operator of facilities that are subject to this rule and have been permitted prior to October 24, 2001, shall submit a complete detailed ERRAP that meets the requirements set forth in this rule no later than December 31, 2001.

b. Applications for a new permit after October 24, 2001, shall incorporate a complete detailed ERRAP that meets the requirements set forth in this rule.

c. An updated ERRAP that meets the requirements of this rule shall be submitted at the time of each permit renewal or permit reissuance application that is due after December 31, 2001.

d. An updated ERRAP shall be included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP.

e. Facilities that submitted an ERRAP meeting the requirements defined under Iowa Code section 455B.306(6) “d” by May 1, 2001, including regional collection centers that, prior to this date, have met the contingency plan submittal requirement described in 567—Chapter 211, and were approved by the

department prior to October 24, 2001, are not required to submit an updated ERRAP that meets the requirements of this rule until the next permit renewal application due date after December 31, 2001.

f. Three sets of ERRAP documents shall be submitted for department approval.

114.30(4) Content. The content of ERRAP documents shall be concise and readily usable as a reference manual by facility managers and operators during emergency conditions. The ERRAP document content shall address at least the following primary issues in detail, unless project conditions render the specific issue as not applicable. The rationale for exclusion of any issue areas that are determined not to be applicable must be provided in either the body of the plan or as a supplement to facilitate department review. Additional emergency response and remedial action plan requirements unique to the facility shall be addressed, as applicable.

a. Facility information.

- (1) Permitted agency.
- (2) DNR permit number.
- (3) Facility description.
- (4) Responsible official and contact information.
- (5) Project location.
- (6) Site and environs map.

b. Regulatory requirements.

- (1) Iowa Code section 455B.306(6) “d” criteria citation.
- (2) Reference to provisions of the permit.

c. Emergency conditions—response activities—remedial action.

- (1) Failure of utilities.
 1. Short-term (48 hours or less).
 2. Long-term (over 48 hours).
- (2) Weather-related events.
 1. Tornado.
 2. Windstorms.
 3. Intense rainstorms and erosion.
 4. Lightning strikes.
 5. Flooding.
 6. Event and postevent conditions.
- (3) Fire and explosions.
 1. Waste materials.
 2. Buildings and site.
 3. Equipment.
 4. Fuels.
 5. Utilities.
 6. Facilities.
 7. Working area.
 8. Hot loads.
 9. Waste gases.
 10. Evacuation.
- (4) Regulated waste spills and releases.
 1. Waste materials.
 2. Leachate.
 3. Waste gases.
 4. Waste stockpiles and storage facilities.
 5. Waste transport systems.
 6. Litter and airborne particulates.
 7. Site drainage systems.
 8. Off-site releases.
- (5) Hazardous material spills and releases.

1. Load check control points.
2. Mixed waste deliveries.
3. Fuels.
4. Waste gases.
5. Site drainage systems.
6. Off-site releases.
- (6) Mass movement of land and waste.
 1. Earthquakes.
 2. Slope failure.
 3. Waste shifts.
 4. Waste subsidence.
- (7) Emergency and release notifications and reporting.
 1. Federal agencies.
 2. State agencies.
 3. County and city agencies.
 4. News media.
 5. Public and private facilities with special populations within five miles.
 6. Emergency response agencies and contact information.
 7. Reporting requirements and forms.
- (8) Emergency waste management procedures.
 1. Communications.
 2. Temporary discontinuation of services—short- and long-term.
 3. Facilities access and rerouting.
 4. Waste acceptance.
 5. Wastes in process.
- (9) Primary emergency equipment inventory.
 1. Major equipment.
 2. Fire hydrants and water sources.
 3. Off-site equipment resources.
- (10) Emergency aid.
 1. Responder contacts.
 2. Medical services.
 3. Contracts and agreements.
- (11) ERRAP training requirements.
 1. Training providers.
 2. Employee orientation.
 3. Annual training updates.
 4. Training completion and record keeping.
- (12) Reference tables, figures and maps.

567—114.31(455B) Construction and demolition wastes sanitary landfill financial assurance.

114.31(1) Purpose. The purpose of this rule is to implement Iowa Code sections 455B.304(8) and 455B.306(9) by providing the criteria for establishing financial assurance for closure, postclosure and corrective action at construction and demolition wastes sanitary landfills (CND landfills).

114.31(2) Applicability. The requirements of this rule apply to all owners and operators of CND landfills accepting waste as of October 31, 2007, except owners or operators that are state or federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States.

114.31(3) Financial assurance for closure. The owner or operator of a CND landfill must establish financial assurance for closure in accordance with the criteria in this rule. The owner or operator must provide continuous coverage for closure until released from this requirement by demonstrating compliance with subrules 114.26(13) and 114.13(10). Proof of compliance pursuant to paragraphs 114.31(3) “a” to “e” must be submitted by the owner or operator yearly by April 1 and approved by the department.

a. The owner or operator shall submit the current version of department Form 542-8090, Sanitary Landfill Financial Assurance Report Form, which contains, but is not limited to, the amount of the financial assurance, the annual financial statement required by Iowa Code sections 455B.306(9)“e” and 455B.306(7)“c,” and the current balances of the closure and postclosure accounts at the time of submittal as required by Iowa Code section 455B.306(9)“b.”

b. The owner or operator shall submit a copy of the financial assurance instruments or the documents establishing the financial assurance instruments in an amount equal to or greater than the amount specified in subrule 114.31(9). Documentation for the mechanism(s) used to demonstrate financial assurance shall contain, at a minimum, the items required to be submitted as specified in paragraphs 114.31(6)“a” to “i.”

c. The owner or operator shall submit a detailed written estimate, in current dollars, certified by an Iowa-licensed professional engineer, of the cost of hiring a third party to close the CND landfill in accordance with the closure plan as required by subrules 114.26(13) and 114.13(10). Such estimate must be available at any time during the active life of the landfill.

(1) The cost estimate must equal the cost of closing the CND landfill at any time during the permitted life of the facility when the extent and manner of its operation would make closure the most expensive.

(2) The costs contained in the third-party estimate for closure must be accurate and reasonable when compared to the cost estimates used by other similarly situated landfills in Iowa.

(3) During the active life of the landfill, the owner or operator must annually adjust the closure cost estimate for inflation.

(4) The owner or operator must, annually or at the time of application for a permit amendment that increases closure costs, whichever occurs first, increase the closure cost estimate and the amount of financial assurance provided if changes to the closure plan or CND landfill conditions increase the maximum cost of closure at any time during the remaining active life of the facility.

(5) The owner or operator may reduce the amount of financial assurance for closure if the most recent estimate of the maximum cost of closure at any time during the active life of the facility is less than the amount of financial assurance currently provided. Prior to the reduction, the owner or operator must submit to the department the justification for the reduction of the closure cost estimate and the updated documentation required by paragraphs 114.31(3)“a” to “e” and receive department approval for the reduction. Approval or denial shall be issued within 30 days of receipt of the reduction request.

(6) The third-party estimate submitted to the department must include the site area subject to closure and must account for at least the following factors determined by the department to be minimal necessary costs for closure:

1. Closure and postclosure plan document revisions;
2. Site preparation, earthwork and final grading;
3. Drainage control culverts, piping and structures;
4. Erosion control structures, sediment ponds and terraces;
5. Final cap construction;
6. Cap vegetation soil placement;
7. Cap seeding, mulching and fertilizing;
8. Monitoring well, piezometer and gas control modifications;
9. Leachate system cleanout and extraction well modifications;
10. Monitoring well installations and abandonments;
11. Facility modifications to effect closed status;
12. Engineering and technical services;
13. Legal, financial and administrative services; and
14. Closure compliance certifications and documentation.

d. For publicly owned CND landfills, the owner or operator shall submit to the department a copy of the owner’s or operator’s most recent annual audit report in the form prescribed by the office of the auditor of the state of Iowa.

e. Privately held CND landfills shall submit an affidavit from the owner or operator indicating that a yearly review has been performed by a certified public accountant to determine whether the privately owned landfill is in compliance with this rule. The affidavit shall state the name of the certified public

accountant, the dates and conclusions of the review, and the steps taken to rectify any deficiencies identified by the accountant.

114.31(4) *Financial assurance for postclosure.* The owner or operator of a CND landfill must establish financial assurance for the costs of postclosure in accordance with the criteria in this rule. The owner or operator must provide continuous coverage for postclosure until released from this requirement by demonstrating compliance with the postclosure plan and the closure permit. Proof of compliance pursuant to paragraphs 114.31(4) “a” to “e” must be submitted by the owner or operator yearly by April 1 and approved by the department.

a. The owner or operator shall submit the current version of department Form 542-8090, Sanitary Landfill Financial Assurance Report Form, which contains, but is not limited to, the amount of the financial assurance, the annual financial statement required by Iowa Code sections 455B.306(9) “e” and 455B.306(7) “c,” and the current balances of the closure and postclosure accounts required by Iowa Code section 455B.306(9) “b.”

b. The owner or operator shall submit a copy of the documents establishing a financial assurance instrument in an amount equal to or greater than the amount specified in subrule 114.31(9). Documentation for the mechanism(s) used to demonstrate financial assurance shall contain, at a minimum, the items required to be submitted as specified in paragraphs 114.31(6) “a” to “i.”

c. The owner or operator shall submit a detailed written estimate, in current dollars, certified by an Iowa-licensed professional engineer, of the cost of hiring a third party to conduct postclosure for the CND landfill in compliance with the postclosure plan developed pursuant to subrules 114.26(14) and 114.13(10). The cost estimate must account for the total cost of conducting postclosure, as described in the plan, for the entire postclosure period.

(1) The cost estimate for postclosure must be based on the most expensive costs during the entire postclosure period.

(2) The costs contained in the third-party estimate for postclosure must be accurate and reasonable when compared to the cost estimates used by other similarly situated landfills in Iowa.

(3) During the active life of the CND landfill and during the postclosure period, the owner or operator must annually adjust the postclosure cost estimate for inflation.

(4) The owner or operator must, annually or at the time of application for a permit amendment that increases postclosure costs, whichever occurs first, increase the estimate and the amount of financial assurance provided if changes in the postclosure plan or CND landfill conditions increase the maximum cost of postclosure.

(5) The owner or operator may reduce the amount of financial assurance for postclosure if the most recent estimate of the maximum cost of postclosure beginning at any time during the active life of the facility is less than the amount of financial assurance currently provided. Prior to the reduction, the owner or operator must submit to the department the justification for the reduction of the postclosure cost estimate and the updated documentation required by paragraphs 114.31(4) “a” to “e” and must receive department approval for the reduction. Approval or denial shall be issued within 30 days of receipt of the reduction request.

(6) The third-party estimate submitted to the department must include the site area subject to postclosure and must account for at least the following factors determined by the department to be minimal necessary costs for postclosure:

1. General site facilities, access roads and fencing maintenance;
2. Cap and vegetative cover maintenance;
3. Drainage and erosion control systems maintenance;
4. Groundwater to waste separation systems maintenance;
5. Gas control systems maintenance;
6. Gas control systems monitoring and reports;
7. Groundwater and surface water monitoring systems maintenance;
8. Groundwater and surface water quality monitoring and reports;
9. Groundwater monitoring systems performance evaluations and reports;
10. Leachate control systems maintenance;

11. Leachate management, transportation and disposal;
12. Leachate control systems performance evaluations and reports;
13. Facility inspections and reports;
14. Engineering and technical services;
15. Legal, financial and administrative services; and
16. Financial assurance, accounting, audits and reports.

d. For publicly owned CND landfills, the owner or operator shall submit to the department a copy of the owner's or operator's most recent annual audit report in the form prescribed by the office of the auditor of the state of Iowa.

e. Privately held CND landfills shall submit an affidavit from the owner or operator indicating that a yearly review has been performed by a certified public accountant to determine whether the privately owned landfill is in compliance with this rule. The affidavit shall state the name of the certified public accountant, the dates and conclusions of the review, and the steps taken to rectify any deficiencies identified by the accountant.

114.31(5) *Financial assurance for corrective action.*

a. An owner or operator required to undertake corrective action pursuant to subrules 114.26(4) to 114.26(9), inclusive, must have a detailed written estimate prepared by an Iowa-licensed professional engineer, in current dollars, of the cost of hiring a third party to perform the required corrective action. The estimate must account for the total costs of the activities described in the approved corrective action plan for the entire corrective action period. The owner or operator must submit to the department the estimate and financial assurance documentation within 30 days of department approval of the corrective action plan.

(1) The owner or operator must annually adjust the estimate for inflation until the corrective action plan is completed.

(2) The owner or operator must increase the cost estimate and the amount of financial assurance provided if changes in the corrective action plan or CND landfill conditions increase the maximum cost of corrective action.

(3) The owner or operator may reduce the amount of the cost estimate and the amount of financial assurance provided if the estimate exceeds the maximum remaining costs of the remaining corrective action. The owner or operator must submit to the department the justification for the reduction of the cost estimate and documentation of financial assurance.

b. The owner or operator of a CND landfill required to undertake a corrective action plan must establish financial assurance for the most recent corrective action plan by one of the mechanisms prescribed in subrule 114.31(6). The owner or operator must provide continuous coverage for corrective action until released from financial assurance requirements by demonstrating compliance with the following:

(1) Upon completion of the remedy, the owner or operator must submit to the department a certification of compliance with the approved corrective action plan. The certification must be signed by the owner or operator and by an Iowa-licensed professional engineer.

(2) Upon department approval of completion of the corrective action remedy, the owner or operator shall be released from the requirements for financial assurance for corrective action.

114.31(6) *Allowable financial assurance mechanisms.* The mechanisms used to demonstrate financial assurance as required by Iowa Code section 455B.306(9) "a" must ensure that the funds necessary to meet the costs of closure, postclosure, and corrective action for known releases will be available whenever the funds are needed. Owners or operators must choose from options in paragraphs 114.31(6) "a" to "i."

a. *Trust fund.*

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action, whichever is applicable, by establishing a trust fund which conforms to the requirements of this subrule. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. A copy of the trust agreement must be submitted pursuant to subrules 114.31(3), 114.31(4), and 114.31(5) and placed in the facility's official files.

(2) Payments into the trust fund must be made annually by the owner or operator over ten years or over the remaining life of the CND landfill, whichever is shorter, in the case of a trust fund for closure or

postclosure; or over one-half of the estimated length of the corrective action plan in the case of a response to a known release. This period is referred to as the pay-in period.

(3) For a trust fund used to demonstrate financial assurance for closure and postclosure, the first payment into the fund must be at least equal to the amount specified in subrule 114.31(9) for closure or postclosure divided by the number of years in the pay-in period as defined in subparagraph 114.31(6) "a"(2). The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{CE} - \text{CB}}{\text{Y}}$$

where CE is the amount specified in subrule 114.31(9) for closure or postclosure (updated for inflation or other changes), CB is the current balance of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund must be at least equal to one-half of the current cost estimate for corrective action divided by the number of years in the corrective action pay-in period as defined in subparagraph 114.31(6) "a"(2). The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{RB} - \text{CV}}{\text{Y}}$$

where RB is the most recent estimate of the required trust fund balance for corrective action, which is the total cost that will be incurred during the second half of the corrective action period, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(5) The initial payment into the trust fund must be made before the initial receipt of waste or within 30 days of close of the first fiscal year that begins after October 31, 2007, in the case of existing facilities; before the cancellation of an alternative financial assurance mechanism in the case of closure and postclosure; or no later than 120 days after the corrective action remedy has been approved by the department.

(6) The owner or operator or another person authorized to conduct closure, postclosure, or corrective action activities may request reimbursement from the trustee for these expenditures, including partial closure, as the expenditures are incurred. Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure, postclosure, or corrective action and if justification and documentation of the costs are placed in the operating record. The owner or operator must submit to the department documentation of the justification for reimbursement and verification that reimbursement has been received.

(7) The trust fund may be terminated by the owner or operator only if the owner or operator substitutes alternative financial assurance as specified in this rule or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

(8) After the pay-in period has been completed, the trust fund shall be adjusted annually to correct any deficiency of the fund with respect to the adjusted cost estimate and may be adjusted annually should the balance in the fund exceed the adjusted cost estimate.

b. Surety bond guaranteeing payment or performance.

(1) An owner or operator may demonstrate financial assurance for closure or postclosure by obtaining a payment or performance surety bond which conforms to the requirements of this subrule. An owner or operator may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of this subrule. The bond must be effective before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure; or no later than 120 days after the corrective action remedy has been approved by the department. The owner or operator must submit a copy of the bond to the department and keep a copy in the facility's official files. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. Department of the Treasury. The state shall not be considered a party to the surety bond.

(2) The penal sum of the bond must be in an amount at least equal to the amount specified in subrule 114.31(9) for closure and postclosure or corrective action, whichever is applicable.

(3) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond and also upon notice from the department pursuant to subparagraph 114.31(6)“b”(6).

(4) The owner or operator must establish a standby trust fund. The standby trust fund must meet the requirements of paragraph 114.31(6)“a” except the requirements for initial payment and subsequent annual payments specified in subparagraphs 114.31(6)“a”(2) to (5).

(5) Payments made under the terms of the bond will be deposited by the surety directly into the standby trust fund. Payments from the trust fund must be approved by the trustee and the department.

(6) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice from the surety of withdrawal of the cancellation, or proof of a deposit into the standby trust fund of a sum equal to the amount of the bond. If the owner or operator has not complied with this subparagraph within the 60-day time period, this shall constitute a failure to perform, and the department shall notify the surety, prior to the expiration of the 120-day notice period, that such a failure has occurred.

(7) The bond must be conditioned upon faithful performance by the owner or operator of all closure, postclosure, or corrective action requirements of the Code of Iowa and this rule. A failure to comply with subparagraph 114.31(6)“b”(6) shall also constitute a failure to perform under the terms of the bond.

(8) Liability under the bond shall be for the duration of the operation and the closure and postclosure periods.

(9) The owner or operator may cancel the bond only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

c. Letter of credit.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action, whichever is applicable, by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph. The letter of credit must be effective before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure; or no later than 120 days after the corrective action plan is approved by the department. The owner or operator must submit to the department a copy of the letter of credit and place a copy in the facility’s official files. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the facility and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the facility’s files.

(3) The letter of credit must be irrevocable and must be issued for a period of at least one year in an amount at least equal to the amount specified in subrule 114.31(9) for closure, postclosure, or corrective action, whichever is applicable. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into the closure and postclosure accounts established pursuant to Iowa Code section 455B.306(9)“b.” If the owner or operator has not complied with this subparagraph within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the closure and postclosure accounts established by the owner or operator pursuant to Iowa Code section 455B.306(9)“b.” The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator,

and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

(4) The owner or operator may cancel the letter of credit only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

d. Insurance.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action by obtaining insurance which conforms to the requirements of this paragraph. The insurance must be effective before the initial receipt of waste or prior to cancellation of an alternative financial assurance, in the case of closure and postclosure; or no later than 120 days after the corrective action plan has been approved by the department. At a minimum, the insurer must be licensed to transact the business of insurance or be eligible to provide insurance as an excess or surplus lines insurer in one or more states. The owner or operator must submit to the department a copy of the insurance policy and retain a copy in the facility's official files.

(2) The closure or postclosure insurance policy must guarantee that funds will be available to close the CND landfill whenever final closure occurs or to provide postclosure for the CND landfill whenever the postclosure period begins, whichever is applicable. The policy must also guarantee that once closure or postclosure begins, the insurer will be responsible for the paying out of funds to the owner or operator or another person authorized to conduct closure or postclosure, up to an amount equal to the face amount of the policy.

(3) The insurance policy must be issued for a face amount at least equal to the amount specified in subrule 114.31(9) for closure, postclosure, or corrective action, whichever is applicable. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(4) An owner or operator or another person authorized to conduct closure or postclosure may receive reimbursements for closure or postclosure expenditures, including partial closure, as applicable. Requests for reimbursement will be granted by the insurer only if the remaining value of the policy is sufficient to cover the remaining costs of closure or postclosure, and if justification and documentation of the cost are placed in the operating record. The owner or operator must submit to the department documentation of the justification for reimbursement and verification that the reimbursement has been received.

(5) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided that such consent is not unreasonably refused.

(6) The insurance policy must provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may cancel the policy by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice from the insurer of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the insurance coverage into the closure and postclosure accounts established pursuant to Iowa Code section 455B.306(9) "b." If the owner or operator has not complied with this subparagraph within the 60-day time period, this shall constitute a failure to perform and shall be a covered event pursuant to the terms of the insurance policy. A failure by the owner or operator to comply with this subparagraph within the 60-day period shall make the insurer liable for the closure and postclosure costs of the covered facility up to the amount of the policy limits, which shall be equal to the most recently submitted cost estimates.

(7) For insurance policies providing coverage for postclosure, commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. Such increase must be equivalent to the face amount of the policy, less any payments made,

multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Department of the Treasury for 26-week treasury securities.

(8) The owner or operator may cancel the insurance only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

e. Corporate financial test. An owner or operator that satisfies the requirements of this paragraph may demonstrate financial assurance up to the amount specified below:

(1) Financial component. The owner or operator must satisfy the requirements of numbered paragraphs 114.31(6)“e”(1)“1,” “2,” and “3” to meet the financial component of the corporate financial test.

1. The owner or operator must satisfy one of the following three conditions:

- A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor’s or Aaa, Aa, A, or Baa as issued by Moody’s; or
- A ratio of less than 1.5 comparing total liabilities to net worth (net worth calculations may not include future permitted capacity of the subject landfill as an asset); or
- A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities;

2. The tangible net worth, excluding future permitted capacity of the subject landfill, of the owner or operator must be greater than:

- The sum of the current closure, postclosure, and corrective action cost estimates and any other environmental obligations, including guarantees, covered by this financial test plus \$10 million except as provided in the second bulleted paragraph of numbered paragraph 114.31(6)“e”(1)“2”; or
- Net worth of \$10 million, excluding future permitted capacity of the subject landfill, plus the amount of any guarantees that have not been recognized as liabilities on the financial statements, provided that all of the current closure, postclosure, and corrective action costs and any other environmental obligations covered by a financial test are recognized as liabilities on the owner’s or operator’s audited financial statements, and subject to the approval of the department; and

3. The owner or operator must have, located in the United States, assets, excluding future permitted capacity of the subject landfill, amounting to at least the sum of current closure, postclosure, and corrective action cost estimates and any other environmental obligations covered by a financial test as described in subparagraph 114.31(6)“e”(5).

(2) Record-keeping and reporting requirements. The owner or operator must submit the following records to the department and place a copy in the facility’s official files prior to the initial receipt of solid waste or cancellation of an alternative financial assurance instrument, in the case of closure and postclosure; or no later than 120 days after the corrective action plan has been approved by the department:

1. A letter signed by a certified public accountant and based upon a certified audit that:

- Lists all the current cost estimates covered by a financial test including, but not limited to, cost estimates required by subrules 114.31(3) to 114.31(5); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40 CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and

- Provides evidence demonstrating that the owner or operator meets the conditions of subparagraph 114.31(6)“e”(1).

2. A copy of the independent certified public accountant’s unqualified opinion of the owner’s or operator’s financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner’s or operator’s financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this mechanism. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the

corporate financial test, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

3. If the certified public accountant's letter providing evidence of financial assurance includes financial data which shows that the owner or operator satisfies subparagraph 114.31(6)"e"(1) but which differs from data in the audited financial statements referred to in numbered paragraph 114.31(6)"e"(2)"2," then a special report from the owner's or operator's independent certified public accountant to the owner or operator is required. The special report shall be based upon an agreed-upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the certified public accountant's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

4. If the certified public accountant's letter provides a demonstration that the owner or operator has assured for environmental obligations as provided in the second bulleted paragraph of numbered paragraph 114.31(6)"e"(2)"1," then the letter shall include a report from the independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements and that documents how these obligations have been measured and reported and verifies that the tangible net worth of the owner or operator is at least \$10 million plus the amount of any guarantees provided.

(3) The owner or operator may cease the submission of the information required by paragraph 114.31(6)"e" only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

(4) The department may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subparagraph 114.31(6)"e"(1), require the owner or operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in subparagraph 114.31(6)"e"(2). If the department finds that the owner or operator no longer meets the requirements of subparagraph 114.31(6)"e"(1), the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

(5) Calculation of costs to be assured. When calculating the current cost estimates for closure, postclosure, corrective action, or the sum of the combination of such costs to be covered, and any other environmental obligations assured by a financial test referred to in paragraph 114.31(6)"e," the owner or operator must include cost estimates required for subrules 114.31(3) to 114.31(5); cost estimates for municipal solid waste management facilities pursuant to 40 CFR Section 258.74; and cost estimates required for the following environmental obligations, if the owner or operator assures those environmental obligations through a financial test: obligations associated with UIC facilities under 40 CFR Part 144, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265.

f. Local government financial test. An owner or operator that satisfies the requirements of this paragraph may demonstrate financial assurance up to the amount specified below:

(1) Financial component.

1. The owner or operator must satisfy one of the following requirements:

- If the owner or operator has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the owner or operator must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard & Poor's, on all such general obligation bonds; or

- The owner or operator must satisfy both of the following financial ratios based on the owner's or operator's most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

2. The owner or operator must prepare its financial statements in conformity with generally accepted accounting principles or other comprehensive basis of accounting and have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa.

3. A local government is not eligible to assure its obligations in paragraph 114.31(6) “f” if it:

- Is currently in default on any outstanding general obligation bonds; or
- Has any outstanding general obligation bonds rated lower than Baa as issued by Moody’s or BBB as issued by Standard & Poor’s; or
- Operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or

- Receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement as required under numbered paragraph 114.31(6) “f”(1)“2.” A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism.

4. The following terms used in this paragraph are defined as follows:

“*Cash plus marketable securities*” means all the cash plus marketable securities held by the local government on the last day of a fiscal year, excluding cash and marketable securities designated to satisfy past obligations such as pensions.

“*Debt service*” means the amount of principal and interest due on a loan in a given time period, typically the current year.

“*Deficit*” means total annual revenues minus total annual expenditures.

“*Total expenditures*” means all expenditures, excluding capital outlays and debt repayment.

“*Total revenues*” means revenues from all taxes and fees excluding revenue from funds managed by local government on behalf of a specific third party and does not include the proceeds from borrowing or asset sales.

(2) Public notice component. The local government owner or operator must include disclosure of the closure and postclosure costs assured through the financial test in its next annual audit report prior to the initial receipt of waste at the facility or prior to cancellation of an alternative financial assurance mechanism, whichever is later. A reference to corrective action costs must be placed in the next annual audit report after the corrective action plan is approved by the department. For the first year the financial test is used to assure costs at a particular facility, the reference may instead be placed in the facility’s official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure and postclosure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(3) Record-keeping and reporting requirements.

1. The local government owner or operator must submit to the department the following items:

- A letter signed by the local government’s chief financial officer that lists all the current cost estimates covered by a financial test, as described in subparagraph 114.31(6) “f”(4); that provides evidence and certifies that the local government meets the conditions of numbered paragraphs 114.31(6) “f”(1)“1,” “2,” and “3”; and that certifies that the local government meets the conditions of subparagraphs 114.31(6) “f”(2) and (4); and

- The local government’s annual financial report indicating compliance with the financial ratios required by numbered paragraph 114.31(6) “f”(1)“1,” second bulleted paragraph, if applicable, and the requirements of numbered paragraph 114.31(6) “f”(1)“2” and the third and fourth bulleted paragraphs of numbered paragraph 114.31(6) “f”(1)“3,” and also indicating that the requirements of Governmental Accounting Standards Board Statement 18 have been met.

2. The items required in numbered paragraph 114.31(6) “f”(3)“1” must be submitted to the department and placed in the facility’s official files prior to the receipt of waste or prior to the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure; or, in the case of corrective action, not later than 120 days after the corrective action plan is approved by the department

3. After the initial submission of the required items and their placement in the facility’s official files, the local government owner or operator must update the information and place the updated information in the facility’s official files within 180 days following the close of the owner’s or operator’s fiscal year.

4. The owner or operator may cease the submission of the information required by paragraph 114.31(6) “f” only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

5. A local government must satisfy the requirements of the financial test at the close of each fiscal year. If the local government owner or operator no longer meets the requirements of the local government financial test, the local government must, within 180 days following the close of the owner’s or operator’s fiscal year, obtain alternative financial assurance that meets the requirements of this rule, place the required submissions for that assurance in the operating record, and notify the department that the owner or operator no longer meets the criteria of the financial test and that alternative financial assurance has been obtained.

6. The department, based on a reasonable belief that the local government owner or operator may no longer meet the requirements of the local government financial test, may require additional reports of financial conditions from the local government. If the department finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of the local government financial test, the local government must provide alternative financial assurance in accordance with this rule.

(4) Calculation of costs to be assured. The portion of the closure, postclosure, and corrective action costs which an owner or operator may assure under this paragraph is determined as follows:

1. If the local government owner or operator does not assure other environmental obligations through a financial test, the owner or operator may assure closure, postclosure, and corrective action costs that equal up to 43 percent of the local government’s total annual revenue.

2. If the local government assures other environmental obligations through a financial test, including those associated with UIC facilities under 40 CFR Section 144.62, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, the owner or operator must add those costs to the closure, postclosure, and corrective action costs it seeks to assure under this paragraph. The total that may be assured must not exceed 43 percent of the local government’s total annual revenue.

3. The owner or operator must obtain an alternative financial assurance instrument for those costs that exceed the limits set in numbered paragraphs 114.31(6) “f”(4) “1” and “2.”

g. *Corporate guarantee.*

(1) An owner or operator may meet the requirements of this paragraph by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a “substantial business relationship” with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraph 114.31(6) “e” and must comply with the terms of the guarantee. A certified copy of the guarantee must be placed in the facility’s operating record along with copies of the letter from a certified public accountant and the accountant’s opinions. If the guarantor’s parent corporation is also the parent corporation of the owner or operator, the letter from the certified public accountant must describe the value received in consideration of the guarantee. If the guarantor is an owner or operator with a “substantial business relationship” with the owner or operator, this letter must describe this “substantial business relationship” and the value received in consideration of the guarantee.

(2) The guarantee must be effective and all required submissions made to the department prior to the initial receipt of waste or before cancellation of an alternative financial mechanism, in the case of closure and postclosure; or, in the case of corrective action, no later than 120 days after the corrective action plan has been approved by the department.

(3) The terms of the guarantee must provide that:

1. If the owner or operator fails to perform closure, postclosure, or corrective action of a facility covered by the guarantee, or fails to obtain alternative financial assurance within 90 days of notice of intent to cancel pursuant to numbered paragraphs 114.31(6) “g”(3) “2” and “3,” the guarantor will:

- Perform, or pay a third party to perform, closure, postclosure, or corrective action as required (performance guarantee); or
- Establish a fully funded trust fund as specified in paragraph 114.31(6) “a” in the name of the owner or operator (payment guarantee); or

- Obtain alternative financial assurance as required by numbered paragraph 114.31(6) “g”(3)“3.”

2. The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements of this rule unless the guarantor sends prior notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts.

3. If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the department, provide to the department adequate proof of alternative financial assurance, notice from the guarantor of withdrawal of the cancellation, or proof of the establishment of a fully funded trust fund pursuant to paragraph 114.31(6) “a.” If the owner or operator fails to comply with the provisions of this numbered paragraph within the 90-day period, the guarantor must provide that alternative financial assurance prior to cancellation of the corporate guarantee.

(4) If a corporate guarantor no longer meets the requirements of paragraph 114.31(6) “e,” the owner or operator must, within 90 days, obtain alternative financial assurance and submit proof of alternative financial assurance to the department. If the owner or operator fails to provide alternative financial assurance within the 90-day period, the guarantor must provide that alternative financial assurance within the next 30 days.

(5) The owner or operator is no longer required to meet the requirements of paragraph 114.31(6) “g” upon the submission to the department of proof of the substitution of alternative financial assurance or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

h. Local government guarantee. An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E. The guarantor must meet the requirements of the local government financial test in paragraph 114.31(6) “f” and must comply with the terms of a written guarantee.

(1) Terms of the written guarantee. The guarantee must be effective before the initial receipt of waste or before the cancellation of alternative financial assurance, in the case of closure and postclosure; or no later than 120 days after the corrective action plan is approved by the department. The guarantee must provide that:

1. If the owner or operator fails to perform closure, postclosure, or corrective action of a facility covered by the guarantee or fails to obtain alternative financial assurance within 90 days of notice of intent to cancel pursuant to numbered paragraphs 114.31(6) “h”(1)“2” and “3,” the guarantor will:

- Perform, or pay a third party to perform, closure, postclosure, or corrective action as required; or
- Establish a fully funded trust fund as specified in paragraph 114.31(6) “a” in the name of the owner or operator; or

- Obtain alternative financial assurance as required by numbered paragraph 114.31(6) “h”(1)“3.”

2. The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts.

3. If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the department, provide to the department adequate proof of alternative financial assurance, notice from the guarantor of withdrawal of the cancellation, or proof of the establishment of a fully funded trust fund pursuant to paragraph 114.31(6) “a.” If the owner or operator fails to comply with the provisions of this numbered paragraph within the 90-day period, the guarantor must provide that alternative financial assurance prior to cancellation of the guarantee.

(2) Record-keeping and reporting requirements.

1. The owner or operator must submit to the department a certified copy of the guarantee along with the items required under subparagraph 114.31(6) “f”(3) and place a copy in the facility’s official files before the initial receipt of waste or before cancellation of alternative financial assurance, whichever is later, in the

case of closure and postclosure; or no later than 120 days after the corrective action plan has been approved by the department.

2. The owner or operator shall no longer be required to submit the items specified in numbered paragraph 114.31(6)“h”(2)“1” when proof of alternative financial assurance has been submitted to the department or the owner or operator is no longer required to provide financial assurance pursuant to this rule.

3. If a local government guarantor no longer meets the requirements of paragraph 114.31(6)“f,” the owner or operator must, within 90 days, submit to the department proof of alternative financial assurance. If the owner or operator fails to obtain alternative financial assurance within the 90-day period, the guarantor must provide that alternative financial assurance within the next 30 days.

i. *Local government dedicated fund.* The owner or operator of a publicly owned CND landfill or a local government serving as a guarantor may demonstrate financial assurance for closure, postclosure, or corrective action, whichever is applicable, by establishing a dedicated fund or account that conforms to the requirements of this paragraph. A dedicated fund will be considered eligible if it complies with subparagraph 114.31(6)“i”(1) or (2) and all other provisions of this paragraph, and documentation of this compliance has been submitted to the department.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, or order to pay for closure, postclosure, or corrective action costs that arise from the operation of the CND landfill and shall be funded for the full amount of coverage or funded for part of the required amount of coverage and used in combination with another mechanism(s) that provides the remaining coverage.

(2) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, or order as a reserve fund and shall be funded for no less than the full amount of coverage or funded for part of the required amount of coverage and used in combination with another mechanism(s) that provides the remaining coverage.

(3) Payments into the dedicated fund must be made annually by the owner or operator for ten years or over the permitted life of the CND landfill, whichever is shorter, in the case of a dedicated fund for closure or postclosure; or over one-half of the estimated length of an approved corrective action plan in the case of a response to a known release. This is referred to as the pay-in period. The initial payment into the dedicated fund must be made before the initial receipt of waste in the case of closure and postclosure or no later than 120 days after the corrective action plan has been approved by the department.

(4) For a dedicated fund used to demonstrate financial assurance for closure and postclosure, the first payment into the dedicated fund must be at least equal to the amount specified in subrule 114.31(9), divided by the number of years in the pay-in period as defined in paragraph 114.31(6)“i.” The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{CE} - \text{CB}}{\text{Y}}$$

where CE is the total required financial assurance for the owner or operator, CB is the current balance of the fund, and Y is the number of years remaining in the pay-in period.

(5) For a dedicated fund used to demonstrate financial assurance for corrective action, the first payment into the dedicated fund must be at least one-half of the current cost estimate, divided by the number of years in the corrective action pay-in period as defined in paragraph 114.31(6)“i.” The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{RB} - \text{CF}}{\text{Y}}$$

where RB is the most recent estimate of the required dedicated fund balance, which is the total cost that will be incurred during the second half of the corrective action period, CF is the current amount in the dedicated fund, and Y is the number of years remaining in the pay-in period.

(6) The initial payment into the dedicated fund must be made before the initial receipt of waste or within 30 days of close of the first fiscal year that begins after October 31, 2007, in the case of existing

facilities; before the cancellation of an alternative financial assurance mechanism in the case of closure and postclosure; or no later than 120 days after the corrective action remedy has been approved by the department.

(7) After the pay-in period has been completed, the dedicated fund shall be adjusted annually to correct any deficiency of the fund with respect to the adjusted cost estimate and may be adjusted annually should the balance in the fund exceed the adjusted cost estimate.

114.31(7) General requirements.

a. Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this rule by establishing more than one financial mechanism per facility. The mechanisms must be a combination of those mechanisms outlined in this rule and must provide financial assurance for an amount at least equal to the current cost estimate for closure, postclosure, or corrective action, whichever is applicable. The financial test and a guarantee provided by a corporate parent, sibling or grandparent may not be combined if the financial statements of the two entities are consolidated.

b. Use of one mechanism for multiple facilities. An owner or operator may satisfy the requirements of this rule for multiple CND landfills by the use of one mechanism if the owner or operator ensures that the mechanism provides financial assurance for an amount at least equal to the current cost estimates for closure, postclosure, or corrective action, whichever is applicable, for all CND landfills covered.

c. Criteria. The language of the financial assurance mechanisms listed in this rule must ensure that the instruments satisfy the following criteria:

(1) The financial assurance mechanisms must ensure that the amount of funds assured is sufficient to cover the costs of closure, postclosure, or corrective action for known releases, whichever is applicable;

(2) The financial assurance mechanisms must ensure that funds will be available in a timely fashion when needed;

(3) The financial assurance mechanisms must be obtained by the owner or operator prior to the initial receipt of solid waste and no later than 120 days after the corrective action remedy has been approved by the department until the owner or operator is released from the financial assurance requirements; and

(4) The financial assurance mechanisms must be legally valid, binding, and enforceable under Iowa law.

d. No permit shall be issued by the department pursuant to Iowa Code section 455B.305 unless the applicant has demonstrated compliance with rule 567—114.31(455B).

114.31(8) Closure and postclosure accounts. The holder of a permit for a CND landfill shall maintain a separate account for closure and postclosure as required by Iowa Code section 455B.306(9)“b.” The account shall be specific to a particular facility.

a. Definitions. For the purpose of this subrule, the following definitions shall apply:

“Account” means a formal separate set of records.

“Current balance” means cash in an account established pursuant to this subrule plus the current value of investments of moneys collected pursuant to subrule 114.31(8) and used to purchase one or more of the investments listed in Iowa Code section 12B.10(5).

“Current cost estimate” means the closure cost estimate prepared and submitted to the department pursuant to subrule 114.31(3) and the postclosure cost estimate prepared and submitted pursuant to subrule 114.31(4).

b. Moneys in the accounts shall not be assigned for the benefit of creditors except the state of Iowa.

c. Moneys in the accounts shall not be used to pay any final judgment against a permit holder arising out of the ownership or operation of the site during its active life or after closure.

d. Withdrawal of funds. Except as provided in paragraph 114.31(8)“e,” moneys in the accounts may be withdrawn without department approval only for the purpose of funding closure, including partial closure, or postclosure activities that are in conformance with a closure/postclosure plan which has been submitted pursuant to subrule 114.13(10). Withdrawals for activities not in conformance with a closure/postclosure plan must receive prior written approval from the department. Permit holders using a trust fund established pursuant to paragraph 114.31(6)“a” to satisfy the requirements of this rule must comply with the requirements of subparagraph 114.31(6)“a”(6) prior to withdrawal.

e. Excess funds. If the balance of a closure or postclosure account exceeds the current cost estimate for closure or postclosure at any time, the permit holder may withdraw the excess funds so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

f. Initial proof of establishment of account. A permit holder shall submit a statement of account, signed by the permit holder, to the department by April 1, 2008, that indicates that accounts have been established pursuant to this subrule. Permit holders for new CND landfills permitted after April 1, 2008, shall submit to the department, prior to the landfill's initial receipt of waste, a statement of account that is signed by the permit holder.

g. An account established pursuant to paragraph 114.31(6) "a" for trust funds or paragraph 114.31(6) "i" for local government dedicated funds also satisfies the requirements of this subrule, and the permit holder shall not be required to establish closure and postclosure accounts in addition to said financial assurance accounts.

Accounts established pursuant to paragraphs 114.31(6) "a" or 114.31(6) "i," which are intended to satisfy the requirements of this subrule, must comply with Iowa Code section 455B.306(9) "b."

h. Yearly deposits. Deposits into the closure and postclosure accounts shall be made at least yearly in the amounts specified in this subrule beginning with the close of the facility's first fiscal year that begins after October 31, 2007. The deposits shall be made within 30 days of the close of each fiscal year. The minimum yearly deposit to the closure and postclosure accounts shall be determined using the following formula:

$$\frac{CE - CB}{RPC} \times TR = \text{yearly deposit to account}$$

Where:

"CE" means the current cost estimate of closure and postclosure costs.

"CB" means the current balance of the closure or postclosure accounts.

"RPC" means the remaining permitted capacity, in tons, of the landfill as of the start of the permit holder's fiscal year.

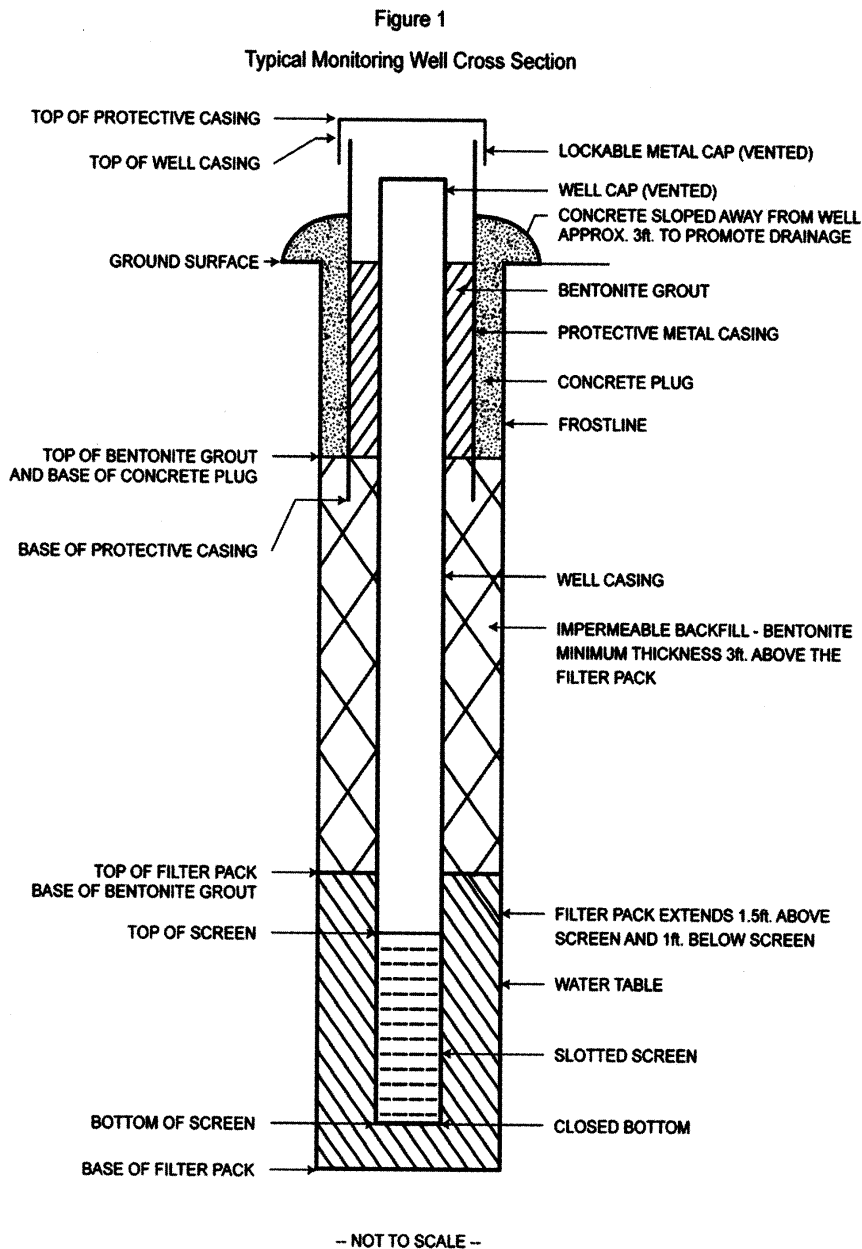
"TR" is the number of tons of solid waste disposed of at the facility in the prior year.

i. Closure and postclosure accounts may be commingled with other accounts so long as the amounts credited to each account balance are reported separately pursuant to paragraphs 114.31(3) "a" and 114.31(4) "a."

j. The department shall have full rights of access to all funds existing in a facility's closure or postclosure account, at the sole discretion of the department, if the permit holder fails to undertake closure or postclosure activities after being directed to do so by a final agency action of the department. These funds shall be used only for the purposes of funding closure and postclosure activities at the site.

114.31(9) Amount of required financial assurance. A financial assurance mechanism established pursuant to subrule 114.31(6) shall be in the amount of the third-party cost estimates required by subrules 114.31(3), 114.31(4), and 114.31(5) except that the amount of the financial assurance may be reduced by the sum of the cash balance in a trust fund or local government dedicated fund established to comply with subrule 114.31(8) plus the current value of investments held by said trust fund or local government dedicated fund if invested in one or more of the investments listed in Iowa Code section 12B.10(5).

These rules are intended to implement Iowa Code section 455B.304.



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[Filed 9/6/07, Notice 1/3/07—published 9/26/07, effective 10/31/07]

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CHAPTER 115
SANITARY LANDFILLS: INDUSTRIAL MONOFILLS

[Prior to 12/11/02, see 567—Chs 102, 103, 110]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—115.1(455B) Scope and applicability. This chapter details the plan and operating requirements for all sanitary landfills accepting only a specific type of industrial waste. All sanitary landfills accepting only a specific type of industrial waste must conform with the provisions of these rules. This chapter also pertains to the hydrologic monitoring system standards for these solid waste disposal facilities.

567—115.2(455B) Permit required. No public or private agency shall construct or operate a sanitary disposal project without first obtaining a permit from the director.

567—115.3(455B) Types of permits. There are four types of permits issued by the director.

115.3(1) *Sanitary disposal project permit.* This permit is issued by the director under the authority of Iowa Code section 455B.305 for sanitary disposal projects which comply with the requirements described in 567—Chapters 102 to 106, 109 to 116, and 118 to 122. Such permits are issued for a term of three years and are renewable for similar terms.

a. Applications for renewal must be received at the department office at least 90 days before the expiration date of the existing permit on a form provided by the department.

b. The department shall conduct an inspection of the sanitary disposal project following receipt of the application for renewal. Following the inspection, the permit holder shall be notified of all measures needed to bring the sanitary disposal project into conformance with Iowa Code chapter 455B and these rules.

c. A permit shall be renewed when a properly completed application has been received and all corrective measures identified in 115.3(1) “*b*” have been completed.

115.3(2) *Temporary permit.* This permit is issued by the director under the authority of Iowa Code subsection 455B.307(1) for solid waste disposal sites which do not comply with the requirements of Iowa Code chapter 455B and these rules. Such permits are issued for a term of one year and are renewable. Temporary permits may be renewed if the director finds that the public interest will be best served by granting a renewal and the applicant has complied with the terms of the previous temporary permit.

a. Temporary permits shall incorporate as a condition a compliance schedule that specifies how and when the applicant will meet the requirements of Iowa Code chapter 455B and these rules.

b. The decision of the director whether to issue a temporary permit, which is discretionary, shall be a final decision. Once a temporary permit has been issued, it may be suspended or revoked only as provided in Iowa Code section 455B.305 and 567—Chapter 7.

115.3(3) *Developmental permit.* The director may issue a developmental permit for construction and operation of a sanitary disposal project which is not specifically described in these rules if the permit applicant demonstrates at a public hearing that the proposed project can provide satisfactory disposal of solid waste without adverse health-related or environmental effects.

a. No such permit shall be issued until the director, after public hearing, considers and approves the proposed project.

b. A developmental permit shall be issued for a term of no less than one year and no more than three years.

c. A developmental permit may be renewed if the director finds, following public hearing, that the sanitary disposal project provided satisfactory disposal of solid waste without adverse health-related or environmental effects over the term of the prior permit.

115.3(4) *Closure permit.* This permit is issued by the director under the authority of Iowa Code section 455B.305 for sanitary disposal projects which no longer accept solid waste. Such permits are issued for a term of 30 years. If the postclosure period is extended, the term of subsequent renewal of the permit will be determined on a site-specific basis. A sanitary disposal project shall require a closure permit until

the department determines that postclosure maintenance, postclosure monitoring, and operation of the required leachate control system are no longer necessary.

a. Application shall be filed at the time of department notification of intended closure as required by this rule.

b. The application for issuance of this permit shall be based on a previously approved comprehensive plan and other rules adopted pursuant to the authority of Iowa Code section 455B.306.

c. This permit shall require submission of an annual audit report detailing the status of the financial instrument and other funds as required to guarantee completion of postclosure and monitoring requirements.

d. This permit may be modified by the issuance of an amendment by the department. Requests for permit amendments may be initiated by the department or by the permit holder.

e. At the end of the applicable postclosure period, and upon satisfactory completion of all required postclosure activities as established by Iowa Code chapter 455B, written notification shall be issued by the director stating that a permit is no longer required for the facility.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—115.4(455B) Applications for permits.

115.4(1) *Application requirements for permits and renewals.* More information can be found in 567—subrule 102.2(1).

115.4(2) *Time limit on submittal of information.*

a. Sanitary disposal project permit applications. If an application for a sanitary disposal project permit is found by the department to be incomplete, the applicant will be notified of that fact and of the specific deficiencies. Thirty days following such notification, the application may be returned by the department as incomplete without prejudice to the applicant's right to reapply. The applicant may be granted, upon request, an additional 30 days to complete the application.

b. Application for renewal or amendment of a sanitary disposal project. If an application for a sanitary disposal project permit renewal or amendment is found by the department to be incomplete, the applicant will be notified of that fact and of the specific deficiencies. Thirty days following such notification, the application may be denied by the department.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—115.5(455B) Preparation of plans. All plans and specifications submitted in the application for a sanitary disposal project permit or a developmental permit shall be prepared in conformance with Iowa Code chapter 542B and shall be submitted in triplicate.

567—115.6(455B) Construction and operation. All sanitary disposal projects shall be constructed and operated according to the plans and specifications as approved by the department and the terms of the permit. The approved plans and specifications shall constitute a term of the permit.

567—115.7(455B) Compliance with rule changes.

115.7(1) *Design and construction.* Sanitary disposal projects designed and constructed in accordance with rules in effect at the time of construction shall not be required to be redesigned or reconstructed due to subsequent rule changes unless the department finds that such facilities are causing pollution. Such facilities shall be brought into compliance with rules in effect at the time of reconstructing, enlarging, or otherwise modifying the sanitary disposal project, or at the time of permit renewal.

115.7(2) *Operation.* If any new rule conflicts with an operating procedure prescribed in the engineering plans or the permit of a sanitary disposal project, the operation shall conform with the new rule.

567—115.8(455B) Amendments. Sanitary disposal project permits, temporary permits, and developmental permits may be modified by the issuance of an amendment by the department, except as provided in 115.7(1).

567—115.9(455B) Transfer of title and permit. If title to an operational sanitary disposal project is transferred, and the transferee desires to continue operation of the project, the transferee shall apply in writing to the department within 30 days of the transfer for a transfer of the permit.

115.9(1) The department shall transfer the permit when it determines that the sanitary disposal project is in compliance with Iowa Code chapter 455B and these rules and the terms of the permit, and that the transferee possesses the equipment and personnel to operate the project in conformance with Iowa Code chapter 455B and these rules and the terms of the permit.

115.9(2) No permit shall be valid after 60 days following transfer of title, unless the permit has been transferred by the department to the new titleholder pursuant to this rule.

567—115.10(455B) Permit conditions. Any permit may be issued subject to conditions specified in writing which are necessary to ensure that the sanitary disposal project can be constructed and operated in compliance with these rules.

567—115.11(455B) Effect of revocation. If a permit for a sanitary disposal project held by any public or private agency is revoked by the director, no new permit shall be issued to that agency for that disposal project for a period of one year from the date of revocation. Such revocation shall not prohibit the issuance of a permit for the disposal project to another public or private agency.

567—115.12(455B) Inspection prior to start-up. The department shall be notified when the initial construction of a sanitary disposal project has been completed in order that an inspection may be made to determine that the project is constructed as designed. No solid waste shall be accepted by a sanitary disposal project until that project has been inspected and approved by the department.

567—115.13(455B) Primary plan requirements for all sanitary disposal projects. Every application for any permit issued by the department shall include the following. In addition, every application shall include the particular information required by the chapter describing the type of project to be constructed.

115.13(1) The name, address and telephone number of:

- a. Owner of site where project will be located.
- b. Permit applicant.
- c. Official responsible for operation of project.
- d. Design engineer.
- e. Agency to be served by the project, if any.
- f. Responsible official of agency served, if any.

115.13(2) A legal description of the site.

115.13(3) A map or aerial photograph locating the boundaries of the site and identifying:

- a. North or other principal compass points.
- b. Zoning and land use within one-half mile.
- c. Haul routes to and from the site with load limits or other restrictions.
- d. Homes and buildings within one-half mile.
- e. Section lines or other legal boundaries.
- f. Any nearby runway used or planned to be used by turbojet or piston-type aircraft at FAA-certified airports.

115.13(4) Type, source, and expected volume or weight of waste to be handled per day, week or year.

115.13(5) An organizational chart.

115.13(6) A detailed description of the disposal process to be used.

115.13(7) A table listing the equipment to be used, its design capacities and expected loads.

115.13(8) A contingency plan detailing specific procedures to be followed in case of equipment breakdown, maintenance downtime, or fire in equipment or vehicles, including methods to be used to remove or dispose of accumulated waste.

115.13(9) Proof of the applicant's ownership of the site or legal entitlement to use the site for the disposal of solid waste for the term of the permit for which application is made.

115.13(10) Closure/postclosure plan.

- a.* A closure/postclosure plan shall be submitted which:
 - (1) Details how and when the facility will be closed in accordance with applicable requirements of this chapter.
 - (2) Describes the proposed groundwater monitoring plan, leachate control system, and site inspection and maintenance activities necessary to comply with this chapter.
 - (3) States the name, address and telephone number of the person or office to serve as a contact with regard to the facility during the postclosure period.
 - b.* The closure/postclosure plan shall be submitted at the time of the first permit renewal after January 15, 2003, but not less than 180 days prior to closure.
- 115.13(11)** Such other information as may be required by the director.

567—115.14(455B) Hydrologic monitoring system planning requirements.

115.14(1) All plans, specifications and other documentation required herein must be developed by an engineer registered in Iowa.

115.14(2) All sanitary disposal projects shall conduct a soil and hydrogeologic investigation which conforms to the requirements of this chapter. The purpose of soil and hydrogeologic investigation is to obtain data to determine potential routes of contaminant migration from a site via groundwater. The rules that follow set forth minimum requirements for such investigations. Additional work and use of other methods (e.g., geophysical techniques) are encouraged.

567—115.15(455B) Soil investigation.

115.15(1) *Soil borings.*

a. Number of borings. A sufficient number of soil borings shall be made to accurately identify the hydrogeologic variations of the site. For new sites, the minimum number of borings required is 10 for sites of less than 10 acres, 20 for sites of 10 to 50 acres, and 20 plus an additional boring for every 10 acres above 50 acres for sites larger than 50 acres. Fewer borings may be needed for existing sites, depending on previous work done at the site. Also, no borings will be required in existing fill areas. The department may require additional borings based on the geological complexity of the site.

b. Depth of borings. All borings must extend a minimum of 25 feet deep and at least 10 feet deep below the water table. However, borings in proposed fill areas shall be terminated 10 feet above the uppermost aquifer or be grouted to provide such separation. At least half the borings located outside the existing or proposed fill area shall extend 10 feet into the uppermost aquifer, 50 feet below the water table, or 10 feet into bedrock. At least one boring shall extend 10 feet into bedrock or 100 feet below the lowest ground surface elevation.

c. Boring method. Borings shall comply with the applicable portions of rule 567—115.23(455B). The preferred boring method is hollow stem auger, although it may be necessary to use other methods at greater depths and in bedrock. When wet drilling methods are used for boring in which monitoring wells or piezometers are installed, the drilling fluid and methods and development procedures shall be approved by and documented with the department.

d. Assurance that soil boring samples have been taken at the site. The soil boring samples must be kept by the permit applicant until the permit is issued and must be made available to the department if the department requests them.

115.15(2) *Soil samples.* Samples shall be collected at 5-foot intervals and at every change in stratum. These samples shall be obtained using a split spoon sampler and the procedures of the standard penetration test, conducted in accordance with American Society of Testing and Materials (ASTM) Standard D1586. This test simply counts the blows of a 140-pound hammer falling 30 inches on the sampler per foot penetration of the sampler. A minimum of one undisturbed Shelby tube sample shall be obtained in the uppermost cohesive stratum at or below the lowest depth at which solid waste will be disposed of. Shelby tube sampling shall be in accordance with ASTM Standard D1587. Samples shall be clearly marked, preserved, and maintained for future inspection. Samples selected for laboratory analysis shall be preserved and transported to the laboratory in accordance with ASTM Standard D422.

115.15(3) *Laboratory test of discrete soil samples.* Laboratory tests of discrete soil samples shall be conducted to correlate strata between soil borings, obtain permeability data on each stratum, and design monitoring wells.

a. Permeability tests. Permeability tests using a constant-head or falling-head permeameter shall be run on a minimum of one sample from each Shelby tube sample. Each sample shall be from a different soil boring representing a different area of the site.

b. Grain size distribution. Grain size distribution tests shall be conducted on a minimum of one sample from each distinct stratum. Analysis shall be conducted in accordance with ASTM Standards D422 and D1140. Estimates of permeability shall be developed for each sample tested based on grain size distribution and standard penetration blow counts.

567—115.16(455B) Hydrogeologic investigation.

115.16(1) *Groundwater level measurements.* The elevation of the water table shall be determined at or near the location of each soil boring which penetrates the water table. The water table may be determined using a completed water table monitoring well, or piezometer. The bottom of a piezometer used to measure water table elevation shall be no more than 5 feet below the water table. The apparent horizontal groundwater flow direction shall be determined based on water table measurements. Vertical groundwater flow shall then be assessed in at least two profiles approximately parallel to the apparent horizontal flow direction. Vertical groundwater flow shall be assessed using at least two well clusters per profile. Each well cluster shall contain a water table monitoring well or piezometer and additional water level monitoring points based on site conditions as follows:

a. If the water table is in the uppermost aquifer, one additional water level monitoring point shall be located near the base of the aquifer or at least 20 feet below the base of the water table monitoring point. This additional monitoring point may not be required if the aquifer is less than 20 feet thick.

b. If the uppermost aquifer is less than 50 feet below the water table, an additional water level monitoring point shall be located at the top of the aquifer.

c. If the uppermost aquifer is more than 50 feet below the water table, additional water level monitoring points shall be placed at depths of 30 feet and 50 feet below the water table.

d. If required, the one deeper soil boring into bedrock shall be used as a site for one well cluster. Water table monitoring points in this cluster shall correspond to the other well cluster used for a profile. In addition, water level monitoring points shall be placed at the bottom of the boring and, if possible, at the top and bottom of the uppermost aquifer. Groundwater level measurements shall be made after the water levels have stabilized in the monitoring point; at least 24 hours after completion and bailing of the monitoring well, or installation of the piezometer. The water level in existing wells shall be observed and recorded prior to bailing. Each set of water level measurements shall be made in as short a time frame as possible not to exceed 8 hours.

115.16(2) *In-situ permeability tests.* In-situ permeability tests shall be conducted on each monitoring well and piezometer in each well cluster.

a. Pumping test. If more than one monitoring point is located in the uppermost aquifer, a pumping test shall be conducted at one or more upper aquifer monitoring points. A pumping test involves pumping at a constant rate from one well while observing water levels in other wells. The pumping rate shall be as high as possible without dewatering the well. Water level measurements in other uppermost aquifer wells shall be measured at frequent intervals near the start of the test and then at progressively longer intervals (e.g., 1-minute intervals to 10 minutes, 5-minute intervals to an hour, 15-minute intervals to 2 hours, and half-hour intervals thereafter). Continuous water level recording is preferable.

Water levels in wells not located in the uppermost aquifer shall be recorded throughout the test at regular intervals (e.g., every half hour). Water levels in all wells shall be measured 24 hours prior to the test and just before the test. The test duration shall be at least 4 hours and continue until a stabilized drawdown condition is observed. Longer tests may be necessary if other uppermost aquifer monitoring points are slow to respond. Water level readings shall be recorded through the recovery phase of the water table.

b. Bail and slug tests. Monitoring wells and piezometers located in materials with low permeabilities shall be tested using bail or slug tests. These tests involve rapidly removing or adding a known volume of water to a well and then recording water levels in the well as the well recovers to its original level.

Typically, the necessary frequency of measurements will be similar to that required of pumping tests. In materials of very low permeability, less frequent measurements are necessary. In materials of higher permeability, more frequent measurements may be necessary.

567—115.17(455B) Hydrologic monitoring system planning report requirements. The hydrologic monitoring system planning report shall contain a description of field investigations and presentation of results including a description of the field and laboratory testing methods; a presentation of the test results and field measurements; documentation of a reasonable effort to inventory all active, unused, and abandoned wells within one mile of the facility; and the identification of all public water supply wells and wells with water withdrawal permits pursuant to 567—Chapters 50 to 52 within three miles of the facility. Well logs, other available information on well construction, static water levels, and usage shall be obtained. The well inventory shall be based on thorough reviews of state and local collections of well logs and, when possible, interviews or surveys of well owners. Also to be included are maps showing the location of soil borings, other field tests/measurements, and existing wells.

567—115.18(455B) Evaluation of hydrogeologic conditions.

115.18(1) Based on soil boring and other available information, a description of the site geology shall be made. This description shall include preparation of geologic cross sections of sufficient number and spacing (no fewer than four at every site) to adequately define all areas of the site and of sufficient detail to adequately depict major stratigraphic and structural trends and reflect geologic structural features in relation to groundwater flow. Each pair of cross sections must be as near to perpendicular as possible to adequately portray the site geology.

115.18(2) A description of the hydrogeologic unit(s) within the saturated zone shall be made including thickness; depth; hydraulic properties, such as transmissivity and storage coefficient or specific yield; description of the role of each as confining bed, aquifer, or perched saturated zone and its actual or potential use as a water supply aquifer.

115.18(3) All groundwater flow paths from the site shall be identified, including both horizontal and vertical components of flow. A contour map of the water table shall be presented showing horizontal flow paths. A potentiometric surface map of the uppermost aquifer showing horizontal flow paths shall also be presented, if different from the water table. Vertical flow paths shall be shown in at least two profiles approximately parallel to the direction of horizontal flow. Vertical flow paths shall be determined by water level measurements from clustered wells at different depths, if possible. An evaluation of vertical groundwater flow based on the hydrologic properties of the various strata encountered at the site, estimated groundwater flow and recharge rates, and known information on hydraulic head shall also be made.

115.18(4) The seasonal, temporal and artificially induced variations in groundwater flow shall be evaluated. Temporal variations occur due to natural events, such as rainfall. The addition of tile lines, removal of overburden, or deposition of wastes would constitute artificially induced variations.

115.18(5) Surface water flow paths from the site shall be identified on topographic contour maps.

567—115.19(455B) Monitoring system plan. A hydrologic monitoring system shall be designed to intercept the groundwater and surface water flow paths from the site. The plan shall include proposed locations and depths for monitoring wells in accordance with monitoring well siting criteria in rule 567—115.22(455B). Monitoring wells shall be designed in accordance with rule 567—115.23(455B). The surface water monitoring plan shall include monitoring points on all standing and flowing bodies of water which will receive surface runoff or groundwater discharge from the site. For streams, sampling points upstream and downstream of areas of potential impact from the site shall be selected.

567—115.20(455B) Sampling protocol. At a minimum, the sampling protocol must include the following:

1. Order in which monitoring points are to be sampled, all tests and procedures needed at each monitoring point and the order in which these procedures will be carried out, equipment and containers to be used, procedures and precautions for their use; precautions to avoid introducing contaminants from outside sources into monitoring wells or samples; and how equipment must be cleaned between uses;
2. Procedures for evacuating each monitoring well prior to each water quality sampling;

3. Procedures for handling field blanks and other quality assurance samples at the facility and in transit to and from the laboratory;
4. Procedures for field filtration of samples, if required;
5. Procedures for sample preservation;
6. Procedures for sample collection, labeling and handling at the facility and during transport to the laboratory;
7. Procedures for recording field observations and measurements;
8. Procedures for records maintenance and data analysis; and
9. Procedures for sampling surface water monitoring points including exact sampling locations and depths.

567—115.21(455B) Monitoring well maintenance and performance reevaluation plan.

115.21(1) A monitoring well maintenance and performance reevaluation plan shall be included as part of the hydrologic monitoring system plan. The plan shall ensure that all monitoring points remain reliable.

115.21(2) The plan shall provide for the following:

- a. A biennial examination of high and low water levels accompanied by a discussion of the acceptability of well location (vertically and horizontally) and exposure of the screened interval to the atmosphere.
- b. A biennial evaluation of water level conditions in the monitoring wells to ensure that the effects of waste disposal or well operation have not resulted in changes in the hydrologic setting and resultant flow paths.
- c. Annual measurement of well depths to ensure that wells are physically intact and not filling with sediment.
- d. Every five years conduct in-situ permeability tests on monitoring wells to compare test data with those collected originally to determine if well deterioration is occurring.

567—115.22(455B) Monitoring well siting requirements.

115.22(1) Downgradient monitoring wells. Downgradient monitoring wells must be located to provide a high level of certainty that releases of contaminants from the site can be promptly detected. Downgradient monitoring wells shall be placed along the site perimeter, within 50 feet of the planned liner or waste boundary unless site conditions dictate otherwise, downgradient of the facility with respect to the hydrologic unit being monitored. For those facilities which are long-term, multiphase operations, the department may establish temporary waste boundaries in order to define locations for monitoring wells. The convergence of groundwater paths to minimize the overall length of the downgradient dimension may be taken into consideration in the placement of downgradient monitoring wells.

115.22(2) Water table wells. At least three downgradient water table monitoring wells shall be installed at each facility. The maximum spacing between wells shall be 600 feet.

115.22(3) Uppermost aquifer monitoring wells. If different from water table monitoring wells, at least three uppermost aquifer monitoring wells shall be installed at each facility. Uppermost aquifer monitoring wells shall be spaced no more than 600 feet apart. If the uppermost aquifer is located more than 50 feet below the water table, this requirement may be relaxed, although at least one downgradient uppermost aquifer monitoring well will be required.

115.22(4) Other downgradient monitoring wells. Additional downgradient monitoring wells will be required if the water table and uppermost aquifer monitoring wells do not intercept most vertical flow paths from the site. In such situations, monitoring wells shall be placed at the appropriate depths to intercept the remaining flow paths and shall be spaced at no more than 600 feet apart.

115.22(5) Upgradient monitoring wells. Upgradient monitoring wells shall not be affected by the site. At least one upgradient monitoring well shall be installed into each stratum being monitored by downgradient monitoring wells. If it is not possible to actually locate a monitoring well upgradient of the site, the well shall be placed as near the site as feasible without being affected by the site.

115.22(6) Monitoring point identification system. The various types of monitoring points shall be identified as follows:

a. Monitoring Well	MW# _____
b. Surface Water Monitoring Point	SW# _____
c. Piezometer	PZ# _____

Each monitoring point must have a unique number, regardless of the type of monitoring point, and that number must never change.

567—115.23(455B) Monitoring well/soil boring construction standards.

115.23(1) General considerations.

a. Contractors involved in construction of monitoring wells and piezometers and soil boring activities shall be registered with the department as required in 567—Chapter 82.

b. To the extent possible, all monitoring well construction materials must not absorb, desorb, react or otherwise alter the screened soil stratum or the quality of the groundwater being sampled. Galvanized metal, glues, welding solvents, pipe thread lubricants and other foreign substances must not be used.

c. All monitoring well construction materials must be protected from contamination prior to installation.

d. A typical cross section of a properly constructed monitoring well is shown in Figure 1 at the end of this chapter.

115.23(2) Casings.

a. As a minimum, the diameter of the inner casing (see Figure 1) of a monitoring well must be at least 2 inches.

b. Plastic cased wells must be constructed of materials with threaded, nonglued joints which do not allow water infiltration under natural subsurface pressure conditions or when the well is evacuated for sampling.

c. Well casings must provide structural stability to prevent casing collapse during installation as well as drill hole integrity when installed. Flush joint casing is required for small diameter wells installed through hollow stem augers.

d. Well casings must be constructed of inert materials such as polytetrafluorethylene, stainless steel or polyvinyl chloride. The department may approve other casing materials if the owner or operator can demonstrate that the material has a low potential for biasing the water quality parameters of samples. The department may approve the construction of composite well casings (casings with less inert materials in the unsaturated zone).

115.23(3) Well screens.

a. Slot size will be based on sieve analysis of the sand and gravel stratum or filter pack. The slot size must hold out 35 percent to 60 percent of the formation material and not less than 90 percent of the filter pack.

b. Slot configuration and open area must permit effective development of the well.

c. Screen length. Maximum screen length shall be 10 feet except for water table wells in which the screen must be of sufficient length to accommodate expected seasonal fluctuations of the water table. The screen shall be placed 5 feet above and below the observed water table, unless local conditions are known to produce greater fluctuations. Screen length for piezometers shall be 2 feet or less. Multiple screened single-cased wells are prohibited.

115.23(4) Filter pack.

a. To prevent other materials from coming in contact with the well screen, the filter pack shall extend 18 inches above and 12 inches below the well screen.

b. Size must be based on sieve analysis of sand and gravel stratum. The filter pack material must be 2.5 to 3 times larger than 50 percent grain size of the zone being monitored.

115.23(5) Grouting.

a. The annular space above the filter pack must be sealed with expanding cement or bentonite grout. The vertical dimension of this seal must be a minimum of 3 feet.

b. The annular space between the seal and to just below the frostline must be backfilled with an impervious material such as bentonite grout or expanding cement.

c. The remaining annular space must be sealed with bentonite grout to the ground surface.

d. Grouting materials must be installed from the top of the filter pack up in one continuous operation with a tremie tube.

115.23(6) Well protection.

a. Plastic cased wells. A protective metal casing must be installed around the well casing. The inside diameter of the protective metal casing shall be at least 2 inches larger than the outside diameter of the well casing. The protective metal casing shall extend from a minimum of 1 foot below the frostline to slightly above the well casing top. The protective casing shall be shortened or omitted if it covers part of the well screen. The protective casing shall be sealed or immobilized with a concrete plug around the outside. The bottom of the concrete plug must extend at least 1 foot below the frostline. The concrete plug shall be shortened if it covers part of the well screen. The top of the plug shall extend approximately 3 to 6 inches above the ground surface and shall slope away from the well approximately 3 feet. Soil may be placed above the plug. The inside of the protective casing shall be sealed with a bentonite grout. A vented cap shall be placed on the well casing and a protective locking cap on the metal casing. The lockable cap must be kept locked when the well is not in use.

b. Metal cased wells. The concrete plug shall extend from at least 1 foot below the frostline to approximately 3 to 6 inches above the ground surface and shall slope away from the well approximately 3 feet. Soil may be placed on top of the concrete plug. A vented, locking cap shall be placed on the casing. The lockable cap must be kept locked when the well is not in use. See Figure 1.

c. To protect against accidental damage, a ring of brightly colored posts or other protective devices must be installed around all wells.

115.23(7) Well drilling.

a. The owner or operator must ensure that in all phases of drilling, well installation and completion, the methods and materials used do not introduce substances that may alter the results of water quality analyses.

b. Well drilling equipment coming into contact with contaminants in the borehole or aboveground must be thoroughly cleaned to avoid spreading contamination to other depths or locations. Contaminated materials or leachate from wells must not be discharged onto the ground surface or into ponds or streams so as to cause environmental harm in the processes of drilling or well development.

c. The owner or operator must ensure that, at a minimum, the following well design and construction log information be retained at the site and a copy of this information be sent to the department:

- (1) Date/time of construction;
- (2) Name and address of the driller;
- (3) Drilling method and drilling fluid used;
- (4) Soil sampling methods;
- (5) Surveyed location (± 0.5 ft.);
- (6) Soil and rock classifications;
- (7) Field observations;
- (8) Well name/number;
- (9) Borehole diameter and well casing diameter;
- (10) Well depth (± 0.1 ft.);
- (11) Water level measurements;
- (12) Drilling and lithologic logs;
- (13) Casing materials, inside diameter and weight or wall thickness;
- (14) Screen materials;
- (15) Casing and screen joint type;
- (16) Screen slot size/length;
- (17) Filter pack material/size (depths from ____ to ____);
- (18) Filter pack volume;
- (19) Filter pack replacement method;
- (20) Sealant materials (depths from ____ to ____);
- (21) Sealant volume;
- (22) Sealant placement method;

- (23) Grouting schedule and materials;
- (24) Surface seal design/construction (depths from ____ to ____);
- (25) Type of protection well cap;
- (26) Ground surface elevation (± 0.1 ft.);
- (27) Well cap elevation (± 0.01 ft.);
- (28) Top of casing elevation (± 0.01 ft.); and
- (29) Detailed drawing of well (including dimensions).

115.23(8) *Well development.* Prior to use of the monitoring well for water quality monitoring purposes, well development is required to ensure the collection of representative groundwater samples. Procedures used in well development involve using a surge block, bailing or surging by pumping of compressed inert gas to produce a movement of water at alternately high and low velocities into and out of the well screen and gravel pack in order to loosen and remove fine materials. Development of low hydraulic conductivity wells may require the circulation of water down the well casing, out through the screen and gravel pack, and up the open borehole prior to the placement of grout or seal in the annulus. Any additional water used must be of a quality so as not to interfere with future groundwater quality determinations. Following surging, the well is pumped until the water does not contain significant quantities of suspended solids.

567—115.24(455B) Sealing abandoned wells and boreholes. Boreholes, piezometers and observation wells not used for groundwater monitoring must be sealed. The location of the abandoned well or borehole shall be documented in writing with reference to the landfill's coordinate system and method of sealing. The document must be retained at the landfill with a copy sent to the department.

115.24(1) *Sealing boreholes.* The borehole shall be filled by extending a tremie tube to the bottom of the hole. Bentonite or expanding cement grout shall be applied through the tube to the bottom of the hole and the tremie tube shall be raised as the hole is filled from the bottom upward. The end of the tremie tube shall be submerged in the grout while filling. The borehole shall be filled from the base of the boring all the way to the ground surface.

115.24(2) *Sealing abandoned monitoring wells.*

a. Well is known to be constructed properly with impermeable grout that was installed from the bottom up using a tremie tube. Any existing protective metal casing shall be removed by vertically pulling it off the well. With a tremie tube, the inner well casing shall be filled with an impermeable grout slurry from the bottom to ground surface. After 24 hours, the grout shall be retopped if it has settled below the existing ground surface.

b. Well construction is improper or undocumented. An attempt should be made to remove the well casing. If the well casing cannot be removed, the well casing shall either be drilled around with a hollow stem auger of large inside diameter or shall be drilled out with a standard casing bit or solid stem auger with a boring diameter greater than the initial diameter of the hole. Drilling shall be to the maximum depth of the previously drilled boring. The drilling debris shall be cleaned from the interior of the auger or borehole. The borehole shall be sealed with an impermeable grout using a tremie tube. If the soil conditions permit the sealing to be conducted in a continuous operation, the tremie tube shall be submerged in the grout at all times. After 24 hours, the grout shall be retopped if it has settled below the ground surface.

c. Monitoring wells in future fill areas. The well shall be removed and sealed as described in the procedures for sealing boreholes in 115.24(1).

567—115.25(455B) Variance from design, construction, and operation standards. Pursuant to the authority of Iowa Code section 455B.303, a variance from the specific requirements of rules 567—115.14(455B) to 567—115.25(455B) may be issued, modified, or denied by the director. The request shall also include any supporting information to be considered by the director in the formulation of a decision.

567—115.26(455B) General requirements for all sanitary landfills.

115.26(1) *Plan requirements.* The plans for all sanitary landfills shall include the following:

a. The map and aerial photograph required in subrule 115.13(3) of sufficient scale to show all homes, buildings, lakes, ponds, watercourses, wetlands, dry runs, rock outcroppings, roads and other applicable details including topography and drainage patterns. All wells shall be identified on the map or aerial photograph and a bench mark shall be indicated.

b. A plot drawing in appropriate scale of the site and the immediately adjacent area showing dimensions, topography with appropriate contour intervals, drainage patterns, known existing drainage tiles, locations where any geologic samples were taken, all water wells with their uses, and present and planned pertinent features including but not limited to roads, fencing, and cover stockpiles.

c. Detailed engineering drawing of the site showing all initial and permanent roads, buildings and equipment to be installed; unloading and holding areas; fences and gates; landscaping and screening devices; personnel and maintenance facilities; and sewer and water lines.

d. A liner system that meets the following requirements, depending upon the type of waste material disposed of:

(1) Municipal solid waste landfills (MSWLFs) shall have a composite liner system consisting of two components. The upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil as specified in subparagraph 115.26(1)“d”(2). FML components consisting of high-density polyethylene (HDPE) shall be at least 60-mil thick. The FML must be installed in direct and uniform contact with the compacted soil component. The requirements for MSWLF facilities under this subparagraph were effective November 13, 1996, and apply to liner and cover systems that had not been installed by that date.

(2) Nonmunicipal solid waste landfills may utilize a liner system meeting 115.26(1)“d”(1) or shall have a soil liner consisting of at least four feet of recompacted soil. The description, source and volume of the material to be used for the landfill liner, including the method of installation, must be provided. The coefficient of permeability must be 1×10^{-7} cm/sec (0.00028 ft/day) or less as determined by appropriate laboratory analysis. The percent of standard or modified proctor density at moisture contents consistent with expected field conditions and corresponding to a measured coefficient of permeability equal to or less than 1×10^{-7} cm/sec shall be determined in the laboratory. The soil shall be placed in lifts not to exceed 8 inches in thickness. A minimum of one field density test shall be performed per lift per acre to verify that the density determined by the laboratory analysis as correlated to permeability has been achieved. Results of field density tests shall be submitted to the department prior to the placement of solid waste.

e. Alternative liner systems.

(1) The department may approve an alternative to the liner system specified in subparagraph 115.26(1)“d”(1) provided that the alternative liner system design has included certification by a professional engineer registered in Iowa stating that the proposed alternative liner system will ensure that the contaminant concentration values listed in federal regulations under 40 CFR 258, Subpart D, Table 1, will not be exceeded in the uppermost aquifer at the designated monitoring points of compliance as specified by the department.

This point of compliance shall be no more than 150 meters from the waste management boundary. This point of compliance is to be utilized for the purpose of certifying the alternative design only. All operational issues related to monitoring systems, compliance determinations, groundwater assessments, and remedial measures are governed by the appropriate relevant rules in this chapter and 567—Chapter 111. The certification shall be on a form furnished by the department which shall include space for identification of the sources of data utilized; formulas, models, tests or other methods utilized to determine contaminant concentrations at the points of compliance; and all references or guidance documents relied upon for the techniques or methods applied. A copy of all data utilized, formulas, models, tests or other methods utilized to determine contaminant concentrations at the point of compliance shall be placed in the facility's official files prior to operation of the landfill.

(2) An alternative liner system to that required in subparagraph 115.26(1)“d”(2) may be approved by the director if the design of the liner system is equivalent to the soil liner required in subparagraph 115.26(1)“d”(2) in performance, longevity and protection of the groundwater; or based on the specific type of waste to be disposed of, the design of the liner system offers equivalent protection of the groundwater. Undisturbed soil will not be allowed for use as liner material.

f. Diversion and drainage structures designed to prevent ponding, infiltration, inundation, erosion, slope failure and washout from surface runoff due to a 25-year, 24-hour rainfall event, as shown in the department of agriculture and land stewardship publication "Climatology of Iowa Series #2-1980."

g. A leachate collection, storage and treatment and disposal system designed to protect the soils, surface water, and groundwater from leachate contamination. This system shall be designed to operate during the active life of the site and during the postclosure period required by Iowa Code section 455B.304.

(1) The design and construction of the system must be in accordance with subrule 115.26(3) and be coordinated with the planned phase development of the site and the timing of leachate generation.

(2) The potential for leachate generation shall be evaluated in determining the design for the facility.

(3) The plan must include proposed quality assurance and quality control testing to be performed during installation and operation of the system. This plan shall include procedures that will be followed during installation of the leachate collection system and during normal landfill operations to ensure the system's integrity and design standards.

h. A drawing of the scheme of development including any excavation, trenching, and fill shown progressively with time. The methods to be used to ensure compliance with the scheme and to provide vertical and horizontal controls shall be described.

i. Cross-sectional drawings showing progressively with time the original and proposed elevation of excavating, trenching, and fill.

j. Evidence that the proposed plan has been reviewed by the local soil conservation district commissioner and that the technical assistance of the soil conservation district will be utilized to facilitate compliance with wind and water soil loss limit regulations provided for in Iowa Code sections 467A.42 to 467A.51.

k. An ultimate land use proposal, including intermediate stages, with time schedules indicating the total and complete land use. Final elevations, grades, permanent drainage structures, monitoring or treatment facilities and permanent improvements of the completed landfill shall be included. Any supporting drawings to the ultimate land use proposal shall be in appropriate scale.

l. Information describing:

(1) Source, volume, and characteristics of cover material;

(2) Area of site in acres;

(3) Areas to be used for salvaging and the burning of diseased trees.

m. A report consisting of information verifying that the portion of the site to be filled is:

(1) So situated as to obviate any predictable lateral movement of significant quantities of leachate from the site to standing or flowing surface water or to shallow aquifers that are in actual use or are deemed to be of potential use as a water resource.

(2) So situated that the base of the proposed site is at least 5 feet above the high water table unless a greater separation is required to ensure that there will be no significant adverse effect on groundwater or surface waters or a lesser separation is unlikely to have a significant adverse effect on groundwater and surface waters.

(3) Outside a flood plain or shoreland, unless proper engineering and sealing of the site will render it acceptable and prior approval of the department under Title V of these rules and, when necessary, the U.S. Corps of Engineers is obtained.

(4) So situated to ensure no adverse effect on any well within 1,000 feet of the site existing at the time of application for the original permit which is being used or could be used without major renovation for human or livestock consumption or at least 1,000 feet from any such well unless hydrologic conditions are such that a greater distance is required to ensure no adverse effect on the well.

(5) So situated to ensure no adverse effect on the source of any community water system in existence at the time of application for the original permit within one mile of the site or at least one mile from the source of any community water system in existence at the time of application for the original permit unless hydrologic conditions are such that a greater distance is required to ensure no adverse effect on the water system.

(6) At least 20 feet from the adjacent property line unless there is a written agreement with the owner of the abutting property. The report shall verify that the portion to be filled is at least 50 feet from the

adjacent property line. The written agreement shall be filed with the county recorder and shall become a permanent record of the property.

(7) Beyond 500 feet from any existing habitable residence unless there is written agreement with the owner of the residence and the site is screened by natural objects, plantings, fences or by other appropriate means. The residence must be in existence on the date of application for the original permit from the department. The written agreement shall be filed with the county recorder and recorded for abstract of title purposes, and a copy submitted to the department.

n. Should conditions in violation of 115.26(1) “*m*”(1), (2), (3), (4), or (5) exist, the original plan shall detail how the site is to be engineered to provide equivalent protection to the water resources. The applicant shall have the burden of showing that equivalent protection will be provided.

o. If sewage sludge is to be disposed of at the site, the characteristics of the sludge and the method of disposal shall be described. If sludge is to be utilized for land application, such utilization shall be in conformance with 567—Chapter 67.

p. The required soil and hydrogeologic design information specified in rules 567—115.14(455B) through 567—115.25(455B).

q. Such additional data and information as may be deemed necessary by the director to evaluate a proposed sanitary landfill.

r. When a new landfill or lateral expansion is located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any airport runway end used by only piston-type aircraft, the plan must contain a notice that the landfill’s official files will include the following demonstration: that the site is designed and will be operated so that it does not pose a bird hazard to aircraft. For any new site or a lateral expansion within a five-mile radius of any airport runway end used for turbojet or piston-type aircraft, the plan must show that the Federal Aviation Administration has been notified. For existing landfills located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any runway end used by only piston-type aircraft, the owner or operator must prepare the demonstration required above in this paragraph and notify the director that it has been placed in the facility’s official files.

s. When a new landfill or lateral expansion is located within 200 feet of a fault that has had displacement in Holocene time, the plan must contain a notice that the facility’s official files will include the following demonstration: that an alternative setback distance of less than 200 feet will prevent damage to the structural integrity of the site and will be protective of human health and the environment.

t. When a new landfill or a lateral expansion is located in seismic impact zones, the plan must contain a notice that the facility’s official files will include the following demonstration: that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in the lithified earth material for the site.

u. When a new facility or lateral expansion is located in an unstable area, the plan must contain a notice that the facility’s official files will include the following demonstration: that engineering measures have been incorporated into the site design to ensure that the integrity of the structural components of the site will not be disrupted. The demonstration must consider the on-site or local soil conditions that may result in significant differential settling, on-site or local geologic or geomorphologic features, and on-site or local human-made features or events (both surface and subsurface). For existing facilities located in an unstable area, the owner or operator must prepare the above demonstration required in this paragraph and notify the director that it has been placed in the facility’s official files.

115.26(2) *General operating requirements for all sanitary landfills.* All sanitary landfills shall be operated in conformance with this subrule. The plan submitted shall detail how the sanitary landfill will comply with these requirements.

a. Solid waste shall be unloaded at the operating area only when an operator is on duty at that area. Solid waste may be deposited in storage containers inside the site under the supervision of an attendant or operator.

b. Access to the site shall be restricted and a gate shall be provided at the entrance to the site and shall be kept locked when an attendant or operator is not on duty.

c. A copy of the permit, engineering plans and reports shall be kept at the site at all times unless the applicant demonstrates to the department that, on the basis of the characteristics of the waste to be handled at the site and the times of operation of the site, such is unnecessary.

d. Sites not open to the public shall have a permanent sign posted at the site entrance specifying:

- (1) Name of operation.
- (2) The site permit number.
- (3) That the site is not open to the public.
- (4) The name and telephone number of the responsible official.

e. Solid waste shall not be deposited in such a manner that material or leaching therefrom may cause pollution of groundwater or surface waters.

f. Provision shall be made for an all-weather fill area which is accessible for solid waste disposal during all weather conditions under which solid waste is received and disposed of at the site. Such all-weather areas shall be operated at all times in accordance with Iowa Code chapter 455B and these rules.

g. Provisions shall be made to have cover material available for winter and wet weather operations.

h. Each site shall be graded and provided with drainage facilities to meet the requirements of 115.26(1) "f" to minimize flow of surface water onto and into the portion of the site being filled, and to prevent soil erosion and ponding of water.

i. The finished surface of the site shall be repaired as required, covered with soil, and seeded with native grasses or other suitable vegetation immediately upon completion or promptly in the spring on areas terminated during winter conditions. If necessary, seeded slopes shall be covered with straw or similar material to prevent erosion.

j. Each sanitary landfill shall be staked as necessary and inspected annually, or as otherwise specified in the permit, by a professional engineer registered in Iowa. A brief report by the engineer indicating areas of conformance or nonconformance with the approved plans and specifications shall be submitted to the department by the permit holder within 30 days of the inspections. In specifying alternate inspection frequencies, the department shall consider the types and quantities of waste disposed of, the rate of development of the site, the degree of control over site development inherent in the design and topography of the site and the quality of prior operation.

k. If any pockets, seams or layers of sand or other highly permeable material are encountered at the sanitary landfill, the permit holder shall promptly notify the department and shall ensure that a professional engineer registered in Iowa has certified that all sands encountered were totally excavated or sealed off properly or otherwise handled as explicitly provided for in the permit before solid waste is disposed of in that area of the site.

l. The total volume of leachate collected for each month shall be recorded, and the elevation of leachate in the landfill shall be provided to the department in accordance with the schedule specified in the permit.

115.26(3) Hydrologic monitoring system. The owner or operator of a solid waste disposal facility shall operate and maintain a hydrologic monitoring system which includes a sufficient number of groundwater monitoring wells and surface water monitoring points to determine the impact, if any, that the sanitary disposal project is having on the adjacent water.

The hydrologic monitoring systems shall enable early detection of the escape of pollutants from a sanitary landfill. The hydrologic monitoring system shall be planned, designed and constructed in accordance with the provisions of rules 567—115.14(455B) through 567—115.25(455B), and implemented in accordance with the following schedule:

a. A hydrologic monitoring system plan shall be submitted to the department for review and approval with any application for a new permit. Installation of the approved system shall be completed prior to the deposition of solid waste into the landfill.

b. A hydrologic monitoring system plan shall be submitted with applications for permit renewal, not later than the date of renewal, with completion of installation and operation within one year of approval of the plan. Installation of the plan shall be completed within one year of the date of department approval.

c. Upon notice by the department, a hydrologic monitoring system plan may be required to be submitted within six months of such notification, with completion of installation and operation of the approved plan within one year of the date of department approval.

115.26(4) Hydrologic monitoring system operating requirements.

a. *Operational sampling requirements.* All sampling shall be conducted in accordance with an approved sampling protocol, components of which are described in rule 567—115.20(455B).

b. *Groundwater levels.* The elevation of water in each monitoring well shall be measured monthly and recorded to the nearest 0.01 foot. Level measurements must be made before a well is evacuated for sample collection.

c. *Surface water levels.* The water level or flow rate of each surface water body sampled shall be measured and recorded at the time of sample collection.

d. *First-year water sampling.* During the first year of operation of the hydrologic monitoring system, a sample shall be collected quarterly from each groundwater monitoring well and surface water monitoring point. The purpose of this sample is to determine baseline water quality information and enable initial estimation of water quality variability. Each sample shall be analyzed for the following parameters in addition to the parameters listed in paragraph “e” of this subrule and any additional parameter deemed necessary by the department.

- (1) Arsenic, dissolved.
- (2) Barium, dissolved.
- (3) Cadmium, dissolved.
- (4) Chromium, total dissolved.
- (5) Lead, dissolved.
- (6) Mercury, dissolved.
- (7) Magnesium, dissolved.
- (8) Zinc, dissolved.
- (9) Copper, dissolved.
- (10) Benzene.
- (11) Carbon tetrachloride.
- (12) 1,2-Dichloroethane.
- (13) Trichloroethylene.
- (14) 1,1,1-Trichloroethane.
- (15) 1,1-Dichloroethylene.
- (16) Paradichlorobenzene.

e. *Routine semiannual water sampling.* After the first year, each monitoring point must be sampled semiannually as specified in the facility’s operation permit and analyzed for the following parameters.

- (1) Chloride.
- (2) Specific conductance (field measurement).
- (3) pH (field measurement).
- (4) Ammonia nitrogen.
- (5) Iron, dissolved.
- (6) Chemical oxygen demand.
- (7) Temperature (field measurement).
- (8) Any additional parameters deemed necessary by the department.

f. *Routine annual water sampling.* One sample per year from each monitoring point collected in a quarter specified in the facility’s operation permit must be analyzed for the following parameters.

- (1) Total organic halogen.
- (2) Phenols.
- (3) Any additional parameters deemed necessary by the department.

115.26(5) Laboratory procedures. The owner or operator of the solid waste facility must have the groundwater and surface water samples analyzed only by laboratories that are certified by the state of Iowa. Until the department adopts rules regarding certification of laboratories, analyses shall be conducted at a laboratory that certifies to the department that the appropriate analytical procedure is utilized.

All analyses of parameters not covered in the Safe Drinking Water Act (SDWA) must be performed according to methods specified in SW-846 or approved by the United States Environmental Protection Agency. Any analytical method used on non-SDWA parameters deviating from those specified in SW-846 or approved by EPA must be approved by the department.

All analyses must be recorded on forms which, in addition to the analytical results, show the precision of the data set, bias, and limit of detection.

115.26(6) *Analysis of sampling data.* For each parameter analyzed during the first year of operation of the hydrologic monitoring system, as listed in paragraph 115.26(4) “d” above, the mean and standard deviation for each upgradient monitoring well shall be determined using the first year of data. For routine semiannual monitoring parameters, as listed in paragraph 115.26(4) “e” above, mean and standard deviation shall be recalculated annually using all available analytical data. If the analytical results for a downgradient monitoring point do not fall within the control limits of two standard deviations above the mean parameter(s) level in a corresponding upgradient monitoring point, the owner or operator shall submit this information to the department within 30 days of receipt of the analytical results. If the analytical results from an upgradient monitoring point do not fall within two standard deviations of the mean parameter(s) level for that monitoring point, the department shall also be notified within 30 days.

115.26(7) *Additional sampling.* The department will determine if additional sampling is warranted, after receipt of information indicating a possible release as required in subrule 115.26(6) above. The department may require any additional samples to be split and analyzed to determine if the values obtained outside the control limits were the result of laboratory or sampling error. Any additional analytical results shall be submitted to the department by the owner or operator within seven days of receipt. The department will review the information and determine if additional monitoring or preparation of a groundwater quality assessment plan, in accordance with subrule 115.26(9), is necessary.

115.26(8) *Record keeping and recording.*

a. The persons conducting the sampling must record the procedures, measurements, and observations at the time of sampling. The field records must be sufficient to document whether the procedures and requirements specified in the sampling protocol have been followed. The records must also contain the names of the persons conducting the sampling, the time and date each monitoring point was sampled, the required field measurement or test result. The owner or operator must submit copies of these field records to the department if requested.

b. The owner or operator shall keep records of analyses and the associated groundwater surface elevations for the active life and postclosure period of the facility. These records shall be kept at the site or in the administrative files of the owner or operator, and shall be available for review by the department upon request in the county in which the landfill is located.

c. The owner or operator shall provide the department with copies of the quarterly monitoring analytical results by the dates specified in the facility’s operation permit.

d. An annual report summarizing the effect of the facility on groundwater and surface water quality shall be submitted to the department by November 30 each year. The summary is to be prepared by an engineer registered in the state of Iowa and incorporated in the November semiannual engineer inspection report. The contents of this summary are to include the following items:

- (1) Amounts and kinds of wastes accepted under Special Waste Authorizations.
- (2) A narrative describing the effects of the facility on surrounding surface water and groundwater quality and any changes made or maintenance needed in the monitoring network.
- (3) Graphs showing concentrations versus time for all monitoring parameters for each well for as long as records exist for that parameter. Control limits (— two standard deviations from the initial background value) must be shown in each graph.
- (4) Results of activities and tests required by the well maintenance and performance reevaluation plan described in rule 567—115.21(455B).

115.26(9) *Groundwater quality assessment plan.*

a. If leachate migration occurs, the owner or operator, as required by the department, shall develop and submit for approval a specific plan to conduct a groundwater quality assessment study at the facility to

determine the rate of migration and the extent and constituent composition of the leachate release. At a minimum, the assessment monitoring plan must contain the following elements:

- (1) Discussion of the hydrogeologic conditions at the site with an identification of potential contaminant pathways.
 - (2) Description of the present detection monitoring system.
 - (3) A description of the approach the owner or operator will take to substantiate any contention that the contamination may have been falsely indicated.
 - (4) Description of the investigatory approach used to characterize the rate and extent of leachate migration.
 - (5) Discussion of the number, location and depth of wells that will be initially installed as well as a strategy for installing more wells in subsequent investigatory phases.
 - (6) Information on well design and construction.
 - (7) Description of the sampling and analytical program used to obtain and analyze groundwater monitoring data.
 - (8) Description of data collection and analysis procedures.
 - (9) Schedule for the implementation of each phase of the assessment study.
- b. After the plan has been approved by the department, the owner or operator shall implement the plan according to the schedule in the plan.
- c. Within 90 days after the activities prescribed in the groundwater assessment plan have been completed, the owner or operator shall submit a written groundwater quality assessment report to the department.
- d. If the department determines that no waste or waste constituents from the facility have entered the groundwater, the owner or operator shall reinstate the routine monitoring program.

If the department determines that waste or waste constituents have been released from the facility and have entered the groundwater, the owner or operator shall continue to make the determinations described by the assessment plan and develop a remedial action/mitigation plan to alleviate or reduce contamination to the fullest extent possible.

115.26(10) Postclosure monitoring requirements.

- a. At least six months prior to closing the site, the owner or operator of a sanitary landfill shall submit a plan to the department for approval detailing a 30-year postclosure monitoring program.
- b. The department will review the facility's postclosure monitoring records at five-year intervals to determine if changes in the monitoring frequencies or parameters are required.
- c. The commission may adopt rules on a site-specific basis identifying additional monitoring requirements for sanitary landfills for which the postclosure monitoring period is to be extended.

115.26(11) Leachate control systems for new landfills. Every new landfill must have a leachate collection, storage, and treatment and discharge system in place prior to accepting waste. This system shall be operated in conformance with the approved design during the active life of the site and during the postclosure period.

a. *Leachate collection system.*

- (1) The leachate collection system shall be designed to allow not more than 1 foot of head above the top of the landfill liner. The collection system must include a method for measuring the leachate head in the landfill at the lowest area(s) of the collection system.
- (2) The landfill liner must be graded toward the leachate collection pipe at a slope greater than 2 percent, but not to exceed 10 percent. The side slopes of the landfill liner must be less than 25 percent.
- (3) A drainage layer must be placed immediately above the landfill liner. This drainage layer shall consist of a minimum of 1 foot of soil with a coefficient of permeability of 1×10^{-3} cm/sec (2.8 ft/day) or greater.
- (4) Leachate collection pipe shall be placed in a trench excavated a minimum of 18 inches into the liner. The liner system beneath the trench shall meet the applicable requirements specified under 115.26(1) "d."
- (5) Leachate collection pipe shall be surrounded by a gravel protection and drainage layer, and by either a graded filter layer or by a geotextile filter fabric.

(6) The collection pipe must be covered with a filter material to encourage flow and to prevent infiltration of fine-grained materials into the pipe. The collection pipe must be perforated or slotted, of a sufficient diameter to handle the expected flow, but not less than 4 inches in inside diameter; capable of being cleaned throughout the active life of the site and during the postclosure period; chemically resistant to the wastes and the expected leachate; and of sufficient strength to support maximum static and dynamic loads imposed by the overlying wastes, cover materials, and equipment used during the construction and operation of the site. Documentation shall be submitted which includes methods and specifications for cleaning of the pipes, chemical compatibility of the pipes, and calculations and specifications for pipe strength.

(7) The leachate collection system shall be equipped with valves to enable the flow of leachate from the facility to be shut off during periods of maintenance.

(8) The leachate collection system shall be cleaned out once every three years, or more frequently if leachate head or the volume of leachate collected indicates cleanout is necessary. A report of the methods and results of the cleanout shall be submitted at the time of permit renewal.

b. Leachate storage system. The leachate storage system must be:

(1) Capable of storing at least seven days' accumulation of leachate based on mathematical simulated volume using average precipitation;

(2) Constructed of materials which are compatible with the expected leachate; and

(3) Accessible at all times of the year and under all weather conditions.

c. Leachate treatment and disposal system.

(1) Leachate shall be treated by such physical, chemical or biological processes as necessary to meet the pretreatment limits, if any, imposed by a treatment agreement between the landfill and a publicly owned treatment works, or by the effluent discharge limitation established by an NPDES permit issued to the landfill.

(2) Leachate recirculation systems shall be designed to minimize detrimental effects to vegetative cover, to minimize erosion and damage to the soil cover, and to promote rapid stabilization of the waste. Such systems shall not be allowed for sites which do not satisfy all of the requirements of 115.26(11).

(3) All leachate treatment systems, except as described in (2) above, shall conform to wastewater treatment design standards as established by the department.

d. Inspection prior to start-up. The department shall be notified when the initial construction of the leachate collection, storage, and treatment and discharge system has been completed in order that an inspection may be made to determine that the leachate control system is constructed as designed. Prior to this inspection, construction certification reports from the project engineer must be submitted discussing quality assurance and quality control testing done to ensure that all materials and equipment for the leachate control system have been placed in accordance with the approved engineering plans, reports and specifications. The results of all testing must be included, along with documentation of any failed tests, a description of the procedures used to correct the failures, and results of any retesting performed. This inspection may be incorporated with the inspection required by rule 567—115.12(455B).

115.26(12) *Leachate control systems for existing landfills.*

a. All existing landfills must submit a leachate control plan, as described in paragraph “b” below, when any of the following occur:

(1) At the time of permit renewal;

(2) When requesting a change in the existing permit for expansion or modification of the waste fill area;

(3) Within 180 days of notification by the department of the detection of any leachate seep or contamination of the groundwater or surface waters from leachate; or

(4) At least 180 days prior to landfill closure.

b. The design of the leachate control system must include leachate collection storage, and treatment and disposal.

(1) New fill areas of a landfill that have not previously received waste must address the design standards of subrules 115.26(1) and 115.26(11).

(2) Existing fill areas must address the design standards of subrule 115.26(11), except paragraph “a,” subparagraphs (1) to (4). The leachate collection system must be designed to achieve the lowest possible leachate head above the landfill liner, and must include a method of measuring the leachate head.

c. The leachate control plan must be implemented within one year of department approval of the leachate control plan.

115.26(13) Closure requirements. The owner or operator of the landfill must close the site in a manner that minimizes the potential for postclosure release of pollutants to the air, groundwater or surface waters.

a. A minimum of two permanent surveying monuments must be installed by a registered land surveyor from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the postclosure period.

b. The final cover of a nonmunicipal solid waste landfill shall consist of:

(1) Not less than 2 feet of compacted soil. The permeability must be 1×10^{-7} cm/sec or less as determined by appropriate laboratory analysis. The percent of standard or modified proctor density at moisture content consistent with expected field conditions and corresponding to a measured coefficient of permeability equal to or less than 1×10^{-7} cm/sec shall be determined in the laboratory. The soil shall be placed in lifts not to exceed 8 inches in thickness. A minimum of one field density test shall be performed per lift per acre to verify that the density determined by the laboratory analysis as correlated to permeability has been achieved. Results of field density tests shall be submitted to the department. The compacted soil shall be keyed into the bottom liner at the waste cell boundary.

(2) Not less than 2 feet of uncompacted soil, containing sufficient organic matter to support vegetation. The thickness of this soil layer must be at least the root depth of the planned vegetative cover to prevent root penetration into the underlying soil layers. This layer shall be placed as soon as possible to prevent desiccation, cracking and freezing of the compacted soil layer described in 115.26(13) “b”(1).

(3) A layer of compacted soil, incinerator ash, or similar material permitted by the department may be used to prepare the site for placement of the compacted soil layer described in 115.26(13) “b”(1). The use of such material will not serve as a replacement for the compacted soil layer described in 115.26(13) “b”(1).

(4) Alternate methods and materials may be permitted if shown to provide equal or superior performance.

c. The final cover for a municipal solid waste landfill shall consist of:

(1) An erosion layer underlaid by an infiltration layer. The infiltration layer must be comprised of a minimum of 18 inches of earthen material that has a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less. The erosion layer must consist of a minimum of 6 inches of earthen material that is capable of sustaining native plant growth.

(2) The department may approve an alternate final cover design that includes an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified above in subparagraph (1) and an erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified above in subparagraph (1).

d. Those portions of existing landfills demonstrating placement of final cover in conformance with previously approved plans and specifications or regulations in effect at the time of such approval shall not be required to apply additional cover solely to achieve compliance with 115.26(13) “b” and “c.” Those areas of existing landfills which have not been completed in conformance with the exemptions provided herein prior to January 15, 2003, shall complete all such areas in conformance with an approved closure plan pursuant to subrule 115.13(10) which shall include compliance with the provisions of 115.26(13) “b” and “c.” This paragraph shall not preclude a requirement to provide additional cover to such exempted areas as a result of the conclusions of a groundwater assessment or remedial action plan.

e. The final cover shall be designed and graded to meet the drainage requirements of 115.26(1) “f.” The final cover must have a minimum slope of 5 percent, and shall not exceed a slope of 25 percent. Those portions of existing landfills demonstrating placement of final cover in conformance with previously approved plans and specifications shall not be required to reconstruct the cover to meet either the minimum

or maximum slope established by this subrule. Those areas which have not been completed by placement of final cover pursuant to this exemption on January 15, 2003, shall be completed in conformance with an approved closure plan pursuant to subrule 115.13(10) and shall meet the minimum and maximum slope requirements stated herein. This subrule shall not preclude a requirement to modify the slope of any portion of the landfill as a result of the conclusion of a groundwater assessment or remedial action plan.

f. The final cover shall be seeded with native grasses or other suitable vegetation as soon as practical upon completion to prevent soil erosion. If seeding must be delayed due to summer or winter conditions, silt fences or other structures shall be used to minimize erosion of the final cover until the next season suitable for planting. The placement of cover in conformance with 115.26(13)“*b*” and “*c*” shall not be delayed due to season and shall be placed as soon as the solid waste has reached its maximum design elevation within the cell. Vegetation type shall be based on density and root depth, nutrient availability, soil thickness, and soil type. Alternatives to vegetative cover may be considered to control erosion and promote runoff.

g. An approved groundwater monitoring system as required by the closure permit and the rules must be in place and operating.

h. An approved leachate collection and treatment system as required by the closure permit and the rules must be in place and operating.

i. An approved landfill gas monitoring and collection or ventilation system as required by the closure permit and the rules must be in place and operating unless determined not to be necessary by the director.

j. An approved financial assurance instrument, adequate to cover costs of all postclosure activities as required by the closure plan and the closure permit, must be provided upon promulgation of the appropriate rules.

k. All requirements of the closure plan, the closure permit, and the rules must be satisfied.

115.26(14) *Postclosure requirements for 30 years following closure of the site.* The owner or operator of the site must comply with all postclosure requirements.

a. The diversion and drainage system as required in 115.26(1)“*f*” must be maintained to approved specifications to prevent run-on and runoff from eroding or otherwise damaging the final cover.

b. The integrity and effectiveness of the final cover must be maintained by making repairs as necessary to correct the effects of settling, subsidence, erosion, or other events. If damage to the compacted soil layer described in 115.26(13)“*b*”(1) occurs, repairs shall be made to correct the damage and return it to its original specifications.

c. The vegetative cover shall be reseeded as necessary to maintain good vegetative growth. Any invading vegetation whose root system could damage the compacted soil layer shall be removed or destroyed immediately.

d. The groundwater monitoring system shall be operated and maintained and shall comply with all applicable rules and closure permit requirements.

e. The leachate collection, removal and treatment systems shall be operated and maintained and shall comply with all applicable rules and closure permit requirements.

f. The landfill gas monitoring and collection systems shall be operated and maintained and shall comply with all applicable rules and closure permit requirements.

g. Semiannual reports shall be submitted to the department. These reports shall contain information concerning the general conditions at the site, groundwater monitoring results, amount of leachate collected and treated, information concerning the landfill gas monitoring and collection system, and other information as may be required by the closure permit. In addition, locations and elevations of all permanent monuments, required in 115.26(13)“*a*,” shall be determined at least once every three years or more frequently in the event of obvious disturbance of the monument. The reports are due by April 30 and October 31 for the preceding six-month period.

h. The permanent surveying monuments required in 115.26(13)“*a*” shall be maintained.

115.26(15) *Control of explosive gases.*

a. Owners or operators of all sanitary landfills must ensure that:

(1) The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane gas in facility structures (excluding gas control or recovery system components); and

(2) The concentration of methane gas does not exceed the lower explosive limit for methane gas at the facility property boundary.

b. Owners or operators of all sanitary landfills must monitor quarterly for compliance with paragraph “a” of this subrule. An annual report shall be submitted by November 30 summarizing the methane gas monitoring results and any action taken resulting from gas levels exceeding the limits during the previous year.

c. If methane gas levels exceeding the limits specified in paragraph “a” of this subrule are detected, the owner or operator must:

(1) Immediately take all necessary steps to ensure protection of human health and notify the director;

(2) Within seven days after detection, submit to the director a report stating the methane gas levels detected and a description of the steps taken to protect human health;

(3) Within 60 days of detection, implement a plan for remediation of the methane gas releases and send a copy of the remediation plan to the director. The plan shall describe the nature and extent of the problem and the proposed remedy.

567—115.27(455B) Operating requirements for all sanitary disposal projects. Every application for any permit issued by the department shall detail the means by which the applicant will comply with the operating requirements. All sanitary disposal projects shall be operated in conformance with these requirements.

115.27(1) Open burning shall be prohibited except when permitted by 567—Chapter 23. Any burning to be conducted at the site shall be at a location that is separate and distinct from the operating area.

115.27(2) Litter shall be confined to the property on which the sanitary disposal project is located. At the conclusion of each day of operation, any litter strewn beyond the confines of the operating area shall be collected and stored in covered leakproof containers or properly disposed of.

115.27(3) Scavenging shall be prohibited. Any salvaging to be conducted must be described in the permit application, and all salvaged materials must be stored and removed from the sanitary disposal project site in conformance with the permit conditions.

115.27(4) Effective means shall be taken to control flies, other insects, rodents and other vermin.

115.27(5) Equipment designated in the plans and specifications or equivalent equipment shall be used to operate the site at all times.

115.27(6) The major internal roads shall be of all-weather construction and maintained in good condition. Dust shall be controlled on internal roads.

115.27(7) Sites open to the public shall have a permanent sign posted at the site entrance specifying:

a. Name of the operation.

b. The site permit number.

c. The hours and days the site is open to the public.

d. The categories of waste which will be accepted for disposal or, as an alternative, the identification of the categories of waste which are prohibited.

e. Telephone number of official responsible for the operation.

115.27(8) Free liquids or waste containing free liquids. No free liquids or waste containing free liquids shall be disposed of in a sanitary landfill.

115.27(9) General closure requirements.

a. The owner or operator shall notify the department in writing at least 180 days prior to closure of the facility or suspension of operations.

b. Notice of closure shall be posted at the facility at least 180 days prior to closure indicating the date of closure and alternative solid waste management facilities. Notice of closure shall also be published at least 180 days prior to closure in a newspaper of local circulation. This notice shall include the date of closure and alternative solid waste management facilities.

c. Implementation of the closure/postclosure plan shall be completed within 90 days of the closure of the facility. The owner and an engineer registered in Iowa shall certify that the closure/postclosure plan has been implemented in compliance with the rules, the closure/postclosure plan and the permit.

d. Upon completion of closure activities, the following documentation shall be submitted: as-built plans showing changes from the original design plans; test results indicating compliance with final cover as applicable, waste removal, equipment decontamination; a copy of the notation filed with the county recorder; and other forms of documentation as required.

567—115.28(455B) Specific requirements for a sanitary landfill proposing to accept a specific type of solid waste.

115.28(1) *Plan requirements.* The plans for sanitary landfills proposing to accept only a specific type of solid waste shall include the following information in addition to that required by rules 567—115.2(455B) through 567—115.13(455B), 567—115.27(455B), 567—115.29(455B), and 567—115.30(455B) and subrule 115.26(1).

a. The source of the solid waste and a description of the process which produces it.

b. A detailed analysis of the solid waste to be deposited at the site, including such tests as may be required by the department to evaluate the potential impact of disposal of the solid waste on the environment if it is disposed of in the manner described in the plans.

c. Engineering detailing how the site will be designed, constructed, and operated to protect groundwater and surface water resources.

d. If the information submitted in 115.28(1)“b” indicates that no danger of contamination of groundwater or surface waters exists, the director may waive any rule requiring analysis and definition of subsurface geology.

115.28(2) *Specific operating requirements for sanitary landfills proposing to accept a specific type of solid waste.* The operating requirements for a sanitary landfill accepting a specific type of solid waste will necessarily vary with the nature of the solid waste. Accordingly, no single standard of operation is practical. The applicant shall submit a plan of operation which incorporates the requirements of rules 567—115.2(455B) through 567—115.13(455B), 567—115.27(455B), 567—115.29(455B), and 567—115.30(455B) and subrule 115.26(2), and which proposes minimum standards to be maintained at the site for the following operating procedures. The department shall approve the proposed standards if it finds they will provide adequate protection of the environment. The sanitary landfill shall be operated in conformance with rules 567—115.2(455B) through 567—115.13(455B), 567—115.27(455B), 567—115.29(455B), and 567—115.30(455B), subrule 115.26(2), and the standards approved by the department.

a. Daily, intermediate, and final cover.

b. Number and duties of personnel.

c. Storage and preliminary processing of solid waste.

d. Safety procedures and equipment.

e. Operating equipment.

f. Buildings and shelter.

567—115.29(455B) Operator certification. Sanitary landfill operators shall be trained, tested, and certified by a department-approved certification program.

115.29(1) A sanitary landfill operator shall be on duty during all hours of operation of a sanitary landfill, consistent with the respective certification.

115.29(2) To become a certified operator, an individual shall complete a basic operator training course that has been approved by the department or an alternative, equivalent training approved by the department and shall pass a departmental examination as specified by this rule. An operator certified by another state may have reciprocity subject to approval by the department.

115.29(3) A sanitary landfill operator certification is valid until June 30 of the following even-numbered year.

115.29(4) Basic operator training course. The required basic operator training course for a certified sanitary landfill operator will have at least 25 contact hours and will address the following areas, at a minimum:

- a.* Description of types of wastes;
- b.* Interpreting and using engineering plans;
- c.* Construction surveying techniques;
- d.* Waste decomposition processes;
- e.* Geology and hydrology;
- f.* Landfill design;
- g.* Landfill operation;
- h.* Environmental monitoring;
- i.* Applicable laws and regulations;
- j.* Permitting processes;
- k.* Leachate control and treatment.

115.29(5) Alternate basic operator training must be approved by the department. It shall be the applicant's responsibility to submit any documentation the department may require to evaluate the equivalency of alternate training.

115.29(6) Fees.

- a.* The examination fee for each examination shall be \$20.
- b.* The initial certification fee shall be \$8 for each one-half year of a two-year period from the date of issuance to June 30 of the next even-numbered year.
- c.* The certification renewal shall be \$24.
- d.* The penalty fee shall be \$12.

115.29(7) Examinations.

- a.* The operator certification examinations will be based on the basic operator training course curriculum.
- b.* All persons wishing to take the examination required to become a certified operator of a sanitary landfill shall complete the Operator Certification Examination Application, Form 542-1354. A listing of dates and locations of examinations is available from the department upon request. The application form requires the applicant to indicate the basic operator training course taken. Evidence of training course completion must be submitted with the application for certification. The completed application and the application fee shall be sent to the director and addressed to the central office in Des Moines. Application for examination must be received by the department at least 30 days prior to the date of examination.
- c.* A properly completed application for examination will be valid for one year from the date the application is approved by the department.
- d.* Upon failure of the first examination, the applicant may be reexamined at the next scheduled examination. Upon failure of the second examination, the applicant shall be required to wait a period of 180 days between each subsequent examination.
- e.* Upon each reexamination when a valid application is on file, the applicant shall submit to the department the examination fee at least ten days prior to the date of examination.
- f.* Failure to successfully complete the examination within one year from the date of approval of the application shall invalidate the application.
- g.* Completed examinations will be retained by the director for a period of one year after which they will be destroyed.
- h.* Oral examinations may be given at the discretion of the department.

115.29(8) Certification.

- a.* All operators who passed the operator certification examination by July 1, 1991, are exempt from taking the required operator training course. Beginning July 1, 1991, all operators will be required to take the basic operator training course and pass the examination in order to become certified.
- b.* Application for certification must be received by the department within 30 days of the date the applicant receives notification of successful completion of the examination. All applications for

certification shall be made on a form provided by the department and shall be accompanied by the certification fee.

c. Applications for certification by examination which are received more than 30 days but less than 60 days after notification of successful completion of the examination shall be accompanied by the certification fee and the penalty fee. Applicants who do not apply for certification within 60 days of notice of successful completion of the examination will not be certified on the basis of that examination.

d. For applicants who have been certified under other state mandatory certification programs, the equivalency of which has been previously reviewed and accepted by the department, certification without examination will be recommended.

e. For applicants who have been certified under voluntary certification programs in other states, certification will be considered. The applicant must have successfully completed a basic operator training course and an examination generally equivalent to the Iowa examination. The director may require the applicant to successfully complete the Iowa examination.

f. Applicants who seek Iowa certification pursuant to 115.29(8)“d” or “e” shall submit an application for examination accompanied by a letter requesting certification pursuant to those paragraphs. Application for certification pursuant to those paragraphs shall be received by the director in accordance with 115.29(8)“a” and “b.”

115.29(9) Renewals. All certificates shall expire every two years, on even-numbered years, and must be renewed every two years to maintain certification. Application and fee are due prior to expiration of certification.

a. Late application for renewal of a certificate may be made provided that such late application shall be received by the director or postmarked within 30 days of the expiration of the certificate. Such late application shall be on forms provided by the department and accompanied by the penalty fee and the certification renewal fee.

b. If a certificate holder fails to apply for renewal within 30 days following expiration of the certificate, the right to renew the certificate automatically terminates. Certification may be allowed at any time following such termination, provided that the applicant successfully completes an examination. The applicant must then apply for certification in accordance with subrule 115.29(8).

c. An operator may not continue to operate a sanitary landfill or solid waste incinerator after expiration of a certificate without renewal thereof.

d. Continuing education must be earned during the two-year certification period. All certified operators must earn ten contact hours per certificate during each two-year period. The two-year period will begin upon issuance of certification.

e. Only those operators fulfilling the continuing education requirements before the end of each two-year period will be allowed to renew their certificates. The certificates of operators not fulfilling the continuing education requirements shall be void upon expiration, unless an extension is granted.

f. All activities for which continuing education credit will be granted must be related to the subject matter of the particular certificate to which the credit is being applied.

g. The director may, in individual cases involving hardship or extenuating circumstances, grant an extension of time of up to three months within which the applicant may fulfill the minimum continuing education requirements. Hardship or extenuating circumstances include documented health-related confinement or other circumstances beyond the control of the certified operator which prevent attendance at the required activities. All requests for extensions must be made 60 days prior to expiration of certification.

h. The certified operator is responsible for notifying the department of the continuing education credit earned during the period. The continuing education credits earned during the period shall be shown on the application for renewal.

i. A certified operator shall be deemed to have complied with the continuing education requirements of this rule during periods that the operator serves honorably on active duty in the military service; or for periods that the operator is a resident of another state or district having a continuing education requirement for operators and meets all the requirements of that state or district for practice there; or for periods that the

person is a government employee working as an operator and is assigned to duty outside of the United States; or for other periods of active practice and absence from the state approved by the department.

115.29(10) Discipline of certified operators.

a. Disciplinary action may be taken on any of the following grounds:

(1) Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified operator. Duties of certified operators include compliance with rules and permit conditions applicable to sanitary landfill operation.

(2) Failure to submit required records of operation or other reports required under applicable permits or rules of the department, including failure to submit complete records or reports.

(3) Knowingly making any false statement, representation, or certification on any application, record, report or document required to be maintained or submitted under any applicable permit or rule of the department.

b. Disciplinary sanctions allowable are:

(1) Revocation of a certificate.

(2) Probation under specified conditions relevant to the specific grounds for disciplinary action. Additional education or training or reexamination may be required as a condition of probation.

c. The procedure for discipline is as follows:

(1) The director shall initiate disciplinary action. The commission may direct that the director investigate any alleged factual situation that may be grounds for disciplinary action under 115.29(10) “*a*” and report the results of the investigation to the commission.

(2) A disciplinary action may be prosecuted by the director.

(3) Written notice shall be given to an operator against whom disciplinary action is being considered. The notice shall state the informal and formal procedures available for determining the matter. The operator shall be given 20 days to present any relevant facts and indicate the operator’s position in the matter and to indicate whether informal resolution of the matter may be reached.

(4) An operator who receives notice shall communicate verbally, in writing, or in person with the director, and efforts shall be made to clarify the respective positions of the operator and director.

(5) The applicant’s failure to communicate facts and position relevant to the matter by the required date may be considered when determining appropriate disciplinary action.

(6) If agreement as to appropriate disciplinary sanction, if any, can be reached with the operator and the commission concurs, a written stipulation and settlement between the department and the operator shall be entered. The stipulation and settlement shall recite the basic facts and violations alleged, any facts brought forth by the operator, and the reasons for the particular sanctions imposed.

(7) If an agreement as to appropriate disciplinary action, if any, cannot be reached, the director may initiate formal hearing procedures. Notice and formal hearing shall be in accordance with 567—Chapter 7 related to contested and certain other cases pertaining to license discipline.

115.29(11) Revocation of certificates. Upon revocation of a certificate, application for certification may be allowed after two years from the date of revocation. Any such applicant must successfully complete an examination and be certified in the same manner as a new applicant.

115.29(12) A temporary operator of a sanitary landfill may be designated for a period of six months when an existing certified operator is no longer available to the facility. The facility must make application to the department, explain why a temporary certification is needed, identify who the temporary operator will be, and identify the efforts which will be made to obtain a certified operator. A temporary operator designation shall not be approved for greater than a six-month period except for extenuating circumstances. In any event, not more than one six-month extension to the temporary operator designation may be granted. Approval of a temporary operator designation may be rescinded for cause as set forth in 115.29(10).

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—115.30(455B) Emergency response and remedial action plans.

115.30(1) *Purpose.* The purpose of this rule is to implement Iowa Code section 455B.306(6) “*d*” by providing the criteria for developing a detailed emergency response and remedial action plan (ERRAP) for permitted sanitary disposal projects.

115.30(2) *Applicability.* The requirements of this rule apply to the owners or operators of all sanitary landfills.

115.30(3) *Submittal requirements.*

a. The owner or operator of facilities that are subject to this rule and have been permitted prior to October 24, 2001, shall submit a complete detailed ERRAP that meets the requirements set forth in this rule no later than December 31, 2001.

b. Applications for a new permit after October 24, 2001, shall incorporate a complete detailed ERRAP that meets the requirements set forth in this rule.

c. An updated ERRAP that meets the requirements of this rule shall be submitted at the time of each permit renewal or permit reissuance application that is due after December 31, 2001.

d. An updated ERRAP shall be included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP.

e. Facilities that submitted an ERRAP meeting the requirements defined under Iowa Code section 455B.306(6) “d” by May 1, 2001, including regional collection centers that, prior to this date, have met the contingency plan submittal requirement described in 567—Chapter 211, and were approved by the department prior to October 24, 2001, are not required to submit an updated ERRAP that meets the requirements of this rule until the next permit renewal application due date after December 31, 2001.

f. Three sets of ERRAP documents shall be submitted for department approval.

115.30(4) *Content.* The content of ERRAP documents shall be concise and readily usable as a reference manual by facility managers and operators during emergency conditions. The ERRAP document content shall address at least the following primary issues in detail, unless project conditions render the specific issue as not applicable. The rationale for exclusion of any issue areas that are determined not to be applicable must be provided in either the body of the plan or as a supplement to facilitate department review. Additional emergency response and remedial action plan requirements unique to the facility shall be addressed, as applicable.

a. Facility information.

- (1) Permitted agency.
- (2) DNR permit number.
- (3) Facility description.
- (4) Responsible official and contact information.
- (5) Project location.
- (6) Site and environs map.

b. Regulatory requirements.

- (1) Iowa Code section 455B.306(6) “d” criteria citation.
- (2) Reference to provisions of the permit.

c. Emergency conditions—response activities—remedial action.

- (1) Failure of utilities.
 1. Short-term (48 hours or less).
 2. Long-term (over 48 hours).
- (2) Weather-related events.
 1. Tornado.
 2. Windstorms.
 3. Intense rainstorms and erosion.
 4. Lightning strikes.
 5. Flooding.
 6. Event and postevent conditions.
- (3) Fire and explosions.
 1. Waste materials.
 2. Buildings and site.
 3. Equipment.
 4. Fuels.

5. Utilities.
6. Facilities.
7. Working area.
8. Hot loads.
9. Waste gases.
10. Evacuation.
- (4) Regulated waste spills and releases.
 1. Waste materials.
 2. Leachate.
 3. Waste gases.
 4. Waste stockpiles and storage facilities.
 5. Waste transport systems.
 6. Litter and airborne particulates.
 7. Site drainage systems.
 8. Off-site releases.
- (5) Hazardous material spills and releases.
 1. Load check control points.
 2. Mixed waste deliveries.
 3. Fuels.
 4. Waste gases.
 5. Site drainage systems.
 6. Off-site releases.
- (6) Mass movement of land and waste.
 1. Earthquakes.
 2. Slope failure.
 3. Waste shifts.
 4. Waste subsidence.
- (7) Emergency and release notifications and reporting.
 1. Federal agencies.
 2. State agencies.
 3. County and city agencies.
 4. News media.
 5. Public and private facilities with special populations within five miles.
 6. Emergency response agencies and contact information.
 7. Reporting requirements and forms.
- (8) Emergency waste management procedures.
 1. Communications.
 2. Temporary discontinuation of services—short- and long-term.
 3. Facilities access and rerouting.
 4. Waste acceptance.
 5. Wastes in process.
- (9) Primary emergency equipment inventory.
 1. Major equipment.
 2. Fire hydrants and water sources.
 3. Off-site equipment resources.
- (10) Emergency aid.
 1. Responder contacts.
 2. Medical services.
 3. Contracts and agreements.
- (11) ERRAP training requirements.
 1. Training providers.
 2. Employee orientation.

3. Annual training updates.
4. Training completion and record keeping.
- (12) Reference tables, figures and maps.

567—115.31(455B) Industrial monofill sanitary landfill financial assurance.

115.31(1) Purpose. The purpose of this rule is to implement Iowa Code sections 455B.304(8) and 455B.306(9) by providing the criteria for establishing financial assurance for closure, postclosure, and corrective action at industrial monofill landfills (IMF landfills).

115.31(2) Applicability. The requirements of this rule apply to all owners and operators of IMF landfills accepting waste as of October 31, 2007, except owners or operators that are state or federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States.

115.31(3) Financial assurance for closure. The owner or operator of an IMF landfill must establish financial assurance for closure in accordance with the criteria in this rule. The owner or operator must provide continuous coverage for closure until released from this requirement by demonstrating compliance with subrules 115.26(13) and 115.13(10). Proof of compliance pursuant to paragraphs 115.31(3) “a” to “e” must be submitted by the owner or operator yearly by April 1 and approved by the department.

a. The owner or operator shall submit the current version of department Form 542-8090, Sanitary Landfill Financial Assurance Report Form, which contains, but is not limited to, the amount of the financial assurance, the annual financial statement required by Iowa Code sections 455B.306(9) “e” and 455B.306(7) “c,” and the current balances of the closure and postclosure accounts at the time of submittal as required by Iowa Code section 455B.306(9) “b.”

b. The owner or operator shall submit a copy of the financial assurance instruments or the documents establishing the financial assurance instruments in an amount equal to or greater than the amount specified in subrule 115.31(8). Documentation for the mechanism(s) used to demonstrate financial assurance shall contain, at a minimum, the items required to be submitted as specified in paragraphs 115.31(6) “a” to “i.”

c. The owner or operator shall submit a detailed written estimate, in current dollars, certified by an Iowa-licensed professional engineer, of the cost of hiring a third party to close the IMF landfill in accordance with the closure plan as required by subrules 115.26(13) and 115.13(10). Such estimate must be available at any time during the active life of the landfill.

(1) The cost estimate must equal the cost of closing the IMF landfill at any time during the permitted life of the facility when the extent and manner of its operation would make closure the most expensive.

(2) The costs contained in the third-party estimate for closure must be accurate and reasonable when compared to the cost estimates used by other similarly situated landfills in Iowa.

(3) During the active life of the landfill, the owner or operator must annually adjust the closure cost estimate for inflation.

(4) The owner or operator must, annually or at the time of application for a permit amendment that increases closure costs, whichever occurs first, increase the closure cost estimate and the amount of financial assurance provided if changes to the closure plan or IMF landfill conditions increase the maximum cost of closure at any time during the remaining active life of the facility.

(5) The owner or operator may reduce the amount of financial assurance for closure if the most recent estimate of the maximum cost of closure at any time during the active life of the facility is less than the amount of financial assurance currently provided. Prior to the reduction, the owner or operator must submit to the department the justification for the reduction of the closure cost estimate and the updated documentation required by paragraphs 115.31(3) “a” to “e” and receive department approval for the reduction. Approval or denial shall be issued within 30 days of receipt of the reduction request.

(6) The third-party estimate submitted to the department must include the site area subject to closure and account for at least the following factors determined by the department to be minimal necessary costs for closure:

1. Closure and postclosure plan document revisions;
2. Site preparation, earthwork and final grading;
3. Drainage control culverts, piping and structures;
4. Erosion control structures, sediment ponds and terraces;
5. Final cap construction;

6. Cap vegetation soil placement;
7. Cap seeding, mulching and fertilizing;
8. Monitoring well, piezometer and gas control modifications;
9. Leachate system cleanout and extraction well modifications;
10. Monitoring well installations and abandonments;
11. Facility modifications to effect closed status;
12. Engineering and technical services;
13. Legal, financial and administrative services; and
14. Closure compliance certifications and documentation.

d. For publicly owned IMF landfills, the owner or operator shall submit to the department a copy of the owner's or operator's most recent annual audit report in the form prescribed by the office of the auditor of the state of Iowa.

e. Privately held IMF landfills shall submit an affidavit from the owner or operator indicating that a yearly review has been performed by a certified public accountant to determine whether the privately owned landfill is in compliance with this rule. The affidavit shall state the name of the certified public accountant, the dates and conclusions of the review, and the steps taken to rectify any deficiencies identified by the accountant.

115.31(4) *Financial assurance for postclosure.* The owner or operator of an IMF landfill must establish financial assurance for the costs of postclosure in accordance with the criteria in this rule. The owner or operator must provide continuous coverage for postclosure until released from this requirement by demonstrating compliance with the postclosure plan and the closure permit. Proof of compliance pursuant to paragraphs 115.31(4) "a" to "e" must be submitted by the owner or operator yearly by April 1 and approved by the department.

a. The owner or operator shall submit the current version of department Form 542-8090, Sanitary Landfill Financial Assurance Report Form, which contains, but is not limited to, the amount of the financial assurance, the annual financial statement required by Iowa Code sections 455B.306(9) "e" and 455B.306(7) "c," and the current balances of the closure and postclosure accounts required by Iowa Code section 455B.306(9) "b."

b. The owner or operator shall submit a copy of the documents establishing a financial assurance instrument in an amount equal to or greater than the amount specified in subrule 115.31(8). Documentation for the mechanism(s) used to demonstrate financial assurance shall contain, at a minimum, the items required to be submitted as specified in paragraphs 115.31(6) "a" to "i."

c. The owner or operator shall submit a detailed written estimate, in current dollars, certified by an Iowa-licensed professional engineer, of the cost of hiring a third party to conduct postclosure for the IMF landfill in compliance with the postclosure plan developed pursuant to subrules 115.26(14) and 115.13(10). The cost estimate must account for the total cost of conducting postclosure, as described in the plan, for the entire postclosure period.

(1) The cost estimate for postclosure must be based on the most expensive costs of postclosure during the entire postclosure period.

(2) The costs contained in the third-party estimate for postclosure must be accurate and reasonable when compared to the cost estimates used by other similarly situated landfills in Iowa.

(3) During the active life of the IMF landfill and during the postclosure period, the owner or operator must annually adjust the postclosure cost estimate for inflation.

(4) The owner or operator must, annually or at the time of application for a permit amendment that increases postclosure costs, whichever occurs first, increase the estimate and the amount of financial assurance provided if changes in the postclosure plan or IMF landfill conditions increase the maximum cost of postclosure.

(5) The owner or operator may reduce the amount of financial assurance for postclosure if the most recent estimate of the maximum cost of postclosure beginning at any time during the active life of the facility is less than the amount of financial assurance currently provided. Prior to the reduction, the owner or operator must submit to the department the justification for the reduction of the postclosure cost estimate and the updated documentation required by paragraphs 115.31(4) "a" to "e" and must receive department

approval for the reduction. Approval or denial shall be issued within 30 days of receipt of the reduction request.

(6) The third-party estimate submitted to the department must include the site area subject to postclosure and account for at least the following factors determined by the department to be minimal necessary costs for postclosure:

1. General site facilities, access roads and fencing maintenance;
2. Cap and vegetative cover maintenance;
3. Drainage and erosion control systems maintenance;
4. Groundwater to waste separation systems maintenance;
5. Gas control systems maintenance;
6. Gas control systems monitoring and reports;
7. Groundwater and surface water monitoring systems maintenance;
8. Groundwater and surface water quality monitoring and reports;
9. Groundwater monitoring systems performance evaluations and reports;
10. Leachate control systems maintenance;
11. Leachate management, transportation and disposal;
12. Leachate control systems performance evaluations and reports;
13. Facility inspections and reports;
14. Engineering and technical services;
15. Legal, financial and administrative services; and
16. Financial assurance, accounting, audits and reports.

d. For publicly owned IMF landfills, the owner or operator shall submit to the department a copy of the owner's or operator's most recent annual audit report in the form prescribed by the office of the auditor of the state of Iowa.

e. Privately held IMF landfills shall submit an affidavit from the owner or operator indicating that a yearly review has been performed by a certified public accountant to determine whether the privately owned landfill is in compliance with this rule. The affidavit shall state the name of the certified public accountant, the dates and conclusions of the review, and the steps taken to rectify any deficiencies identified by the accountant.

115.31(5) *Financial assurance for corrective action.*

a. An owner or operator required to undertake corrective action pursuant to subrules 115.26(4) to 115.26(9) must have a detailed written estimate, in current dollars, prepared by an Iowa-licensed professional engineer, of the cost of hiring a third party to perform the required corrective action. The estimate must account for the total costs of the activities described in the approved corrective action plan for the entire corrective action period. The owner or operator must submit to the department the estimate and financial assurance documentation within 30 days of department approval of the corrective action plan.

(1) The owner or operator must annually adjust the estimate for inflation until the corrective action plan is completed.

(2) The owner or operator must increase the cost estimate and the amount of financial assurance provided if changes in the corrective action plan or IMF landfill conditions increase the maximum cost of corrective action.

(3) The owner or operator may reduce the amount of the cost estimate and the amount of financial assurance provided if the estimate exceeds the maximum remaining costs of the remaining corrective action. The owner or operator must submit to the department the justification for the reduction of the cost estimate and documentation of financial assurance.

b. The owner or operator of an IMF landfill required to undertake a corrective action plan must establish financial assurance for the most recent corrective action plan by one of the mechanisms prescribed in subrule 115.31(6). The owner or operator must provide continuous coverage for corrective action until released from financial assurance requirements by demonstrating compliance with the following:

(1) Upon completion of the remedy, the owner or operator must submit to the department a certification of compliance with the approved corrective action plan. The certification must be signed by the owner or operator and by an Iowa-licensed professional engineer.

(2) Upon department approval of completion of the corrective action remedy, the owner or operator shall be released from the requirements for financial assurance for corrective action.

115.31(6) Allowable financial assurance mechanisms. The mechanisms used to demonstrate financial assurance as required by Iowa Code section 455B.306(9) “a” must ensure that the funds necessary to meet the costs of closure, postclosure, and corrective action for known releases will be available whenever the funds are needed. Owners or operators must choose from options in paragraphs 115.31(6) “a” to “i.”

a. Trust fund.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action, whichever is applicable, by establishing a trust fund which conforms to the requirements of this subrule. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. A copy of the trust agreement must be submitted pursuant to subrules 115.31(3), 115.31(4), and 115.31(5) and placed in the facility’s official files.

(2) Payments into the trust fund must be made annually by the owner or operator over ten years or over the remaining life of the IMF landfill, whichever is shorter, in the case of a trust fund for closure or postclosure; or over one-half of the estimated length of the corrective action plan in the case of a response to a known release. This period is referred to as the pay-in period.

(3) For a trust fund used to demonstrate financial assurance for closure and postclosure, the first payment into the fund must be at least equal to the amount specified in subrule 115.31(8) for closure or postclosure divided by the number of years in the pay-in period as defined in subparagraph 115.31(6) “a”(2). The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{CE} - \text{CB}}{\text{Y}}$$

where CE is the amount specified in subrule 115.31(8) for closure or postclosure (updated for inflation or other changes), CB is the current balance of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund must be at least equal to one-half of the current cost estimate for corrective action divided by the number of years in the corrective action pay-in period as defined in subparagraph 115.31(6) “a”(2). The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{RB} - \text{CV}}{\text{Y}}$$

where RB is the most recent estimate of the required trust fund balance for corrective action, which is the total cost that will be incurred during the second half of the corrective action period, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(5) The initial payment into the trust fund must be made before the initial receipt of waste or within 30 days of close of the first fiscal year that begins after October 31, 2007, in the case of existing facilities; before the cancellation of an alternative financial assurance mechanism in the case of closure and postclosure; or no later than 120 days after the corrective action remedy has been approved by the department.

(6) The owner or operator or another person authorized to conduct closure, postclosure, or corrective action activities may request reimbursement from the trustee for these expenditures, including partial closure, as the expenditures are incurred. Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure, postclosure, or corrective action and if justification and documentation of the costs are placed in the operating record. The owner or operator must submit to the department documentation of the justification for reimbursement and verification that reimbursement has been received.

(7) The trust fund may be terminated by the owner or operator only if the owner or operator substitutes alternative financial assurance as specified in this rule or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

(8) After the pay-in period has been completed, the trust fund shall be adjusted annually to correct any deficiency of the fund with respect to the adjusted cost estimate and may be adjusted annually should the balance in the fund exceed the adjusted cost estimate.

b. Surety bond guaranteeing payment or performance.

(1) An owner or operator may demonstrate financial assurance for closure or postclosure by obtaining a payment or performance surety bond which conforms to the requirements of this subrule. An owner or operator may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of this subrule. The bond must be effective before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure; or no later than 120 days after the corrective action remedy has been approved by the department. The owner or operator must submit a copy of the bond to the department and keep a copy in the facility's official files. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. Department of the Treasury. The state shall not be considered a party to the surety bond.

(2) The penal sum of the bond must be in an amount at least equal to the amount specified in subrule 115.31(8) for closure and postclosure or corrective action, whichever is applicable.

(3) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond and also upon notice from the department pursuant to subparagraph 115.31(6) "b"(6).

(4) The owner or operator must establish a standby trust fund. The standby trust fund must meet the requirements of paragraph 115.31(6) "a" except the requirements for initial payment and subsequent annual payments specified in subparagraphs 115.31(6) "a"(2) to (5).

(5) Payments made under the terms of the bond will be deposited by the surety directly into the standby trust fund. Payments from the trust fund must be approved by the trustee and the department.

(6) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice from the surety of withdrawal of the cancellation, or proof of a deposit into the standby trust fund of a sum equal to the amount of the bond. If the owner or operator has not complied with this subparagraph within the 60-day time period, this shall constitute a failure to perform, and the department shall notify the surety, prior to the expiration of the 120-day notice period, that such a failure has occurred.

(7) The bond must be conditioned upon faithful performance by the owner or operator of all closure, postclosure, or corrective action requirements of the Code of Iowa and this rule. A failure to comply with subparagraph 115.31(6) "b"(6) shall also constitute a failure to perform under the terms of the bond.

(8) Liability under the bond shall be for the duration of the operation and the closure and postclosure periods.

(9) The owner or operator may cancel the bond only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

c. Letter of credit.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action, whichever is applicable, by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph. The letter of credit must be effective before the initial receipt of waste or before the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure; or no later than 120 days after the corrective action plan is approved by the department. The owner or operator must submit to the department a copy of the letter of credit and place a copy in the facility's official files. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the facility and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the facility's files.

(3) The letter of credit must be irrevocable and must be issued for a period of at least one year in an amount at least equal to the amount specified in subrule 115.31(8) for closure, postclosure, or corrective action, whichever is applicable. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into a standby trust fund established pursuant to paragraph 115.31(6) "a." If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the standby trust fund established by the owner or operator. The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

(4) The owner or operator may cancel the letter of credit only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

d. Insurance.

(1) An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action by obtaining insurance which conforms to the requirements of this paragraph. The insurance must be effective before the initial receipt of waste or prior to cancellation of an alternative financial assurance, in the case of closure and postclosure; or no later than 120 days after the corrective action plan has been approved by the department. At a minimum, the insurer must be licensed to transact the business of insurance or be eligible to provide insurance as an excess or surplus lines insurer in one or more states. The owner or operator must submit to the department a copy of the insurance policy and retain a copy in the facility's official files.

(2) The closure or postclosure insurance policy must guarantee that funds will be available to close the IMF landfill whenever final closure occurs or to provide postclosure for the IMF landfill whenever the postclosure period begins, whichever is applicable. The policy must also guarantee that once closure or postclosure begins, the insurer will be responsible for the paying out of funds to the owner or operator or another person authorized to conduct closure or postclosure, up to an amount equal to the face amount of the policy.

(3) The insurance policy must be issued for a face amount at least equal to the amount specified in subrule 115.31(8) for closure, postclosure, or corrective action, whichever is applicable. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(4) An owner or operator or another person authorized to conduct closure or postclosure may receive reimbursements for closure or postclosure expenditures, including partial closure, as applicable. Requests for reimbursement will be granted by the insurer only if the remaining value of the policy is sufficient to cover the remaining costs of closure or postclosure, and if justification and documentation of the cost are placed in the operating record. The owner or operator must submit to the department documentation of the justification for reimbursement and verification that the reimbursement has been received.

(5) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided that such consent is not unreasonably refused.

(6) The insurance policy must provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure

to pay the premium, the insurer may cancel the policy by sending notice of cancellation by certified mail to the owner or operator and to the department 120 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice from the insurer of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the insurance coverage into a standby trust fund established pursuant to paragraph 115.31(6)“a.” If the owner or operator has not complied with this subparagraph within the 60-day time period, this shall constitute a failure to perform and shall be a covered event pursuant to the terms of the insurance policy. A failure by the owner or operator to comply with this subparagraph within the 60-day period shall make the insurer liable for the closure and postclosure costs of the covered facility up to the amount of the policy limits, which shall be equal to the most recently submitted cost estimates.

(7) For insurance policies providing coverage for postclosure, commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. Such increase must be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Department of the Treasury for 26-week treasury securities.

(8) The owner or operator may cancel the insurance only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

e. Corporate financial test. An owner or operator that satisfies the requirements of this paragraph may demonstrate financial assurance up to the amount specified below:

(1) Financial component. The owner or operator must satisfy the requirements of numbered paragraphs 115.31(6)“e”(1)“1,” “2,” and “3” to meet the financial component of the corporate financial test.

1. The owner or operator must satisfy one of the following three conditions:

- A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor’s or Aaa, Aa, A, or Baa as issued by Moody’s; or
- A ratio of less than 1.5 comparing total liabilities to net worth (net worth calculations may not include future permitted capacity of the subject landfill as an asset); or
- A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities;

2. The tangible net worth, excluding future permitted capacity of the subject landfill, of the owner or operator must be greater than:

- The sum of the current closure, postclosure, and corrective action cost estimates and any other environmental obligations, including guarantees, covered by this financial test plus \$10 million except as provided in the second bulleted paragraph in numbered paragraph 115.31(6)“e”(1)“2”; or
- Net worth of \$10 million, excluding future permitted capacity of the subject landfill, plus the amount of any guarantees that have not been recognized as liabilities on the financial statements, provided that all of the current closure, postclosure, and corrective action costs and any other environmental obligations covered by a financial test are recognized as liabilities on the owner’s or operator’s audited financial statements and are subject to the approval of the department; and

3. The owner or operator must have, located in the United States, assets, excluding future permitted capacity of the subject landfill, amounting to at least the sum of current closure, postclosure, and corrective action cost estimates and any other environmental obligations covered by a financial test as described in subparagraph 115.31(6)“e”(5).

(2) Record-keeping and reporting requirements. The owner or operator must submit the following records to the department and place a copy in the facility’s official files prior to the initial receipt of solid waste or cancellation of an alternative financial assurance instrument, in the case of closure and postclosure; or no later than 120 days after the corrective action plan has been approved by the department:

1. A letter signed by a certified public accountant and based upon a certified audit that:

- Lists all the current cost estimates covered by a financial test including, but not limited to, cost estimates required by subrules 115.31(3) to 115.31(5); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40

CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and

- Provides evidence demonstrating that the owner or operator meets the conditions of subparagraph 115.31(6)“e”(1).

2. A copy of the independent certified public accountant’s unqualified opinion of the owner’s or operator’s financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner’s or operator’s financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this mechanism. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the corporate financial test, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

3. If the certified public accountant’s letter providing evidence of financial assurance includes financial data which shows that the owner or operator satisfies subparagraph 115.31(6)“e”(1) but which differs from data in the audited financial statements referred to in numbered paragraph 115.31(6)“e”(2)“2,” then a special report from the owner’s or operator’s independent certified public accountant to the owner or operator is required. The special report shall be based upon an agreed-upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the certified public accountant’s letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

4. If the certified public accountant’s letter provides a demonstration that the owner or operator has assured for environmental obligations as provided in the second bulleted paragraph of numbered paragraph 115.31(6)“e”(2)“1,” then the letter shall include a report from the independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements and that documents how these obligations have been measured and reported and verifies that the tangible net worth of the owner or operator is at least \$10 million plus the amount of any guarantees provided.

(3) The owner or operator may cease the submission of the information required by paragraph 115.31(6)“e” only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

(4) The department may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subparagraph 115.31(6)“e”(1), require the owner or operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in subparagraph 115.31(6)“e”(2). If the department finds that the owner or operator no longer meets the requirements of subparagraph 115.31(6)“e”(1), the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

(5) Calculation of costs to be assured. When calculating the current cost estimates for closure, postclosure, corrective action, or the sum of the combination of such costs to be covered, and any other environmental obligations assured by a financial test referred to in paragraph 115.31(6)“e,” the owner or operator must include cost estimates required for subrules 115.31(3) to 115.31(5); cost estimates for municipal solid waste management facilities pursuant to 40 CFR Section 258.74; and cost estimates required for the following environmental obligations, if the owner or operator assures those environmental obligations through a financial test: obligations associated with UIC facilities under 40 CFR Part 144, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265.

f. Local government financial test. An owner or operator that satisfies the requirements of this paragraph may demonstrate financial assurance up to the amount specified below:

(1) Financial component.

1. The owner or operator must satisfy one of the following requirements:

- If the owner or operator has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the owner or operator must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard & Poor's, on all such general obligation bonds; or

- The owner or operator must satisfy each of the following financial ratios based on the owner's or operator's most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

2. The owner or operator must prepare its financial statements in conformity with generally accepted accounting principles or other comprehensive basis of accounting and have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa.

3. A local government is not eligible to assure its obligations in paragraph 115.31(6) "f" if it:

- Is currently in default on any outstanding general obligation bonds; or
- Has any outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard & Poor's; or

- Operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or

- Receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement as required under numbered paragraph 115.31(6) "f"(1)"2." A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism.

4. The following terms used in this paragraph are defined as follows:

"Cash plus marketable securities" means all the cash plus marketable securities held by the local government on the last day of a fiscal year, excluding cash and marketable securities designated to satisfy past obligations such as pensions.

"Debt service" means the amount of principal and interest due on a loan in a given time period, typically the current year.

"Deficit" means total annual revenues minus total annual expenditures.

"Total expenditures" means all expenditures, excluding capital outlays and debt repayment.

"Total revenues" means revenues from all taxes and fees excluding revenue from funds managed by local government on behalf of a specific third party and does not include the proceeds from borrowing or asset sales.

(2) Public notice component. The local government owner or operator must include disclosure of the closure and postclosure costs assured through the financial test in its next annual audit report prior to the initial receipt of waste at the facility or prior to cancellation of an alternative financial assurance mechanism, whichever is later. A reference to corrective action costs must be placed in the next annual audit report after the corrective action plan is approved by the department. For the first year the financial test is used to assure costs at a particular facility, the reference may instead be placed in the facility's official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure and postclosure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(3) Record-keeping and reporting requirements.

1. The local government owner or operator must submit to the department the following items:

- A letter signed by the local government's chief financial officer that lists all the current cost estimates covered by a financial test, as described in subparagraph 115.31(6) "f"(4); that provides evidence and certifies that the local government meets the conditions of numbered paragraphs 115.31(6) "f"(1)"1," "2," and "3"; and that certifies that the local government meets the conditions of subparagraphs 115.31(6) "f"(2) and (4); and

- The local government's annual financial report indicating compliance with the financial ratios required by numbered paragraph 115.31(6) "f"(1)"1," second bulleted paragraph, if applicable, and the

requirements of numbered paragraph 115.31(6)“f”(1)“2” and the third and fourth bulleted paragraphs of numbered paragraph 115.31(6)“f”(1)“3”; and also indicating that the requirements of Governmental Accounting Standards Board Statement 18 have been met.

2. The items required in numbered paragraph 115.31(6)“f”(3)“1” must be submitted to the department and placed in the facility’s official files prior to the receipt of waste or prior to the cancellation of an alternative financial assurance mechanism, in the case of closure and postclosure; or, in the case of corrective action, not later than 120 days after the corrective action plan is approved by the department.

3. After the initial submission of the required items and their placement in the facility’s official files, the local government owner or operator must update the information and place the updated information in the facility’s official files within 180 days following the close of the owner’s or operator’s fiscal year.

4. The owner or operator may cease the submission of the information required by paragraph 115.31(6)“f” only if alternative financial assurance is substituted prior to cancellation or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

5. A local government must satisfy the requirements of the financial test at the close of each fiscal year. If the local government owner or operator no longer meets the requirements of the local government financial test, the local government must, within 180 days following the close of the owner’s or operator’s fiscal year, obtain alternative financial assurance that meets the requirements of this rule, place the required submissions for that assurance in the operating record, and notify the department that the owner or operator no longer meets the criteria of the financial test and that alternative financial assurance has been obtained.

6. The department, based on a reasonable belief that the local government owner or operator may no longer meet the requirements of the local government financial test, may require additional reports of financial conditions from the local government. If the department finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of the local government financial test, the local government must provide alternative financial assurance in accordance with this rule.

(4) Calculation of costs to be assured. The portion of the closure, postclosure, and corrective action costs which an owner or operator may assure under this paragraph is determined as follows:

1. If the local government owner or operator does not assure other environmental obligations through a financial test, the owner or operator may assure closure, postclosure, and corrective action costs that equal up to 43 percent of the local government’s total annual revenue.

2. If the local government assures other environmental obligations through a financial test, including those associated with UIC facilities under 40 CFR Section 144.62, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, the owner or operator must add those costs to the closure, postclosure, and corrective action costs it seeks to assure under this paragraph. The total that may be assured must not exceed 43 percent of the local government’s total annual revenue.

3. The owner or operator must obtain an alternative financial assurance instrument for those costs that exceed the limits set in numbered paragraphs 115.31(6)“f”(4)“1” and “2.”

g. *Corporate guarantee.*

(1) An owner or operator may meet the requirements of this paragraph by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a “substantial business relationship” with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraph 115.31(6)“e” and must comply with the terms of the guarantee. A certified copy of the guarantee must be placed in the facility’s operating record along with copies of the letter from a certified public accountant and the accountant’s opinions. If the guarantor’s parent corporation is also the parent corporation of the owner or operator, the letter from the certified public accountant must describe the value received in consideration of the guarantee. If the guarantor is an owner or operator with a “substantial business relationship” with the owner or operator, this letter must describe this “substantial business relationship” and the value received in consideration of the guarantee.

(2) The guarantee must be effective and all required submissions made to the department prior to the initial receipt of waste or before cancellation of an alternative financial mechanism, in the case of closure and postclosure; or, in the case of corrective action, no later than 120 days after the corrective action plan has been approved by the department.

(3) The terms of the guarantee must provide that:

1. If the owner or operator fails to perform closure, postclosure, or corrective action of a facility covered by the guarantee, or fails to obtain alternative financial assurance within 90 days of notice of intent to cancel pursuant to numbered paragraphs 115.31(6) "g"(3)"2" and "3," the guarantor will:

- Perform, or pay a third party to perform, closure, postclosure, or corrective action as required (performance guarantee); or

- Establish a fully funded trust fund as specified in paragraph 115.31(6) "a" in the name of the owner or operator (payment guarantee); or

- Obtain alternative financial assurance as required by numbered paragraph 115.31(6) "g"(3)"3."

2. The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements of this rule unless the guarantor sends prior notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts.

3. If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the department, provide to the department adequate proof of alternative financial assurance, notice from the guarantor of withdrawal of the cancellation, or proof of the establishment of a fully funded trust fund pursuant to paragraph 115.31(6) "a." If the owner or operator fails to comply with the provisions of this numbered paragraph within the 90-day period, the guarantor must provide that alternative financial assurance prior to cancellation of the corporate guarantee.

(4) If a corporate guarantor no longer meets the requirements of paragraph 115.31(6) "e," the owner or operator must, within 90 days, obtain alternative financial assurance and submit proof of alternative financial assurance to the department. If the owner or operator fails to provide alternative financial assurance within the 90-day period, the guarantor must provide that alternative financial assurance within the next 30 days.

(5) The owner or operator is no longer required to meet the requirements of paragraph 115.31(6) "g" upon the submission to the department of proof of the substitution of alternative financial assurance or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

h. Local government guarantee. An owner or operator may demonstrate financial assurance for closure, postclosure, or corrective action by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E. The guarantor must meet the requirements of the local government financial test in paragraph 115.31(6) "f" and must comply with the terms of a written guarantee.

(1) Terms of the written guarantee. The guarantee must be effective before the initial receipt of waste or before the cancellation of alternative financial assurance, in the case of closure and postclosure; or no later than 120 days after the corrective action plan is approved by the department. The guarantee must provide that:

1. If the owner or operator fails to perform closure, postclosure, or corrective action of a facility covered by the guarantee or fails to obtain alternative financial assurance within 90 days of notice of intent to cancel pursuant to numbered paragraphs 115.31(6) "h"(1)"2" and "3," the guarantor will:

- Perform, or pay a third party to perform, closure, postclosure, or corrective action as required; or

- Establish a fully funded trust fund as specified in paragraph 115.31(6) "a" in the name of the owner or operator; or

- Obtain alternative financial assurance as required by numbered paragraph 115.31(6) "h"(1)"3."

2. The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120

days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts.

3. If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the department, provide to the department adequate proof of alternative financial assurance, notice from the guarantor of withdrawal of the cancellation, or proof of the establishment of a fully funded trust fund pursuant to paragraph 115.31(6) "a." If the owner or operator fails to comply with the provisions of this numbered paragraph within the 90-day period, the guarantor must provide that alternative financial assurance prior to cancellation of the guarantee.

(2) Record-keeping and reporting requirements.

1. The owner or operator must submit to the department a certified copy of the guarantee along with the items required under subparagraph 115.31(6) "f"(3) and place a copy in the facility's official files before the initial receipt of waste or before cancellation of alternative financial assurance, whichever is later, in the case of closure and postclosure; or no later than 120 days after the corrective action plan has been approved by the department.

2. The owner or operator shall no longer be required to submit the items specified in numbered paragraph 115.31(6) "h"(2) "1" when proof of alternative financial assurance has been submitted to the department or the owner or operator is no longer required to provide financial assurance pursuant to this rule.

3. If a local government guarantor no longer meets the requirements of paragraph 115.31(6) "f," the owner or operator must, within 90 days, submit to the department proof of alternative financial assurance. If the owner or operator fails to obtain alternative financial assurance within the 90-day period, the guarantor must provide that alternative financial assurance within the next 30 days.

i. Local government dedicated fund. The owner or operator of a publicly owned IMF landfill or a local government serving as a guarantor may demonstrate financial assurance for closure, postclosure, or corrective action, whichever is applicable, by establishing a dedicated fund or account that conforms to the requirements of this subrule. A dedicated fund will be considered eligible if it complies with subparagraph 115.31(6) "i"(1) or (2) and all other provisions of this paragraph, and if documentation of this compliance has been submitted to the department.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, or order to pay for closure, postclosure, or corrective action costs that arise from the operation of the IMF landfill and shall be funded for the full amount of coverage or funded for part of the required amount of coverage and used in combination with another mechanism(s) that provides the remaining coverage.

(2) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, or order as a reserve fund and shall be funded for no less than the full amount of coverage or funded for part of the required amount of coverage and used in combination with another mechanism(s) that provides the remaining coverage.

(3) Payments into the dedicated fund must be made annually by the owner or operator for ten years or over the permitted life of the IMF landfill, whichever is shorter, in the case of a dedicated fund for closure or postclosure; or over one-half of the estimated length of an approved corrective action plan in the case of a response to a known release. This is referred to as the pay-in period. The initial payment into the dedicated fund must be made before the initial receipt of waste in the case of closure and postclosure or no later than 120 days after the corrective action plan has been approved by the department.

(4) For a dedicated fund used to demonstrate financial assurance for closure and postclosure, the first payment into the dedicated fund must be at least equal to the amount specified in subrule 115.31(8), divided by the number of years in the pay-in period as defined in paragraph 115.31(6) "i." The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{CE} - \text{CB}}{\text{Y}}$$

where CE is the total required financial assurance for the owner or operator, CB is the current balance of the fund, and Y is the number of years remaining in the pay-in period.

(5) For a dedicated fund used to demonstrate financial assurance for corrective action, the first payment into the dedicated fund must be at least one-half of the current cost estimate, divided by the number of years in the corrective action pay-in period as defined in paragraph 115.31(6) “i.” The amount of subsequent payments must be determined by the following formula:

$$\text{Payment} = \frac{\text{RB} - \text{CF}}{\text{Y}}$$

where RB is the most recent estimate of the required dedicated fund balance, which is the total cost that will be incurred during the second half of the corrective action period, CF is the current amount in the dedicated fund, and Y is the number of years remaining in the pay-in period.

(6) The initial payment into the dedicated fund must be made before the initial receipt of waste or within 30 days of close of the first fiscal year that begins after October 31, 2007, in the case of existing facilities; before the cancellation of an alternative financial assurance mechanism in the case of closure and postclosure; or no later than 120 days after the corrective action remedy has been approved by the department.

(7) After the pay-in period has been completed, the dedicated fund shall be adjusted annually to correct any deficiency of the fund with respect to the adjusted cost estimate and may be adjusted annually should the balance in the fund exceed the adjusted cost estimate.

115.31(7) General requirements.

a. Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this rule by establishing more than one financial mechanism per facility. The mechanisms must be a combination of those mechanisms outlined in this rule and must provide financial assurance for an amount at least equal to the current cost estimate for closure, postclosure, or corrective action, whichever is applicable. The financial test and a guarantee provided by a corporate parent, sibling or grandparent may not be combined if the financial statements of the two entities are consolidated.

b. Use of one mechanism for multiple facilities. An owner or operator may satisfy the requirements of this rule for multiple IMF landfills by the use of one mechanism if the owner or operator ensures that the mechanism provides financial assurance for an amount at least equal to the current cost estimates for closure, postclosure, or corrective action, whichever is applicable, for all IMF landfills covered.

c. Criteria. The language of the financial assurance mechanisms listed in this rule must ensure that the instruments satisfy the following criteria:

(1) The financial assurance mechanisms must ensure that the amount of funds assured is sufficient to cover the costs of closure, postclosure, or corrective action for known releases, whichever is applicable;

(2) The financial assurance mechanisms must ensure that funds will be available in a timely fashion when needed;

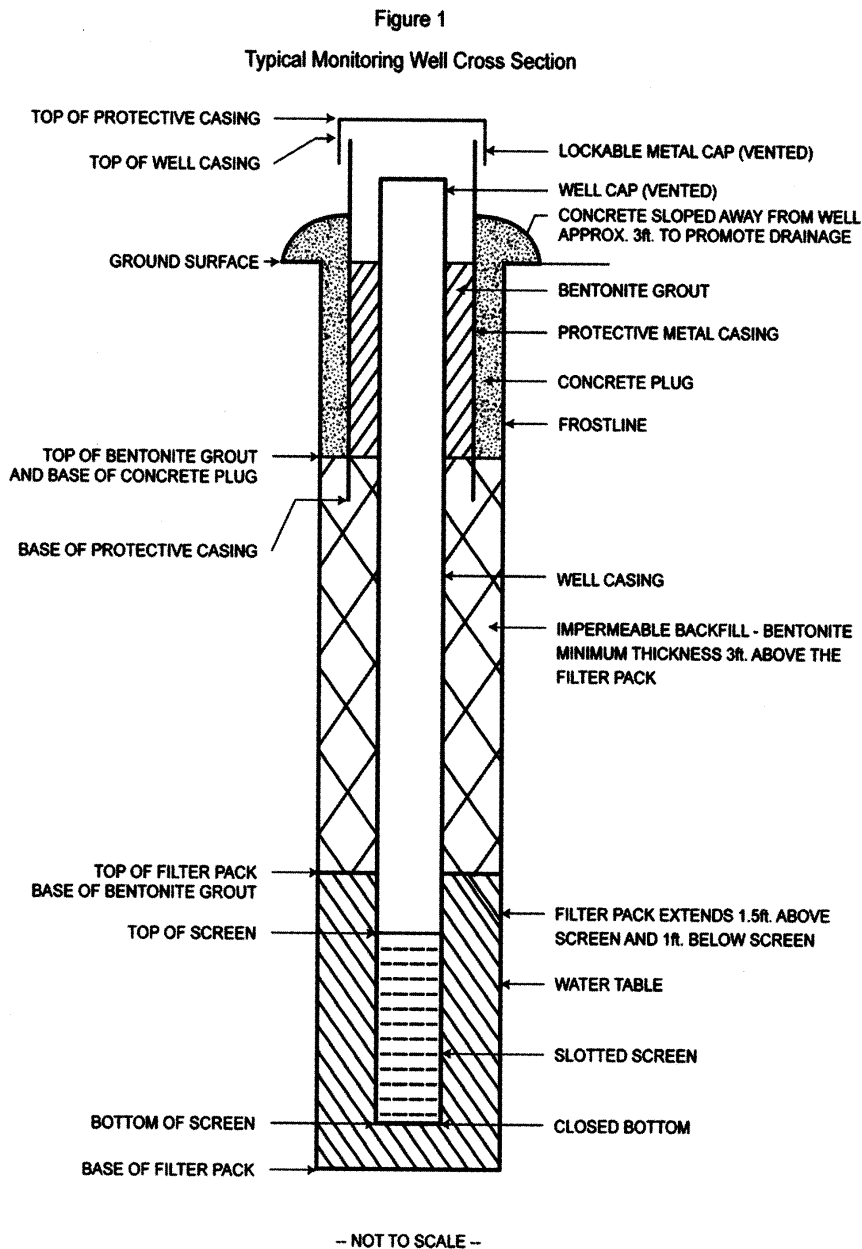
(3) The financial assurance mechanisms must be obtained by the owner or operator prior to the initial receipt of solid waste and no later than 120 days after the corrective action remedy has been approved by the department until the owner or operator is released from the financial assurance requirements; and

(4) The financial assurance mechanisms must be legally valid, binding, and enforceable under Iowa law.

d. No permit shall be issued by the department pursuant to Iowa Code section 455B.305 unless the applicant has demonstrated compliance with rule 567—115.31(455B).

115.31(8) Amount of required financial assurance. A financial assurance mechanism established pursuant to subrule 115.31(6) shall be in the amount of the third-party cost estimates required by subrules 115.31(3), 115.31(4), and 115.31(5) except that the amount of the financial assurance may be reduced by the sum of the cash balance in a trust fund or local government dedicated fund established to comply with subrule 115.31(8) plus the current value of investments held by said trust fund or local government dedicated fund if invested in one or more of the investments listed in Iowa Code section 12B.10(5).

These rules are intended to implement Iowa Code section 455B.304.



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CHAPTER 116
REGISTRATION OF WASTE TIRE HAULERS

[Prior to 7/10/02, see 721—Chapter 44]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—116.1(455B,455D) Purpose. The purpose of this chapter is to establish guidelines for the registration of waste tire haulers that provide waste tire collection and hauling services for a fee. The registration process shall ensure the proper management of waste tires collected by a waste tire hauler. This chapter shall not exempt a waste tire hauler from compliance with other applicable statutes or requirements regarding waste tires that are hauled to or from other states.

567—116.2(455B,455D) Definitions. As used in this chapter:

“Passenger tire equivalent” means a conversion measurement that is used to estimate waste tire weights and volume amounts and in which one passenger car tire with a rim diameter of 17 inches or less is equal to 20 pounds. One cubic yard of volume shall contain 15 passenger tire equivalents. Tires larger than a passenger car tire shall be evaluated for volume using this conversion measurement.

“Permit” means a permit issued by the department to establish, construct, modify, own, or operate a waste tire storage or processing site.

“Processing” means producing or manufacturing usable materials from waste tires.

“Processing site” means a site which is used for the processing of waste tires and which is owned or operated by a tire processor who has a permit for the site.

“Tire collector” means a permitted person or business that owns or operates a site used for the storage, collection, or deposit of more than 500 waste tires or an authorized vehicle recycler who is licensed by the department of transportation pursuant to Iowa Code section 321H.4 and who owns or operates a site used for the storage, collection, or deposit of more than 3,500 waste tires.

“Tire processor” means a permitted individual or business that processes tires through grinding, shredding, or other means, thereby producing a material that is readily suitable for marketing into product manufacturing, energy recovery, or other beneficial reuse markets. “Tire processor” does not mean a person who retreads tire casings or who collects and stores tires.

“Waste tire,” as defined in Iowa Code section 455D.11, means a tire that is no longer suitable for its originally intended purpose due to wear, damage, or defect. This definition shall include a tire mounted on a rim, but not on a vehicle. “Waste tire” does not include a nonpneumatic tire.

“Waste tire hauler” means a person who transports for hire more than 40 waste tires in a single load. This definition includes persons and businesses that collect fees to provide hauling and pick-up services for the disposal or removal of tires from other persons or businesses.

“Waste tire stockpile” means a permitted site that is used for the storage, collection, or deposit of waste tires or tire bales, including indoor, outdoor, and underground storage.

567—116.3(455B,455D) Registration requirement. A waste tire hauler shall register with and obtain a certificate of registration from the department in accordance with this chapter before hauling waste tires in Iowa. Waste tire haulers that pick up tires within Iowa or that bring waste tires to Iowa for disposal, storage, or processing shall be required to register.

116.3(1) Registration exemption. A waste tire hauler shall not be required to register under the following circumstances:

a. The waste tire hauler only travels through the state with waste tires as a part of interstate commerce and does not pick up, deposit, transfer, store, or dispose of any waste tires in Iowa.

b. The waste tire hauler is a municipal, county, state, or other public agency, and the vehicles used for transport of the waste tires are owned and licensed by the public agency. The agency may only haul up to 10,000 waste tires within a 12-month period without obtaining a waste tire hauler’s registration.

116.3(2) Annual registration.

a. A waste tire hauler registration shall be valid for one year, and the waste tire hauler must annually renew the waste tire hauler registration in order to continue to provide waste tire hauling services within the state.

b. Initial registration of a waste tire hauler shall be valid upon the date of issuance by the department and shall be effective for a minimum 12-month period thereafter, with expiration of the initial registration to occur on either January 1 or July 1, whichever date occurs most closely after the initial 12-month registration period.

c. Subsequent annual renewals of the waste tire hauler's registration shall then occur on either January 1 or July 1, subject to the date of the original expiration as referenced in 116.3(2)"*b.*"

567—116.4(455B,455D) Registration form. A waste tire hauler shall submit the following information on a form prescribed by the department for application for or renewal of registration as a waste tire hauler.

1. The name of the waste tire hauler and any other names under which the waste tire hauler may do business.

2. The principal address of the waste tire hauler and any other address at which the waste tire hauler may do business.

3. A business telephone number.

4. The name and address of the principal officer of a corporate waste tire hauler or the principal owner or owners of a waste tire hauler operating a proprietorship or partnership.

5. The following information for each motor vehicle used by the waste tire hauler for hauling tires:

- The name and address of the owner of the vehicle.
- The vehicle identification number of the vehicle.
- The year, make, and model of the vehicle.
- The license plate number of the vehicle.
- The name of the state in which the vehicle is registered.

6. A statement that the waste tire hauler agrees to comply with the vehicle identification requirements contained in this chapter.

7. The name of the permitted facility for waste tire disposal, storage or processing, or of another site of end use where the waste tires will be transported.

8. A statement that the waste tire hauler shall pay all amounts due to any individual or group of individuals when due for damages caused by improper disposal of waste tires by the waste tire hauler or the waste tire hauler's employee while acting within the scope of employment.

9. A statement that the waste tire hauler agrees to notify the department within 30 days of any change in the information contained in the registration form.

10. The signature of the waste tire hauler.

567—116.5(455B,455D) Registration fee. An application for initial registration or renewal shall be accompanied by a fee of \$50.

567—116.6(455B,455D) Bond form.

116.6(1) An application for registration or renewal shall not be approved by the department until the waste tire hauler has provided a bond in the sum of a minimum of \$150,000 on a form prescribed by the commissioner of insurance.

116.6(2) Bond requirements.

a. The bond shall be executed by a surety company authorized by the commissioner of insurance to do business in Iowa. The bond provided to the department shall be an original, or copy thereof. Facsimiles of the bond will not be accepted.

b. The surety shall name the state of Iowa as the obligee for the bond.

c. The bond shall be continuous in nature until canceled by the surety. The surety shall provide at least 30 days' notice in writing to the waste tire hauler and the department in the event of any intent to cancel the bond.

d. The waste tire hauler shall provide the department with a statement from the surety with each waste tire hauler registration renewal application, noting that the bond is paid and current for the annual period for which the waste tire hauler has applied for registration renewal.

[ARC 6147C, IAB 1/12/22, effective 2/16/22]

567—116.7(455B,455D) Marking of equipment. The following information shall be displayed on each side of equipment used for the hauling of waste tires, in letters and figures large enough to be read easily at a distance of 50 feet and in a color in contrast to the background.

1. The name of the registered waste tire hauler under whose authority the equipment is being operated.
2. The address of the registered waste tire hauler (city and state).
3. The registration number of the waste tire hauler, as assigned by the department. The hauler shall apply the following letters and symbol “IA TH#” preceding the assigned registration number.

567—116.8(455B,455D) Disposition of waste tires collected.

116.8(1) All tires collected by a waste tire hauler for which a fee has been collected or is to be charged shall be defined as a solid waste and shall be regulated as such.

116.8(2) Upon receipt of waste tires from a person or business, the waste tire hauler shall handle the waste tires as follows:

- a. The waste tires shall be directly transported to a tire collector, tire processor, or waste tire stockpile site, as permitted and approved by the department or applicable local or state agencies.
- b. The waste tires must be transported to a permitted site within 72 hours of initial pickup from the generator of the waste tires.
- c. The waste tire hauler may not establish or operate any intermediate storage, waste sorting, transfer, or processing activities regarding the waste tires collected, unless such activities occur at a facility or site for which a waste tire stockpile permit or processing permit has been issued in accordance with 567—Chapter 117.

567—116.9(455B,455D) Reporting requirements. A registered waste tire hauler shall make a semiannual report to the department on a form provided or approved by the department. The report shall provide the department with appropriate information to ensure that waste tires recovered by the waste tire hauler have been handled properly for disposal or processing. Failure of the waste tire hauler to submit a timely report will result in denial of the waste tire hauler’s renewal of registration.

116.9(1) *Reporting period.* The waste tire hauler shall submit semiannual reports to the department according to the following schedule:

- a. For waste tires collected during the six-month period beginning January 1 through June 30, the hauler shall submit a report by the following September 1.
- b. For waste tires collected during the six-month period beginning July 1 through December 31, the hauler shall submit a report by March 1 of the following year.

116.9(2) *Information required.* The semiannual report shall include the following information. All waste tire quantities determined by count or weight shall be reported in passenger tire equivalents.

- a. Quantity of waste tires collected by the waste tire hauler from within Iowa for the reporting period.
- b. Quantity of waste tires that are brought to Iowa by the waste tire hauler from out-of-state sources during the reporting period.
- c. Final disposition of all the waste tires collected during the reporting period by listing each tire collector, tire processor, waste tire stockpile site, or other beneficial site of end use, as approved by the department, and the total quantities of waste tires that the hauler has delivered to each.

116.9(3) *Documentation and record keeping.* The waste tire hauler shall keep appropriate records, including but not limited to receipts, invoices, or manifests, to document all quantities of waste tires hauled and disposed of by the waste tire hauler for the reporting period. These records shall be kept by the waste tire hauler for a minimum of three years, and shall be available for audit or inspection at the request of the department.

These rules are intended to implement Iowa Code sections 455B.301 to 455B.307 and 455D.111.

[Filed without Notice 6/18/02—published 7/10/02, effective 8/14/02]

[Filed 3/27/03, Notice 1/8/03—published 4/16/03, effective 5/21/03]

[Filed ARC 6147C (Notice ARC 5902C, IAB 9/8/21), IAB 1/12/22, effective 2/16/22]

CHAPTER 117
WASTE TIRE MANAGEMENT

[Prior to 5/15/02, see also 567—Chapter 219]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—117.1(455B,455D) Purpose. The purpose of this chapter is to establish guidelines for the proper management of waste tires, including disposal, collection, storage, processing, and beneficial reuse of waste tires and processed waste tire materials. The chapter shall not be construed to exempt a waste tire storage site or processing site from compliance with more stringent local ordinances, fire codes, or other applicable statutes.

567—117.2(455B,455D) Definitions. As used in this chapter:

“Bagel cut” means to cut a tire in half along its circumference.

“Baled tire” means a method of volume reduction of waste tires, whereby whole or cut tires are compacted into a bundle and then banded together to form a tire bale. Baled tires shall not be considered processed tires and shall be defined as solid waste, unless they are incorporated into an approved beneficial use project.

“Beneficial use” means the use or application of waste tires or processed tires in a manner that provides a benefit to an end user and that does not pose a threat to the environment or to public health and safety. Use of waste tires or processed tires primarily as a means for land disposal shall not be considered a beneficial use.

“Civil engineering application” means a form of reusing waste tires, either whole or processed, in place of naturally occurring materials in construction, so long as the waste tires provide a defined engineering benefit.

“Crumb rubber” means a material derived by reducing waste tires or other rubber into uniform granules of 3/8 inch or less, with the inherent reinforcing materials such as steel and fiber removed along with other contaminants.

“Cut tire” means a waste tire from which the tire face, tread, or sidewall has been cut or removed for beneficial use. A cut tire shall consist of pieces greater than 18 inches on any one side.

“Department” means Iowa department of natural resources.

“End user” means an industry, utility, business, entity, or individual that receives whole waste tires or processed tires and uses them for a raw material in a manufactured product, for energy recovery, or other beneficial use. A tire processor shall not be considered an end user.

“Energy recovery” means the extraction of the fuel or heat value from whole or processed tires through their controlled combustion at a permitted utility or industry.

“Operator” means the individual, corporation, or party that manages the daily work activities related to the collection, storage, and processing of waste tires and processed tire materials at a waste tire stockpile site or processing facility.

“Owner” means the individual, corporation, or party that is the legal owner of the real estate where a waste tire stockpile site or processing facility exists.

“Passenger tire equivalent” means a conversion measurement that is used to estimate waste tire weights and volume amounts and in which one passenger car tire with a rim diameter of 17 inches or less is equal to 20 pounds. One cubic yard of volume shall contain 15 passenger tire equivalents. Tires larger than a passenger car tire shall be evaluated for volume using this conversion measurement.

“Permit” means a permit issued by the department to establish, construct, modify, own, or operate a waste tire storage or processing site.

“Processed tire” means a tire that has been processed through grinding, shredding, or other means, thereby producing a material that is readily suitable for marketing into product manufacturing, energy recovery, or other beneficial reuse markets. Waste tires that have been compacted, baled, cut, or shredded without a suitable market shall not be considered processed tires and shall be regulated as solid waste.

“Processing” means producing or manufacturing usable materials from waste tires.

“Processing site” means a site which is used for the processing of waste tires and which is owned or operated by a tire processor who has a permit for the site.

“Site” includes all contiguous parcels of land under the ownership, management, or financial interest of an owner or operator receiving a permit through this chapter. Public rights-of-way and their easements shall not affect the continuity of a site for the purposes of this chapter.

“Site of end use” means a site where processed waste tires are recycled or reused in a beneficial manner authorized by the department.

“Tire bale.” See *“baled tire.”*

“Tire casing” means a used and worn tire that is suitable for the process of recapping. A tire casing stored for more than one year without being recapped shall be considered a waste tire.

“Tire collector” means a permitted person or business that owns or operates a site used for the storage, collection, or deposit of more than 500 waste tires or an authorized vehicle recycler who is licensed by the department of transportation pursuant to Iowa Code section 321H.4 and who owns or operates a site used for the storage, collection, or deposit of more than 3,500 waste tires.

“Tire processor” means a permitted individual or business that processes tires through grinding, shredding, or other means, thereby producing a material that is readily suitable for marketing into product manufacturing, energy recovery, or other beneficial reuse markets. “Tire processor” does not mean a person who retreads tire casings or who collects and stores tires.

“Used tire” means a tire that previously has been on a vehicle but that retains suitable tread depth and is free of damage or defects so that it may be safely returned to its original purpose.

“Waste tire,” as defined in Iowa Code section 455D.11, means a tire that is no longer suitable for its originally intended purpose due to wear, damage, or defect. This definition shall include a tire mounted on a rim, but not on a vehicle. “Waste tire” does not include a nonpneumatic tire.

“Waste tire hauler” means an individual or business providing waste tire hauling and disposal services, in accordance with Iowa Code section 9B.1.

“Waste tire stockpile” means a site that is used for the storage, collection, or deposit of waste tires or tire bales, including indoor, outdoor, and underground storage.

567—117.3(455B,455D) Waste tire disposal.

117.3(1) *Land disposal prohibited.* Land disposal of waste tires, in whole, cut, or shredded form, is prohibited. Waste tires shall be accepted at a permitted sanitary landfill for final disposal if the tires have first been cut into pieces that are not more than 18 inches on any one side.

117.3(2) *Transport to permitted facilities.* A person who transports waste tires for final disposal is required to dispose of the tires only at a permitted facility.

117.3(3) *Registered waste tire hauler.* A person who contracts with another person to transport more than 40 waste tires in a single load is required to contract only with a person registered as a waste tire hauler, pursuant to Iowa Code section 455D.11I.

567—117.4(455B,455D) Waste tire storage permits and requirements.

117.4(1) *Storage quantity limitations.*

a. No business or individual shall store more than 500 passenger tire equivalents without obtaining a permit for a waste tire stockpile pursuant to 117.4(2).

b. Businesses or individuals may temporarily store up to 1,500 passenger tire equivalents without obtaining a waste tire stockpile permit, subject to the following requirements:

(1) The waste tires are stored only in a mobile container, truck, or trailer, provided or serviced by a registered waste tire hauler.

(2) The waste tires are removed by the waste tire hauler or delivered to a waste tire processor at least every 60 days.

(3) The waste tire generator has a written copy of a contract or service agreement for waste tire disposal services from a registered waste tire hauler.

c. A permitted municipal landfill or solid waste transfer station shall be allowed the storage of up to 1,500 passenger tire equivalents without a permit if the waste tires are removed at least every 120 days and are stored in a manner to minimize the collection of water.

d. Persons who use waste tires for an approved beneficial use shall not be required to obtain a waste tire stockpile permit, subject to their compliance with the provisions of rule 567—117.8(455B,455D).

117.4(2) Waste tire stockpile permit.

a. Any tire collector, business or individual storing more than 500 passenger tire equivalents on any one site must obtain a waste tire stockpile permit. An authorized vehicle recycler, as licensed by the Iowa department of transportation, may store up to 3,500 passenger tire equivalents without a waste tire stockpile permit; any storage beyond this amount shall require full compliance with this subrule. This subrule is applicable to the indoor, outdoor, and underground storage of waste tires. If the site cannot meet the conditions to obtain a waste tire stockpile permit, the waste tires must be removed from the site and properly disposed of within 30 days.

b. Any tire collector, business, individual, owner or operator of a site seeking to construct a waste tire stockpile must obtain the permit from the department before initiating such operations. The permit shall be issued directly to the owner of the site and the designated tire collector that will be operating the stockpile.

c. Permits shall have an annual fee of \$850, payable to the department upon the application for a permit, and due annually beginning each July 1 thereafter at the rate of \$850. Permit fees shall not be prorated. The permit shall be valid for a period of three years from date of issuance. Failure to remit the annual renewal fee shall be cause for the department to revoke the permit.

d. Application for a permit must be made on a form provided by the department and must include, at a minimum, the following:

- (1) The name, address, and telephone number of the individual who directly owns the stockpile site.
- (2) The name, address, and telephone number of the tire collector at the stockpile site, if different from the owner.
- (3) A scaled map showing the areas proposed to be used for the storage of the waste tires, all property boundaries of the site, and the location of all buildings and major improvements on the site and within 300 feet of the property boundary.
- (4) A vector control plan to prevent infestations of mosquitoes and rodents for aboveground storage in an open area. The plan shall be prepared by a firm that provides professional vector management services, or by the permittee, if properly trained and certified in vector control procedures. The permittee must provide documentation to show adequate implementation and monitoring of the vector control plan.
- (5) A site closure plan. The plan shall describe the actions that would be taken to properly dispose of waste tire materials at the site 30 days prior to any intent to discontinue operations at the site so that, upon discontinuance of the operation, no violations of waste tire or solid waste disposal laws and regulations will exist.
- (6) An emergency response and remedial action plan, developed and implemented according to applicable provisions of 567—102.16(455B). The plan shall be developed with the input and review of the local fire department and local emergency management coordinator. The applicant shall provide documentation that an opportunity for such input and review has been received by these local authorities.
- (7) A financial assurance instrument in compliance with rule 567—117.7(455B,455D).
- (8) A certified check for \$850 made payable to the Department of Natural Resources.

117.4(3) Permitted storage requirements. A permitted waste tire stockpile site shall meet the following minimum permit conditions as set by the department:

- a. *Aboveground storage, open area.*
- (1) A waste tire stockpile site shall not contain more than 250,000 passenger tire equivalents.
 - (2) A single waste tire pile shall not contain more than 50,000 cubic feet of waste tires.
 - (3) The vertical dimension of a waste tire pile shall not exceed 10 feet.
 - (4) A single waste tire pile shall not be more than 100 feet in length.
 - (5) The surface area covered by a waste tire pile shall not exceed 5,000 square feet; the pile may not be constructed upon any waste tire materials or other flammable materials.
 - (6) A 50-foot fire lane must be maintained between any two tire piles.
 - (7) Tire bales shall be stored in piles no greater than 10 feet in height, 25 feet in width, or 50 feet in length, with a separation distance of 50 feet between piles of tire bales.
 - (8) All waste tire piles shall be located at least 50 feet from any building.

- (9) Trees and brush shall be cleared within 50 feet of any tire pile.
- (10) Combustible materials or volatile chemicals shall not be stored within 50 feet of any tire pile unless stored in approved fire-resistant containers or cabinets.
- (11) A 20-pound Class ABC dry chemical fire extinguisher shall be available within 100 feet of any one portion of the tire storage areas.
- (12) The site must be graded to prevent any standing pools of water and to limit the runoff and run-on of precipitation.
- (13) A waste tire pile must be at least 200 feet from any well, lake, pond, river, stream, sinkhole, or tile line surface intake unless appropriate grading, or the construction of a barrier, dike, or berm, is completed to intercept surface water flows that may impact such interceptors. This distance may then be reduced to 50 feet.
- (14) The stockpile site must be secured by a fence or barrier of a minimum of 6 feet in height to impede unauthorized vehicle and personal access. All gates and entry points shall be secured and locked when site personnel are not present.
- (15) No open burning of any type shall be allowed at the permitted stockpile site. All fueling of vehicles and equipment and any other work or activity that may release sparks or flame shall be conducted at least 50 feet from any tire storage area.
- (16) Signs shall be posted every 100 feet on site, placed for visibility of personnel on site, and state: "Open burning on-site prohibited." The perimeter of the site shall be posted with signs every 100 feet, placed for visibility to those off site, that state: "Highly flammable materials on-site. Burning in area not recommended."
- (17) All waste tire piles shall be located at least 300 feet from any property line, street, or public right-of-way.
 - b. *Aboveground storage, enclosed area.* Storage of waste tires shall comply with the requirements of 117.4(3) "a," subparagraphs (2) through (7), and the following:
 - (1) To qualify as an enclosed area, the area must be enclosed in a structure with a permanent roof and lateral protection to prevent precipitation from accumulating within the tires.
 - (2) An enclosed storage structure shall not contain more than 50,000 passenger tire equivalents.
 - (3) Combustible materials or volatile chemicals shall not be stored in a structure permitted for tire storage unless stored in approved fire-resistant containers or cabinets.
 - (4) A 20-pound Class ABC dry chemical fire extinguisher shall be available within 50 feet of any one portion of the tire storage areas.
 - (5) The storage structure must be secured from unauthorized access.
 - (6) No open burning of any type shall be allowed at the permitted stockpile site. All fueling of vehicles and equipment and any other work or activity that may release sparks or flame shall be conducted at least 50 feet from any tire storage area. The exterior of the enclosed storage area shall be posted with signs, placed every 100 feet, that state: "Highly flammable materials stored inside. Burning on-site prohibited."
 - c. *Underground storage.* To qualify as an underground waste tire storage site, the site must meet the following conditions:
 - (1) The site must be a licensed grain warehouse.
 - (2) All underground storage areas must be dry and not prone to the entry of surface water or groundwater.
 - (3) The underground storage areas must be secured from unauthorized access by locking gates, doors, barriers, or other devices.
 - (4) The site shall not store any volatile chemicals or other combustible materials within 150 feet of the tire storage area.
 - (5) For tires placed for storage after July 1, 2002, all such storage areas shall have access lanes, not less than 50 feet in width, arranged so that no portion of the storage area is more than 150 feet from an access lane.
 - (6) For tires placed for storage after July 1, 2002, the tires shall not be buried by debris, rubble, or other cover within the underground storage site.

(7) The underground storage site shall be limited to a maximum storage capacity of 4 million passenger tire equivalents.

117.4(4) Reporting requirements. The holder of a permit for a waste tire stockpile facility shall make a semiannual report to the department on a form as provided or approved by the department. The report shall state the following:

- a. Quantity of waste tires stored at the facility at the time of reporting, determined by count or weight and reported in passenger tire equivalents.
- b. Quantity of waste tires received from in-state sources during the reporting period.
- c. Quantity of waste tires received from out-of-state sources during the reporting period.
- d. For any waste tires removed from the permitted stockpile site during the reporting period, the quantity shall be given by equivalent count or weight of such waste tires removed. Documentation shall be provided to denote how the reported quantity of tires were disposed of at a permitted facility, reused, or resold.

567—117.5(455B,455D) Used tire storage.

117.5(1) Acceptable used tire storage. A used tire shall be stored in a manner that provides for the following:

- a. Prevention of the collection of water, dirt, or debris within the tire.
- b. Organized storage through stacking, rows, and sorting which provides for accurate descriptions and counts of the types and sizes of tires stored.
- c. Storage conforms to applicable local and state fire codes.

117.5(2) Inventory resale and reuse. Used tires stored for more than one year without documentation of active resale or reuse of tire inventory in a proportion equal to 75 percent of the amount stored shall be considered waste tires and shall be subject to the applicable waste tire storage and disposal rules of this chapter.

567—117.6(455B,455D) Waste tire processing facility permits and requirements.

117.6(1) Waste tire processing facility permit.

a. Any business or individual operating a tire processing facility shall obtain a waste tire processing permit prior to commencing such operations. The permit shall be issued directly to the owner and operator of the company that will be operating the tire processing facility.

b. Facilities that accept waste tires to cut, grind, or compact only for final disposal at a permitted sanitary disposal project shall be required to obtain a waste tire processing permit in accordance with these rules. Such facilities shall not store any cut or shredded waste tire materials for more than 30 days.

c. Businesses or individuals operating mobile waste tire processing equipment shall be required to obtain a waste tire processing permit. The permit shall authorize the operator to provide waste tire processing services statewide; however, mobile operations shall not be allowed to store any processed or whole waste tires at any facility or site owned or operated by the permittee unless specifically authorized within the permit.

d. Businesses or individuals who cut, grind, or compact for disposal waste tires generated directly from operations at their own on-site manufacturing operation or service facility shall not be required to obtain a waste tire processing permit provided that all waste tire materials processed on site are disposed of at least every 30 days at a permitted facility and no more than 500 waste tires are processed monthly.

e. Processing permits shall have an annual fee of \$850, payable to the department upon the application for a permit, and due annually beginning each July 1 thereafter at the rate of \$850. Permit fees shall not be prorated. The permit shall be valid for a period of three years from date of issuance. Failure to remit the annual renewal fee shall be cause for the department to revoke the permit.

f. A permitted processing facility shall have a site closure plan. The plan shall describe the actions that would be taken to properly dispose of all waste tire materials, in whole or processed form, at the site 30 days prior to any intent to discontinue operations at the site so that, upon discontinuance of the operation, no violations of waste tire or solid waste disposal laws and regulations will exist.

g. A permitted processing facility shall have an emergency response and remedial action plan, developed and implemented according to applicable provisions of 567—102.16(455B). The plan shall be

developed with the input and review of the local fire department and local emergency management coordinator. The applicant shall provide documentation that an opportunity for such input and review has been received by these local authorities.

h. A permitted processing facility shall obtain financial assurance in accordance with rule 567—117.7(455B,455D), as necessary.

i. Application for a processing permit must be made on a form provided by the department and must include, at a minimum, the following:

(1) The name, address, and telephone number of the individual who directly owns the tire processing facility.

(2) The name, address, and telephone number of the operator of the processing facility, if different from the owner of the tire processing facility.

(3) The type of processing operations to be conducted at the facility, including descriptions of processing equipment and its hourly capacity, operating hours of the facility, and types of processed tire materials to be produced.

(4) A scaled map showing all areas proposed for waste tire storage and processing operations, all property boundaries of the site, and the location of all buildings and major improvements on the site and within 300 feet of the property boundary.

(5) A site closure plan, as referenced in 117.6(1)“f.”

(6) An emergency response and remedial action plan, as referenced in 117.6(1)“g.”

(7) A certified check for \$850 made payable to the Department of Natural Resources.

(8) A financial assurance instrument in compliance with rule 567—117.7(455B,455D).

117.6(2) *Permitted waste tire processing facility permit requirements.* A permitted waste tire processing facility shall meet the following minimum permit requirements as set by the department. Nothing in this rule shall limit the permitted tire processing facility from compliance with more stringent local ordinances, fire codes, or other applicable statutes.

a. The site must be graded to prevent any standing pools of water and to limit the run-on of precipitation in all areas where waste tires or processed tire material is stored.

b. The processing facility site must be secured by a fence or barrier of a minimum of 6 feet in height to impede unauthorized vehicle and personal access. All gates and entry points shall be secured and locked when site personnel are not present.

c. No open burning of any type shall be allowed at the permitted stockpile site. All fueling of vehicles and equipment and any other work or activity that may release sparks or flame shall be conducted at least 50 feet from any tire storage area.

d. Signs shall be posted every 100 feet on site, placed for visibility of personnel on site, and state: “Open burning on-site prohibited.” The perimeter of the site shall be posted with signs every 100 feet, placed for visibility to those off site, that state: “Highly flammable materials on-site. Burning in area not recommended.”

117.6(3) *Preprocessed whole waste tire storage.*

a. Permitted storage of whole waste tires on site prior to processing shall be limited to the quantity of tires that the facility has the ability to process within a three-day period. This quantity shall be determined by multiplying the actual number of working hours that processing is normally to occur during a typical three-day period by 80 percent of the manufacturer’s specifications of hourly capacity of the processing equipment. After one year of the facility’s operation, documented actual hourly production shall be used for this permit determination in lieu of the manufacturer’s equipment specifications.

b. A tire processor may store an additional three-day capacity of preprocessed waste tires, above the initial three-day capacity, using the same quantity determination as stated in 117.6(3)“a,” subject to the tire processor’s obtaining and maintaining financial assurance for these additional tires to be stored prior to processing in accordance with rule 567—117.7(455B,455D).

c. Under no circumstance shall a waste tire processor be allowed the storage of more than 75,000 preprocessed waste tires, measured as passenger tire equivalents, through any combination of processing performance or financial assurance determinations. All waste tires on site, including those stored indoors or outdoors or in trucks, trailers, or mobile cages, shall be counted in determining compliance with this rule.

d. Any single waste tire shall not be stored at the processing facility for more than 30 days before the tire is processed.

e. Any tire bales produced or stored at a tire processing facility shall count toward the maximum allowable quantity of preprocessed waste tire storage.

f. All preprocessed tires stored outdoors shall comply with the following:

(1) A single waste tire pile shall not contain more than 50,000 cubic feet of waste tires.

(2) The vertical dimension of a waste tire pile shall not exceed 10 feet.

(3) A single waste tire pile shall not be more than 100 feet in length.

(4) The surface area covered by a waste tire pile shall not exceed 5,000 square feet.

(5) A 50-foot fire lane must be maintained between any two tire piles.

(6) A waste tire pile shall not be located within 50 feet of any property line, street, public right-of-way, or building.

(7) A tire pile must be at least 200 feet from any well, lake, pond, river, stream, sinkhole, or tile line surface intake unless appropriate grading, or the construction of a barrier, dike, or berm, is completed to intercept surface water flows that may impact such interceptors. This distance may then be reduced to 50 feet.

(8) Trees and brush shall be cleared within 50 feet of any tire pile.

(9) Combustible materials or volatile chemicals shall not be stored within 50 feet of any tire pile unless stored in approved fire-resistant containers or cabinets.

(10) A 20-pound Class ABC dry chemical fire extinguisher shall be available within 100 feet of any one portion of tire storage areas.

(11) Waste tires stored in trucks, trailers, or mobile containers must be at least 10 feet from any property line or building.

(12) Tire bales shall be stored in piles no greater than 10 feet in height, 25 feet in width, or 50 feet in length, with a separation distance of 50 feet between piles of tire bales.

g. Indoor storage of waste tires shall not be allowed within 20 feet of any waste tire processing or handling equipment. All waste tires being actively unloaded and fed into processing equipment, including those being off-loaded from trucks, trailers, or mobile containers, shall be cleared at least 20 feet away from the processing equipment by the end of the last working shift of the day. Any remaining indoor storage shall comply with the requirements of 117.4(3) "b," subparagraphs (3) through (7), and the following:

(1) No more than 25,000 passenger tire equivalents shall be stored indoors.

(2) Combustible materials or volatile chemicals shall not be stored within 25 feet of any waste tire storage area unless they are stored in approved containers pursuant to applicable fire codes.

(3) A 20-pound Class ABC dry chemical fire extinguisher shall be available within 50 feet of any one portion of indoor tire storage areas.

(4) The storage structure must be secured from unauthorized access.

117.6(4) Processed tire storage.

a. Storage of processed tire materials at a tire processing facility shall be limited to the volume of material in aggregate that the processor manufactures within a consecutive 60-day period, using the facility's daily average capacity for processing whole tires as determined in 117.6(3) "a." The department shall have the final authority for determining the allowable quantities of processed tire materials to be stored.

b. Under no circumstances shall the equivalent of more than 500,000 processed tires, or 5,000 tons of material, be stored at the processing site.

c. All processed tire material at the site of processing shall be stored as follows:

(1) Processed tires that have been shredded or ground into pieces that are 9 inches or smaller shall be stored in piles no more than 15 feet in height, 100 feet in length, and 50 feet in width and shall contain no more than 75,000 cubic feet of product by volume.

(2) Processed tires cut into strips, sidewalls, or other pieces larger than 9 inches shall be stored in piles no more than 10 feet in height, 100 feet in length, and 50 feet in width and shall contain no more than 50,000 cubic feet of product by volume.

(3) A 50-foot fire lane must be maintained between piles of processed tire material, with the base of the lane kept free from the accumulation of waste tire-derived residuals or materials or other debris.

(4) All processed tire material shall be stored at least 50 feet from any property line, street, public right-of-way, or building.

(5) Trees and brush shall be cleared within 50 feet of the storage of all processed tire material.

(6) A 20-pound Class ABC dry chemical fire extinguisher shall be available within 100 feet of any one portion of processed tire storage areas.

d. For indoor storage of more than 5,000 cubic feet of processed tire material, the material shall be stored on concrete floors and all retaining walls, bins, barriers, and roofing material for the material storage shall be constructed of nonflammable materials.

e. The processor must demonstrate a reasonable market demand for all types and quantities of processed product stored at the processing site. Market demand for processed waste tire products shall be demonstrated by the processor through at least one of the following criteria:

(1) Active contracts, purchase orders, or supply agreements with an end user, noting quantities of material required by the end user, specifications of the quality of the product required by the end user, and monthly or annual demand of product by the end user from the processor. This information shall be made available for review by the department as required to determine compliance with this rule.

(2) Historic, ongoing demand for product by an end user or type of end user, within the state or surrounding region.

(3) Information and evidence that any proposed new product or use for processed waste tires produced by the tire processor will be marketed in a timely fashion, with sufficient demand and consumption by end user markets.

f. The department shall have the final authority in determining storage limitations, including prohibition, for processed tire products when active markets are not evident from information provided by the tire processor.

117.6(5) Reporting requirements. The holder of a permit for a waste tire processing facility shall make a semiannual report to the department on a form as provided or approved by the department. The report shall state the following:

a. Quantity of waste tires received by the facility during the reporting period.

b. Quantity of waste tires received by the facility from in-state sources.

c. Quantity of waste tires received by the facility from out-of-state sources.

d. Quantity of unprocessed waste tires on hand at the facility at the time of reporting.

e. Quantity of waste tires processed and delivered to end users during the reporting period, by product type, with determinations of quantities of product delivered to identified in-state and out-of-state markets or sites.

f. Quantity of processed tire material currently stored at the facility, by product type.

117.6(6) Disposal of solid wastes from tire processing.

a. All waste materials, residuals, and scraps derived from tire processing operations shall be regulated as solid waste. These materials include, but are not limited to, tire bead rings, metal wire, synthetic fibers, and cording.

b. All of these solid wastes must be disposed of at least every 60 days at a permitted sanitary disposal project, scrap recycler, or location, as approved by the department.

c. Documentation of the disposal of these solid wastes must be kept at the processing facility for a period of three years.

567—117.7(455B,455D) Financial assurance for waste tire sites. Permitted waste tire stockpile sites and waste tire processing facilities must obtain and submit a financial assurance instrument to this department for permitted waste tire storage, in accordance with these rules. The financial assurance instrument shall provide monetary funds to properly dispose of any waste tires that may remain at a waste tire site due to the owner's or operator's failure to properly close the site within 30 days of permit termination, revocation, or expiration. Waste tire storage and processing sites operated by state, county, or city agencies or operated in conjunction with a sanitary landfill shall not be required to obtain financial assurance instruments.

117.7(1) *No permit without financial assurance.* A permit shall not be issued to the owner and operator of a waste tire processing or storage site until a financial assurance instrument has been submitted to and approved by the department as necessary.

117.7(2) *Financial assurance amounts required.*

a. Waste tire stockpile sites shall have financial assurance coverage equal to \$2.50 per waste tire collected and stored.

b. Waste tire processing sites shall have financial assurance coverage equal to \$2.50 per waste tire stored above the permitted three-day processing capacity, in accordance with 117.6(3) “*b.*”

117.7(3) *Acceptable financial assurance instruments.* Financial assurance may be provided by cash, surety bond, letter of credit, secured trust fund, or corporate guarantee, as follows:

a. Cash payments shall be provided by a certified check, made payable to the Department of Natural Resources.

b. A surety bond must be written by a company authorized by the commissioner of insurance to do business in the state, and the surety bond shall comply with the following:

(1) The bond shall be in a form approved by the commissioner of insurance and shall be payable to the department of natural resources.

(2) The bond must be continuous until canceled by the surety. Written notice of intent to cancel the bond must be provided to the owner and operator and to the department at least 90 days before the effective date of cancellation.

c. A secured trust fund shall name the department of natural resources as the entity authorized to draw funds from the trust, subject to proper notification to the trust officer of failure by the permittee to comply with proper removal and disposal of waste tires covered by the financial assurance provided by the trust.

d. The department may require, at the expense of the permittee, a financial audit of an individual or firm requesting the use of a letter of credit or corporate guarantee.

117.7(4) *Financial assurance cancellation and permit suspension.*

a. Within 30 days of receipt of a written notice of cancellation of financial assurance by the surety, the owner or operator must provide the department an alternative financial assurance instrument. If a means of continued financial assurance is not provided within that 30 days, the department shall suspend the permit.

b. The owner or operator shall perform proper closure within 30 days of the permit suspension. For the purpose of this rule, proper closure means removal of all tires and related products from the site or facility through acceptable disposal or processing options.

c. If the owner or operator does not properly close the site within the 30-day period allowed, the department shall file a claim with the surety company, trust, or other financial assurance instrument provider to collect the amount of funds necessary to properly close the site.

d. Any financial assurance instrument provided to the department in compliance with this rule must be payable to the department and must remain in continuous effect until the director of the department gives written notification to the owner, operator, and surety provider that the covered site has been properly closed. An owner or operator who elects to terminate a permitted activity, or whose renewal application has been denied, or whose permit has been suspended or revoked for cause, must submit within 30 days of the termination of the permit a schedule for completing proper closure of the terminated activity. Closure completion cannot exceed 60 days from the date of termination of the permit.

e. The director may request payment from any surety to provide for the purpose of completing closure when one of the following circumstances exists:

(1) The owner or operator is more than 15 days late in providing a schedule for closure or for meeting any date in the schedule for closure.

(2) The owner or operator declares an economic inability to comply with this rule, either by sending written notification to the director or through an action such as, but not limited to, filing for bankruptcy.

[ARC 6147C, IAB 1/12/22, effective 2/16/22]

567—117.8(455B,455D) Beneficial uses of waste tires.

117.8(1) *Role of the department.* In order to ensure that all approved uses of whole or processed waste tires do not pose a threat to the environment or to the public health, welfare, and safety, the department shall have the authority to determine if a proposed use of waste tires is beneficial and shall have the authority to approve or deny applications if such a benefit is not evident. Proposed beneficial uses in which the primary purpose of the project is as a land disposal mechanism shall not be approved.

117.8(2) *Waste tire products exempted.* The following end uses of materials derived, processed, or recycled from waste tires shall be considered beneficial reuses under this chapter and shall not require individual beneficial use designations from the department for their use at a specific site of end use.

- a. Asphalt rubber, including asphalt cement modified with a crumb rubber modifier;
- b. Buffing rubber, defined as high quality tire rubber, which is a by-product from the conditioning of tire casings in preparation for retreading;
- c. Carbon black derived from the thermal or oxidative decomposition of tires;
- d. Crumb rubber material, including rubber granules used for soil amendments or surfacing materials for playgrounds, equestrian arenas, and athletic fields;
- e. Crumb rubber modifiers used in asphalt paving materials;
- f. Tire-derived fuel (TDF), which is a fuel derived from waste tires, including whole tires, processed into pieces that satisfy the specifications of the end user for use as either a primary or supplemental fuel. Use of TDF requires modification of air source construction and operation permits if such use is not already recognized in the end user's permit.

117.8(3) *Beneficial uses for whole waste tires.* This subrule establishes acceptable beneficial uses for whole waste tires and required notifications and approvals that must be obtained from the department prior to placement of waste tires at the site of end use. The following applications shall be considered acceptable beneficial uses for whole waste tires:

- a. Tire swings, sandboxes, or other equipment for child play areas on residential lots or at schools, care centers, and recreational areas;
- b. Dock bumpers at vehicle loading/unloading docks or marine docks;
- c. Crash barriers at racetracks;
- d. Agricultural uses to hold down covers over hay, silage, and other agricultural commodities. When not in use, the tires should be neatly stacked;
- e. Structures for military and police training at facilities under ownership or management of local, state, or federal agencies;
- f. Artificial fishing reefs and fish habitat structures constructed at facilities under ownership or management of a county conservation board, the department, or a federal agency;
- g. Stream bank erosion control and culvert outlet tire mats, constructed as follows:
 - (1) The tires shall be placed in a single layer and banded together with a noncorrosive strip;
 - (2) All the tires shall be drilled or punctured to allow for outflow of air to prevent their flotation when submerged;
 - (3) The banded mat shall be anchored with cable at least 0.5 inches in diameter;
 - (4) The cables shall then be fastened to buried anchors made of treated timbers or concrete, at least every 50 feet along the top of the mat and intermittently in the middle;
 - (5) The mat shall extend 4 to 6 feet out on the channel bottom;
 - (6) The outermost row on the channel bottom shall be filled with rocks or broken concrete;
 - (7) Vegetation shall be planted in and around the tire mat; rows within the tire mat that are too wet for vegetation establishment shall be filled with rocks or broken concrete; and
 - (8) Any variation from these design standards shall be acceptable only under the direction of an Iowa-licensed professional engineer.
- h. Construction of residential dwelling structures or other buildings for which a building permit has been obtained from local government officials;
- i. Culvert piping made from waste tires with a rim diameter of 21 inches or greater and subject to the following design criteria:

(1) The maximum depth of water flows within the culvert shall be no greater than 75 percent of the piping diameter;

(2) Sand or similar aggregate material must be installed in the lower portions of the culvert piping to provide ballast and limit mosquito infestations;

(3) The culvert must not be installed below the highest seasonal groundwater elevation;

(4) The maximum depth of earthen or aggregate coverings over the culvert shall not exceed the outside diameter of the whole tires used in the culvert;

(5) Soils used for backfill around and above the culvert shall be compacted so as to provide a culvert deflection of less than 5 percent of the outside diameter; and

(6) Vertical sections of tire culvert piping shall be designed with safety measures to prevent unauthorized access by or hazards to children and animals.

117.8(4) *Required notifications and approval for whole tire uses.* Prior to the installation or placement of waste tires for a beneficial use as approved in subrule 117.8(3), the owner or operator of the site of end use shall properly notify or seek approval from the department for the proposed beneficial use under the following circumstances. These circumstances apply to the total combined amount of tire material that already is, or is intended to be, used at the site:

a. For applications of less than 250 whole waste tires, notification to the department shall not be required, subject to the end user's compliance with all requirements of this chapter.

b. For applications of 250 to 500 whole waste tires, the department shall be notified in writing no less than 30 days prior to the construction or placement of waste tires for a beneficial use, with the following information provided:

(1) The name, address, and telephone number of the owner, operator, or individual responsible for the beneficial use application at the site of end use;

(2) The address of the site of beneficial end use;

(3) The estimated total number of tires to be used;

(4) A description of the beneficial use application;

(5) A project time line, including proposed project start and end dates; and

(6) A statement that explains how the site owner shall properly dispose of such waste tires in the event that the beneficial use is discontinued or dismantled.

c. For applications of more than 500 waste tires, approval by the department shall be obtained prior to any such applications. Approval requests shall be made to the department in writing and shall contain all information as requested in paragraph 117.8(4) "b," as well as a scaled plan of the site of end use with areas noted where whole waste tires are to be placed, including locations of the site of end use property lines and the location of any structures within 300 feet of the site of end use.

117.8(5) *Prevention of public health risks for whole tire uses.* All beneficial uses of whole waste tires as approved in this rule shall have incorporated into their design and construction measures to prevent the retention and stagnation of water, in the event that such conditions are likely to exist. These measures shall include, at a minimum, the piercing or drilling of holes in whole waste tires to allow for water drainage. Such measures shall be designed to minimize risks to public health and safety caused by the breeding of disease-carrying insects and rodents.

117.8(6) *Beneficial uses for shredded waste tires.* This subrule establishes acceptable beneficial uses for shredded waste tires and required design criteria that shall be observed in the placement of shredded tires at the site of end use. The following applications shall be considered acceptable beneficial uses for shredded waste tires:

a. Horizontal drainage structures (French drains) designed to lower the groundwater table and transport excess water to another location or drainage structure and constructed as follows:

(1) The elevation of the drain outlet must be lower than the average seasonal groundwater table to allow gravity drainage through the drainage structure;

(2) The drainage structure width shall be no less than 3 feet and no more than 6 feet;

(3) The minimum depth of shredded tire material in the trench shall be greater than 4 feet;

(4) The minimum thickness of backfill over the trench shall be 2 feet;

(5) Headloss of water flowing through the drain shall be due to elevation changes only; and

(6) Any site of end use to contain drainage structures composed of more than 300 cubic yards of shredded tires shall be constructed under the auspices of an Iowa-licensed professional engineer.

b. On-site wastewater treatment and disposal system construction, to include use of shredded tires in lateral trenches and as fill to cover distribution pipes under the following conditions:

(1) The on-site wastewater treatment and disposal system is constructed and permitted according to the requirements of 567—Chapter 69;

(2) Shredded tires used in the system have a minimum dimension of 1 inch on any one side and a maximum dimension of 3 inches on any one side; and

(3) The administrative authority responsible for issuance of the permit approves the beneficial use. The authority shall have the sole discretion to deny use of shredded tires in system construction based on any engineering or design principle concerns.

c. Lightweight fill in public roads, public road embankment construction, and other public civil engineering applications if all of the following conditions are met:

(1) The tire shreds are of uniform composition and sizing;

(2) The tire shreds are not mixed with other solid wastes, vegetation, composted materials, or other processed tire products, including separated tire bead wire, steel cording or nylon fibers;

(3) The tires are not placed in direct contact with surface water or groundwater;

(4) The shredded tires are isolated from overburden materials by a protective membrane or liner to prevent intrusion and settling of overburden; and

(5) An Iowa-licensed professional engineer designs and supervises the incorporation of shredded tires in beneficial uses of this manner.

d. Structural foundation drainage material used in a project as approved through a local building permit;

e. A bulking agent for composting operations at permitted composting facilities, with tire shreds used to be no larger than 3 inches on any one side; and

f. Leachate drainage medium at a permitted municipal landfill, provided that the medium meets engineering and design requirements for the landfill's operating permit, pursuant to 567—Chapter 102.

117.8(7) Beneficial uses for baled tires. This subrule establishes acceptable beneficial uses for baled tires and required notifications and approvals that must be obtained from the department prior to placement of baled tires at the site of end use.

a. *Beneficial uses.* Civil engineering applications, including stream bank and soil erosion control projects, shall be considered acceptable beneficial use applications for baled tires. Such applications involving the combined use of more than 50 cubic yards of baled tires at any one site of end use must be conducted under the immediate direction of one of the following entities:

(1) A federal agency including, but not limited to, the Army Corps of Engineers, the Natural Resources Conservation Service, or the Bureau of Land Management;

(2) A state agency including, but not limited to, the Iowa department of transportation; or

(3) An Iowa-licensed professional engineer.

b. *Required notifications and approval.* Prior to the installation or placement of baled tires for beneficial uses as approved in this rule, the owner or operator of the site of end use shall properly notify or seek approval from the department for the proposed beneficial use under the following circumstances. These circumstances apply to the total combined amount of tire material that already is, or is intended to be, used upon the site:

(1) For applications of less than 25 cubic yards of baled tires at a site of end use, notification to the department shall not be required, subject to the end user's compliance with all requirements of this chapter.

(2) For applications of 25 to 50 cubic yards of baled tires, the department shall be notified in writing no less than 30 days prior to the construction or placement of baled tires for a beneficial use, with the following information provided:

1. The name, address, and telephone number of the owner, operator, or individual responsible for the beneficial use application at the site of end use;

2. The address of the site of beneficial end use;

3. The estimated total number of cubic yards of tires to be used;

4. A description of the beneficial use application;
5. A project time line, including proposed project start and end dates; and
6. A statement that explains how the site owner shall properly dispose of such baled tires in the event that the beneficial use is discontinued or dismantled.

(3) For beneficial use applications of more than 50 cubic yards of baled tires, approval by the department shall be obtained prior to any such applications. Approval requests shall be made to the department in writing and shall contain all information as requested in subparagraph 117.8(7) "b"(2), as well as a scaled plan of the site of end use with areas noted where baled tires are to be placed, including locations of the site of end use property lines, and the location of any structures within 300 feet of the site of end use.

117.8(8) *Beneficial uses for cut tires.* This subrule establishes acceptable beneficial uses for cut tires. Notifications and approvals shall not be required by the department prior to the use or placement of cut tires at a site of end use as approved in this rule, so long as such uses have incorporated into their design and construction measures to prevent the retention and stagnation of surface water, in the event that such conditions are likely to exist. Such measures shall be designed to minimize risks to public health and safety caused by the breeding of disease-carrying insects and rodents. The following applications shall be considered acceptable beneficial uses for cut tires:

- a. Agricultural uses to hold down covers over hay, silage, and other agricultural commodities;
- b. Traffic control devices for use in public roadway construction projects;
- c. Portable surfaces manufactured from tire faces or tread;
- d. Silt collection fences manufactured from tire faces or tread; and
- e. Bagel-cut tires used for underturf water conservation and turf growth enhancement systems at golf courses.

117.8(9) *Requests for approval of other beneficial use designations.* The department shall have the authority to approve or deny requests for beneficial use applications for whole, shredded, baled, or cut waste tires that are not specifically addressed within this chapter. Requests for such use determinations shall be made to the department in writing. The department may request project descriptions and supporting scientific and engineering data to determine if a request for a beneficial use designation is warranted. The department shall approve or deny a request for approval within 30 days of receipt of such a request and supporting data if so required by the department. The department shall have the sole authority to deny a beneficial use request if the department determines that any one of the following conditions exists:

- a. The requested beneficial use designation poses a risk to the environment or to the public health, welfare, and safety;
- b. The requested beneficial use designation is determined to have the primary purpose as a land disposal mechanism, and any beneficial use would be incidental in nature; or
- c. The requested beneficial use designation would not be in accordance with other applicable federal, state, or local laws, regulations, and ordinances.

117.8(10) *Compliance with local, state, and federal regulations.* Any proposed beneficial use project or application of whole, shredded, baled, or cut waste tires may require approval or permits from federal, state, and local agencies, under other laws, regulations, and ordinances, as applicable, including but not limited to the following:

- a. The Army Corps of Engineers, for projects involving navigable waterways and other waterways over which it has jurisdiction;
- b. Waste tire beneficial use applications involving placement on or within land or waters contained within a floodplain which require approval from the department's floodplain management program, as specified in 567—Chapters 70 through 75; and
- c. Local building codes, zoning and land-use covenants, ordinances, and guidelines.

117.8(11) *Storage of waste tires prior to beneficial use application.* Whole, shredded, cut, or baled waste tires to be used for a beneficial use application may be stored at the site of end use, subject to the following requirements:

- a. Such tire materials shall be stored in piles or bales for no longer than 60 days prior to the date of application, except for whole waste tires for agricultural uses as specified in paragraph 117.8(3) "d."

b. All storage of such waste tire materials shall be conducted in accordance with the uniform fire code and the requirements of 117.4(3) and 117.6(4) “*c*” as applicable.

c. Any storage of waste tires associated with a proposed beneficial reuse project at a site of end use for longer than 60 days without implementation of completion of a beneficial reuse project shall be subject to the waste tire storage permitting requirements as contained in rule 567—117.4(455B,455D).

These rules are intended to implement Iowa Code sections 455B.301 to 455B.307 and 455D.11 to 455D.11H.

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CHAPTER 118 DISCARDED APPLIANCE DEMANUFACTURING

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—118.1(455B,455D) Purpose. The purpose of this chapter is to implement Iowa Code chapter 455B, division IV, part 1, and section 455D.6(6) to ensure the proper removal and disposal of electrical parts containing polychlorinated biphenyls (PCBs), components containing mercury, and refrigerants (e.g., CFCs and HCFCs) from discarded appliances.

567—118.2(455B,455D) Applicability and compliance.

118.2(1) All discarded appliances must be demanufactured before being disposed of or recycled. This chapter does not apply to the service, repair, reuse or rebuilding of appliances or components for their original purpose. These rules do not apply to the removal of capacitors, refrigerants or components containing mercury during the maintenance or service of equipment containing such items.

118.2(2) A person must obtain an appliance demanufacturing permit (ADP) from the department of natural resources (DNR) before conducting any demanufacturing activities.

118.2(3) Any person engaged in demanufacturing must be in compliance with all federal and state laws relating to the management and disposition of all hazardous wastes, hazardous materials, universal wastes, PCBs and refrigerants.

567—118.3(455B,455D) Definitions.

“Appliances” means household and commercial devices such as refrigerators, freezers, kitchen ranges, air-conditioning units, dehumidifiers, gas water heaters, furnaces, clothes washers, clothes dryers, dishwashers, microwave ovens and commercial coolers with components containing mercury, refrigerants, or PCB-containing capacitors.

“Ballast” means an electrical device containing capacitors for the purpose of triggering high-level electrical components. A ballast provides electrical balance within the high-level electrical component circuitry.

“Capacitor” means a device for accumulating and holding a charge of electricity that consists of conducting surfaces separated by a dielectric fluid.

“CFC” or *“CFCs”* means chlorofluorocarbons, including any of several compounds used as refrigerants.

“CFR” means Code of Federal Regulations.

“Demanufacturing” means the removal of components, including but not limited to PCB-containing capacitors, ballasts, mercury-containing components, fluorescent tubes, and refrigerants, from discarded appliances.

“Discarded” means no longer to be used for the original intended purpose.

“DOT-approved container” means those containers approved by the U.S. Department of Transportation, the agency responsible for shipping regulations for hazardous materials in the United States.

“Facility” means any landfill, transfer station, material recovery facility, salvage business, appliance service or repair shop, appliance demanufacturer, shredder operation or other party which may accept appliances for demanufacturing. A demanufacturing facility may occupy a portion of a material recovery facility, salvage business, landfill, transfer station or other site.

“Fixed facility” means a permitted appliance demanufacturer operating at a permanent location.

“Fluff” means the residual waste from the shredding operation after metals recovery.

“Hazardous condition” means any situation involving an actual, imminent or probable spillage, leakage, or release of a hazardous substance onto the land, into a water of the state or into the atmosphere which, because of the quantity, strength and toxicity of the hazardous substance, its mobility in the environment and its persistence, creates an immediate or potential danger to the public health or safety or to the environment.

“*HCFC*” or “*HCFCs*” means hydrochlorofluorocarbons, including any of several compounds used as refrigerants.

“*Mercury-containing components*” means devices containing mercury. Examples include, but are not limited to, thermostats, thermocouples, mercury switches and fluorescent tubes.

“*Mobile operation*” means a permitted appliance demanufacturer that has equipment capable of operating in an area away from a fixed, permitted location.

“*PCB*” or “*PCBs*” means polychlorinated biphenyl, which is a chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees, or any combination of substances that contain polychlorinated biphenyl.

“*Point of demanufacturing*” means the actual location of demanufacturing for fixed facilities and mobile operations.

“*Reclaim*” means to reprocess refrigerant to an EPA ARI-700-88 standard.

“*Recovery*” means to remove all refrigerants to EPA standards.

“*Small capacitor*” means a capacitor which contains less than 1.36 kg (3 lbs) of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 1,639 cubic centimeters (100 cubic inches) may be considered to contain less than 1.36 kg (3 lbs) of dielectric fluid, and a capacitor whose volume is more than 3,278 cubic centimeters (200 cubic inches) must be considered to contain more than 1.36 kg (3 lbs) of dielectric fluid. A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg (3 lbs) of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs).

567—118.4(455B,455D) Storage and handling of appliances prior to demanufacturing.

118.4(1) Any person collecting and storing discarded appliances must store the appliances so as to prevent electrical capacitors, refrigerant lines and compressors, and mercury-containing components from being damaged and allowing a release into the environment.

118.4(2) No method of handling discarded appliances may be used which in any way damages, cuts or breaks refrigerant lines or crushes compressors, capacitors, or mercury-containing components, or may cause a release of refrigerant, PCBs or mercury into the environment.

118.4(3) No more than 1,000 discarded appliances may be stored at a location prior to demanufacturing.

118.4(4) Discarded appliances may not be stored for more than 270 days before being demanufactured.

567—118.5(455B,455D) Appliance demanufacturing permits.

118.5(1) *Permit required.* A person must obtain an appliance demanufacturing permit (ADP) from the department before conducting any demanufacturing activities.

118.5(2) *Types of permits.*

a. A person may request a permit that excludes appliances that contain a particular type of material (e.g., refrigerants, sodium chromate, PCBs, or mercury switches). Persons may not demanufacture or place their unique mark on an appliance that once contained a material that is excluded from their permit. An appliance demanufacturing facility must clearly post the types of appliances the facility does not accept.

b. Permits may be issued for both fixed facilities and mobile operations.

118.5(3) *Transfer of title and permit.* If title to an appliance demanufacturing facility is transferred to another party, the department shall transfer the permit within 60 days if the department determines that the following requirements have been met:

a. The title transferee has applied in writing to the department within 30 days of the transfer of title to request a transfer of the permit.

b. The permitted facility and title transferee are in compliance with Iowa Code chapters 455B and 455D, this chapter, and the conditions of the permit.

118.5(4) *Permit conditions.* A permit may be issued with conditions, specified in writing by the department, that are necessary to ensure the appliance demanufacturing facility can be operated in a safe and effective manner and in compliance with Iowa Code chapters 455B and 455D and this chapter.

118.5(5) *Inspection of site and operation.* The department shall inspect facilities prior to issuing an appliance demanufacturing permit. The permit will not be issued until the facility is in compliance with these rules. Appliance demanufacturing facilities may be inspected by the department throughout the permit period and prior to permit renewal.

118.5(6) *Duration of permits.* Appliance demanufacturing permits shall be issued and may be renewed for a five-year term.

118.5(7) *Request for permit renewal.* Applications for permit renewal must address any changes to the information previously submitted pursuant to subrule 118.5(1). If there has been no change in an item, the applicant shall so indicate on the application form. The renewal application, Form 542-8005, must be submitted to the solid waste section of the DNR central office in Des Moines a minimum of 60 days before permit expiration.

118.5(8) *Request for permit modification.* An application for permit amendment must be submitted and the amendment must be issued by the department before significant changes may be made by the permit holder to the process or facility. The applicant shall provide a revised plan of operations, a contingency plan, and any other documentation required in rule 118.6(455B,455D) that will change.

118.5(9) *Factors in permit issuance decisions.* The department may request that additional information be submitted for review to make a permit issuance decision. The department may review and inspect the facility, its agents and operators, and compliance history. The department may review whether a good-faith effort to maintain compliance and protect human health and the environment is being made and whether a compliance schedule is being followed. The department may issue a permit on a trial basis.

567—118.6(455B,455D) Appliance demanufacturing permit application requirements. The permit application for appliance demanufacturing must contain the following information to be submitted on Form 542-8005.

1. Facility name.
2. Office address.
3. Location of demanufacturing facility if different from office address.
4. Contact person or official responsible for the operation of the facility.
5. Type, source and expected number or weight of appliances to be handled per year.
6. Schematic site plans of a fixed facility, including the schematic floor plans of any buildings showing where activities will take place and where waste is stored.
7. For mobile operations: schematic plans, or a description and photographs, of the mobile van or trailer.
8. A copy of the EPA Refrigerant Recovery or Recycling Device Acquisition Certification Form 2060-0256.
9. Operation plan: a detailed summary of the activities that will be performed on each type of appliance considered for demanufacturing. This summary must include step-by-step activities of the demanufacturing process.
10. A contingency plan detailing specific procedures to be used in case of equipment breakdown or fire, including methods to be used to remove or dispose of accumulated waste.
11. A copy of the Authorization to Discharge (Stormwater) Permit number, where applicable.
12. A copy of EPA Notification of PCB Activity Form 7710-53 and a return response from EPA. Facilities storing PCB-containing articles longer than 30 days must register with EPA. This form may be obtained by contacting the Fibers and Organics Branch, Office of Pollution Prevention and Toxics, United States Environmental Protection Agency, Ariel Rios Building (7404), 1200 Pennsylvania Avenue NW, Washington, DC 20460.
13. Documentation showing compliance with rule 118.8(455B,455D).
14. A copy of the unique marking system to be applied to each discarded appliance after demanufacturing.
15. Documentation that a permanent facility meets local zoning requirements.

567—118.7(455B,455D) Fixed facilities and mobile operations. The following removal and disposal requirements must be met by both fixed facilities and mobile operations.

118.7(1) Demanufacturing of appliances must take place on an impervious floor (including but not limited to concrete, ceramic tile, or metal, but not wood). Any spills must be contained and picked up with proper equipment and procedures and be disposed of properly.

118.7(2) The point of demanufacturing must be located at least 50 feet from a well and any water of the state.

118.7(3) The facility must be located above the 100-year floodwater elevation.

118.7(4) A permanent facility must meet local zoning requirements.

118.7(5) An applicant must establish a unique marking system, to be submitted with the permit application for department approval, signifying that all refrigerants, PCB-containing articles, and mercury-containing components have been removed. The unique marking system must be a minimum of nine inches by nine inches and must be applied to the appliances after demanufacturing.

567—118.8(455B,455D) Training. Beginning January 1, 2003, at least one owner or employee of an appliance demanufacturing facility must have a training certificate from a department-approved training course. A person who has completed the department-approved training course must be on site at all times when discarded appliances are being demanufactured. The training will, at a minimum, cover the following topics.

1. State and federal regulations for the removal, storage, transportation, and disposal of refrigerant, PCB-containing articles, mercury-containing components, and asbestos from appliances.
2. Record-keeping requirements.
3. Safety precautions for handling appliances and hazardous materials.
4. Spill prevention and cleanup procedures appropriate for appliance demanufacturing.
5. The proper methods of loading and unloading discarded appliances.
6. General demanufacturing procedures.

567—118.9(455B,455D) Refrigerant removal requirements.

118.9(1) All owners of refrigerant recovery and recycling equipment must provide certification to EPA that they have acquired and are using EPA-approved equipment.

118.9(2) Refrigerant in appliances must be recovered to EPA standards using equipment meeting EPA requirements (40 CFR 82.162). Refrigerant may be removed prior to delivery to the appliance demanufacturer if it is removed by an appliance service or repair facility employee certified for the removal of refrigerant.

118.9(3) The removal of refrigerant from refrigeration appliances must take place in an area where the temperature of the surrounding air and of the appliance being demanufactured is 45 degrees Fahrenheit or greater.

118.9(4) Facilities that are not EPA-certified refrigerant reclaimers must ship recovered refrigerant to an EPA-certified reclamation facility or properly dispose of the refrigerant at an EPA-permitted facility. Reclamation may take place on site only if the appliance demanufacturing facility is certified as a reclaimer by the EPA. Any refrigerant that cannot be reclaimed or recycled must be properly disposed of by incineration or other acceptable means.

118.9(5) Compressor oil.

a. Compressor oil from refrigeration unit compressors may be removed during the demanufacturing process, and any oil removed must be stored in accordance with rule 567—119.5(455D,455B).

b. Compressor oil is not hazardous and may be burned in used oil-fired space heaters, provided the heaters have a capacity of 0.5 BTUs (British thermal units) per hour or more.

c. Compressor oil may be sold to a marketer of used oil.

118.9(6) Ammonia gas-operated refrigerators and air conditioners.

a. Ammonia gas must be vented into water.

b. Sodium chromate must be removed from refrigeration equipment containing sodium chromate.

c. Sodium chromate liquid is a hazardous waste and must be disposed of at an EPA-permitted facility.

d. Removal of sodium chromate liquid must take place on an impervious surface. In case of a spill, the spilled liquid and the material used as absorbent must be handled as a hazardous waste and disposed of as a hazardous waste.

e. Sodium chromate must be stored in a DOT-approved container that shows no sign of damage. The container must be labeled with a proper EPA-approved chromium label stating “chromium” or “hazardous waste” as required by 40 CFR 262.32 and 49 CFR 172.304 in both English and the predominant language of any non-English-reading workers.

f. Prior to shipment, sodium chromate must be packaged to prevent leakage, and all containers must be sealed.

g. A person generating sodium chromate waste must maintain records to determine if the person is a conditionally exempt small-quantity generator, small-quantity generator, or large-quantity generator of hazardous waste.

h. Asbestos insulation found within the appliance or on refrigerant lines must be removed. Asbestos must be handled in a manner that complies with Occupational Safety and Health Administration (OSHA) regulations.

i. Asbestos must be moistened and double bagged, in accordance with 567—Chapter 109, prior to disposal at a landfill approved for asbestos disposal for the person’s solid waste comprehensive planning area. A person who needs to dispose of asbestos must contact the landfill and make arrangements for the disposal and any additional packaging and handling procedures.

567—118.10(455B,455D) Mercury-containing component removal and disposal requirements.

118.10(1) All components containing mercury shall be removed from appliances. Precautions shall be taken to prevent breakage of the mercury-containing components and the release of mercury.

118.10(2) All mercury-containing component storage containers must be labeled with the proper EPA-approved mercury label stating “Universal Waste—Mercury Containing Equipment,” “Waste Mercury-Containing Equipment” or “Used Mercury-Containing Equipment” in both English and the predominant language of any non-English-reading workers.

118.10(3) The date when the first mercury-containing component was placed in the container shall be affixed to the container.

118.10(4) Mercury-containing components may be stored for no longer than one year.

118.10(5) Accumulation of mercury-containing components shall not exceed 5,000 kg (11,025 lbs) at any time.

118.10(6) All mercury containers must be sealed prior to shipment.

118.10(7) All components containing mercury must be disposed of at an EPA-approved mercury recycling/recovery facility.

118.10(8) Fluorescent tubes, lamps, bulbs, and similar items must be placed in a container and packaged to prevent breakage for shipment to an EPA-approved recycler or must be processed in a manner that complies with state and federal regulations.

118.10(9) All mercury-containing components must be managed in accordance with 40 CFR 273 and all state and federal regulations.

567—118.11(455B,455D) Capacitor removal requirements.

118.11(1) All capacitors must be removed from discarded appliances unless the appliance manufacturer certifies in writing that no PCBs were used in the manufacture of the appliance.

118.11(2) Capacitors that meet one or more of the following criteria may be disposed of or recycled as solid waste. The capacitor:

a. Is proven to be free of PCBs by an approved laboratory.

b. Is imprinted by the manufacturer with the words “No PCBs” on the body of the capacitor.

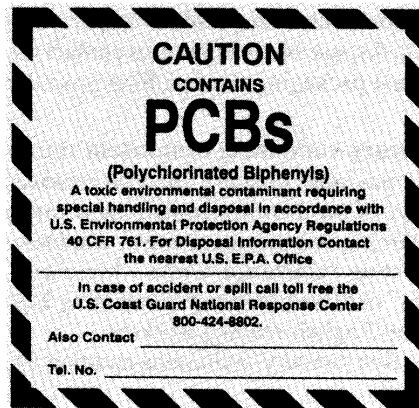
c. Is certified in writing by the manufacturer of the capacitor not to contain PCBs.

d. Does not contain dielectric fluid.

118.11(3) All capacitors not meeting the criteria in subrule 118.11(2) must be disposed of in accordance with subrule 118.11(5).

118.11(4) Containers for storage and disposal of PCB-containing items. PCB-containing items must be stored and transported according to the Toxic Substances Control Act (TSCA) (40 CFR 761) and disposed of at a TSCA-permitted disposal facility. Facilities used for the storage of PCB-containing items designated for disposal must meet the following storage requirements:

- a. Facilities shall register with the US EPA and receive an EPA identification number.
- b. PCB-containing items must be stored in a manner that provides adequate protection from the elements and adequate secondary containment. This storage must take place on an impervious material above the 100-year floodwater elevation.
- c. The point of demanufacturing must be located above the 100-year floodwater elevation.
- d. All capacitors containing or suspected of containing PCBs must be placed in a DOT-approved container that shows no signs of damage. The bottom of the container must be filled to a depth of two inches with absorbent material such as sand, oil-dry, or kitty litter.
- e. All DOT-approved containers must be affixed with the large PCB mark (M_L) as described in 40 CFR 761.45 and shown below.



f. The date when the first PCB-containing item was placed in the container shall be placed on the container.

g. Nonleaking small PCB capacitors may be stored for up to 30 days from the date of removal in an area that does not comply with the requirements in 118.11(4) “a” to “f” provided a notation is placed on the PCB capacitor indicating the date the item was removed from the appliance.

h. PCB-containing items may be stored for no more than 270 days. The storage area must be labeled with the PCB M_L mark. The storage area must be inspected every 30 days, and the inspection must be documented.

i. If a demanufacturer stores more than 45 kg (99.4 lbs) at any one time, the demanufacturer must maintain annual written records and the annual document log as required by 40 CFR 761.180.

118.11(5) Transportation and disposal.

a. Appliance demanufacturers may dispose of PCB capacitors by one of two means. If the facility is a conditionally exempt small quantity generator (CESQG), the demanufacturer may send the properly marked and dated container of capacitors to a regional collection center (RCC) permitted under 567—Chapter 123 for disposal. If the facility is not a CESQG, the capacitors must be manifested and shipped for disposal in accordance with 40 CFR 761.65.

b. Disposal through an RCC. Shipments from a CESQG to an RCC shall be considered equivalent to disposal as municipal solid waste for the purposes of 40 CFR 761.60(b)(2)(iii); capacitors may not be disposed of in a landfill. An RCC may accept PCB capacitors without having to provide a certificate of disposal. The RCC shall provide the appliance demanufacturer with a receipt specifying the name of the RCC, the appliance demanufacturer from which the capacitors were received, the weight or number of capacitors, and the date the capacitors were received. Copies of this document must be retained for three years at both locations. The date that capacitors are received shall be considered the date the capacitors are

determined to be PCB-containing waste for the purposes of 40 CFR 761.65(a)(1). Capacitors may be consolidated in DOT-approved shipping containers for transport for disposal.

c. Disposal through EPA-approved facility for the disposal of PCB waste. The labeled and dated DOT-approved container must be transported by a transporter with a valid EPA ID number, using an EPA Uniform Hazardous Waste Manifest Form. All containers must be sealed prior to shipment. The demanufacturer has one year from the date the first PCB-containing item is placed in the container to properly dispose of the contents by incineration, recycling, or another approved method pursuant to 40 CFR 761.60(b) or 761.60(c). Disposal must be documented and the record kept by the demanufacturer for three years from the date the PCB-containing waste was accepted by the initial transporter.

d. PCB-containing items shall be properly disposed of within one year of removal from the appliance. The generator shall obtain a certificate of disposal within 30 days of the date that disposal of the PCB-containing items was completed at a PCB disposal facility. If a certificate of disposal is not obtained within 30 days, the EPA regional administrator must be notified pursuant to 40 CFR 761.218(d).

567—118.12(455B,455D) Spills.

118.12(1) Any spills from leaking or cracked capacitors must be handled by placing the capacitor and any contaminated rags, clothing, and soil into a container for shipment to an EPA-approved waste disposal facility. Spills of liquid PCBs which occur outside a DOT-approved container must be cleaned and the cleanup verified by sampling as described at 40 CFR 761.130. Detailed records of such cleanups and sampling must be maintained as described at 40 CFR 761.180.

118.12(2) Mercury spill kits (with a mercury absorbent in the kits) must be on hand and used in the event of a mercury spill. Any waste from the cleanup of a mercury spill must be disposed of as a hazardous waste.

118.12(3) In the event a spill results in a hazardous condition, the facility must notify the department of natural resources at (515)281-8694 and the local police department or sheriff's office of the affected county of the occurrence of a hazardous condition as soon as possible, but no later than six hours after the onset or discovery of a spill pursuant to 567—Chapter 131.

567—118.13(455B,455D) Record keeping and reporting.

118.13(1) Annual reports with the information required in subrule 118.13(2) are:

- a. To be sent to the solid waste section of the DNR central office in Des Moines;
- b. Due January 31 each year for the activities of the previous calendar year;
- c. To be submitted on forms provided by the department, which may be submitted electronically when the electronic format is completed; and
- d. To be retained by the permit holder for at least three years.

118.13(2) Annual reports shall contain the following information for the previous calendar year.

a. Number of appliances demanufactured in each of the following categories:

- (1) Refrigerators and freezers.
- (2) Commercial coolers.
- (3) Air-conditioning units.
- (4) Dehumidifiers.
- (5) Gas water heaters.
- (6) Furnaces.
- (7) Clothes washers and clothes dryers.
- (8) Dishwashers.
- (9) Microwave ovens.
- (10) Other items containing mercury, refrigerant or PCB-containing articles.

b. Number of mercury switches removed from appliances.

c. Number of mercury thermocouples removed from appliances.

d. Date the first item was placed in the mercury storage drum that is in use on December 31.

e. Number of fluorescent tubes removed from appliances.

f. Number of sodium chromate-containing appliances shipped to another demanufacturer.

g. Amount of refrigerant removed.

- h.* Number of PCB capacitors removed.
- i.* Number of PCB ballasts removed.
- j.* Date the first PCB-containing item was placed in the storage drum that is in use on December 31.

118.13(3) A permitted appliance demanufacturing facility shall retain the following records on site for a minimum of three years.

- a.* All hazardous waste manifests and bills of lading for shipments of refrigerant, mercury switches, PCB-containing materials and any hazardous waste.
- b.* Receipts for any sodium chromate-containing units that were sent to another facility for processing.
- c.* Documentation of destruction or receipt from a regional collection center for all PCB materials shipped.
- d.* Documentation of inspections of the PCB storage area as required by paragraph 118.11(4)“*h.*”
- e.* Annual written records and annual document log if required by paragraph 118.11(4)“*i.*”
- f.* Copy of the annual report as required in subrule 118.13(1).

567—118.14(455B,455D) Appliance demanufacturing facility closure requirements. An appliance demanufacturing facility shall submit to the department central office and department field office with jurisdiction over the appliance demanufacturing facility written notice of intent to permanently close the facility at least 90 days before closure. Closure shall not be official until the department field office has provided written certification of the completion of the following activities:

- 1. Removal of all appliances that have not been demanufactured.
- 2. Proper disposal of all refrigerant, PCBs, mercury and all hazardous materials.
- 3. Submission of an annual report covering January through the last disposal of hazardous materials, PCBs and refrigerant.

567—118.15(455B,455D) Shredding of appliances.

118.15(1) Facilities shredding demanufactured appliances shall sample the fluff from the shredding of demanufactured appliances at least quarterly and analyze the fluff according to Test Methods for Evaluation of Solid Waste, Physical-Chemical Methods SW 846, US EPA, Third Edition 1986, for the presence of PCBs, and according to the toxicity characteristic leaching procedure (TCLP) for heavy metals. The waste shall be sampled once a day for seven consecutive working days to make a composite sample. If the concentrations of heavy metals do not exceed concentrations listed in 40 CFR 261.24, the fluff may be landfilled in Iowa. Results must be retained on site for a minimum of three years and be submitted to the department within 30 days of the end of each quarter.

118.15(2) Fluff from the shredding of demanufactured appliances may be sampled and tested by the department at any time.

118.15(3) A person or facility engaged in demanufacturing in the state may not shred, crush, or bale any appliances that have not been demanufactured. A person or facility located in Iowa that does not engage in demanufacturing but accepts appliances from demanufacturers for recycling or disposal may shred, crush, or bale only appliances that have been demanufactured in accordance with federal regulations and the laws of the state from which the appliances are received.

567—118.16(455B,455D) Appliance demanufacturing facility financial assurance requirements. Unless a facility is exempt from this rule pursuant to subrule 118.16(1), permitted appliance demanufacturing facilities must obtain and submit a financial assurance instrument to the department for storage of appliances in accordance with this rule. The financial assurance instrument shall provide monetary funds to properly dispose of any appliances, refrigerant, PCBs, mercury and any other hazardous materials associated with appliance demanufacturing that may remain at a facility due to the owner’s or operator’s failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

118.16(1) Exemptions. An appliance demanufacturing facility owned and operated in conjunction with a sanitary landfill already required to have financial assurance shall not be required to obtain additional financial assurance in compliance with this chapter.

118.16(2) No permit without financial assurance. The department shall not issue or renew a permit to an owner or operator of an appliance demanufacturing facility until a financial assurance instrument has been submitted to and approved by the department.

118.16(3) Proof of compliance. Proof of the establishment of the financial assurance instrument and compliance with this rule, including a current closure cost estimate, shall be submitted to the department by July 1, 2008, or at the time of application for a permit for a new appliance demanufacturing facility. The owner or operator must provide continuous coverage for closure and submit proof of compliance, including an updated closure cost estimate, with each permit renewal thereafter until released from this requirement by the department.

118.16(4) Use of one financial assurance instrument for multiple permitted activities. Appliance demanufacturing facilities required to maintain financial assurance pursuant to any other provisions of 567—Chapters 100 to 123 may satisfy the requirements of this rule by the use of one financial assurance instrument if the permit holder ensures that the instrument provides financial assurance for an amount at least equal to the current cost estimates for closure of all sanitary disposal project activities covered.

118.16(5) The estimate submitted to the department must be certified by a professional engineer and account for at least the following factors determined by the department to be minimal necessary costs for closure pursuant to rule 118.14(455B,455D):

a. Third-party labor and transportation costs and disposal fees to properly manage any appliances, refrigerant, PCBs, mercury and any other hazardous materials associated with appliance demanufacturing equal to the maximum storage capacity of the facility. If materials are temporarily stored on site in transportation vehicles, waste receptacles or drums, then this estimate shall include disposal costs for the maximum number of transportation vehicles, waste receptacles and drums that can be on site at any one time.

b. The cost of hiring a third party to properly clean and decontaminate all equipment, storage facilities, holding areas and drainage collection systems. This estimate shall include the cost of properly disposing of a one-week volume of washwater from the facility. If the facility utilizes washwater storage tanks, then this estimate shall assume that the storage tanks are full and add that volume to the one-week volume.

c. The costs for maintaining financial assurance pursuant to any other provisions of 567—Chapters 100 to 123, if any, in accordance with subrule 118.16(4).

118.16(6) Acceptable financial assurance instruments. The financial assurance instrument shall be established in an amount equal to the cost estimate prepared in accordance with subrule 118.16(5) and shall not be canceled, revoked, disbursed, released, or allowed to terminate without the approval of the department. Financial assurance may be provided by cash in the form of a secured trust fund or local government dedicated fund, surety bond, letter of credit, or corporate or local government guarantee as follows:

a. Secured trust fund. The owner or operator of an appliance demanufacturing facility or an entity serving as a guarantor may demonstrate financial assurance for closure by establishing a secured trust fund that conforms to the requirements of this paragraph.

(1) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The fund shall be restricted for the sole purpose of funding closure activities at the facility, and a copy of the trust agreement must be submitted to the department and placed in the facility's official files.

(2) A secured trust fund shall name the department of natural resources as the entity authorized to draw funds from the trust, subject to proper notification to the trust officer of failure by the permittee to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) Moneys in the fund shall not be assigned for the benefit of creditors with the exception of the state.

(4) Moneys in the fund shall not be used to pay any final judgment against a permit holder arising out of the ownership or operation of the site during its active life or after closure.

(5) The owner or operator or another person authorized to conduct closure activities may request reimbursement from the trustee for closure expenditures as they are incurred. Requests for reimbursement shall be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining

costs of closure and if documentation of the justification for reimbursement has been submitted to the department for prior approval.

(6) If the balance of the trust fund exceeds the current cost estimate for closure at any time, the owner or operator may request withdrawal of the excess funds from the trustee so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

b. Local government dedicated fund. The owner or operator of a publicly owned appliance demanufacturing facility or a local government serving as a guarantor may demonstrate financial assurance for closure by establishing a dedicated fund that conforms to the requirements of this paragraph.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, resolution or order as a restricted fund to pay for closure costs arising from the operation of the facility.

(2) A copy of the document establishing the dedicated fund must be submitted to the department and placed in the facility's official files.

(3) If the balance of the dedicated fund exceeds the current cost estimate for closure at any time, the owner or operator may withdraw excess funds so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

c. Surety bond. A surety bond must be written by a company authorized by the commissioner of insurance to do business in the state, and the surety bond shall comply with the following:

(1) The bond shall be in a form approved by the commissioner of insurance and shall be payable to the department of natural resources.

(2) The bond shall be specific to a particular facility for the purpose of properly disposing of any appliances, refrigerant, PCBs, mercury and any other hazardous materials associated with appliance demanufacturing that may remain on site due to the owner's or operator's failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) The owner or operator shall provide the department with a statement from the surety with each permit application renewal, noting that the bond is paid and current for the permit period for which the owner or operator has applied for renewal.

d. Letter of credit. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(1) The owner or operator must submit to the department a copy of the letter of credit and place a copy in the facility's official files.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the facility and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the facility's files.

(3) The letter of credit must be irrevocable and must be issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 90 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into a secured trust fund that meets the requirements of paragraph 118.16(6) "a." If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the secured trust fund established by the owner or operator. The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

e. Corporate guarantee. An owner or operator may meet the requirements of this rule by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a "substantial business relationship" with the owner or operator.

(1) The terms of the written guarantee must provide that within 30 days of the owner's or operator's failure to perform closure of a facility covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);
2. Establish a fully funded secured trust fund as specified in paragraph 118.16(6) "a" in the name of the owner or operator (payment guarantee); or
3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following three conditions:

1. A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor's or Aaa, Aa, A, or Baa as issued by Moody's; or
2. A ratio of less than 1.5 comparing total liabilities to net worth; or
3. A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities.

(3) The tangible net worth of the guarantor must be greater than the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(4) The guarantor must have assets amounting to at least the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(5) Record-keeping and reporting requirements. The guarantor must submit the following records to the department and place a copy in the facility's official files:

1. A copy of the written guarantee between the owner or operator and the guarantor.
2. A letter signed by a certified public accountant and based upon a certified audit that:
 - Lists all the current cost estimates covered by a guarantee including, but not limited to, cost estimates required by subrule 118.16(5); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40 CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and
 - Provides evidence demonstrating that the guarantor meets the conditions of subparagraphs 118.16(6) "e"(2), (3) and (4).

3. A copy of the independent certified public accountant's unqualified opinion of the guarantor's financial statements for the latest completed fiscal year. In order for the guarantor to be eligible to use the guarantee, the guarantor's financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this instrument. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the corporate guarantee, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

f. Local government guarantee. An owner or operator may demonstrate financial assurance for closure by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E.

(1) The terms of the written guarantee must provide that within 30 days of the owner's or operator's failure to perform closure of a facility covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);
2. Establish a fully funded secured trust fund as specified in paragraph 118.16(6) "a" in the name of the owner or operator (payment guarantee); or
3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following requirements:

1. If the guarantor has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the guarantor must have a current rating of Aaa, Aa, A, or

Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard & Poor's, on all such general obligation bonds; or

2. The guarantor must satisfy each of the following financial ratios based on the guarantor's most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

(3) The guarantor must prepare its financial statements in conformity with generally accepted accounting principles or other comprehensive basis of accounting and have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa.

(4) A guarantor is not eligible to assure its obligations if:

1. The guarantor is currently in default on any outstanding general obligation bonds; or

2. The guarantor has any outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard & Poor's; or

3. The guarantor operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or

4. The guarantor receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement. A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism; or

5. The closure costs to be assured are greater than 43 percent of the guarantor's total annual revenue.

(5) The local government guarantor must include disclosure of the closure costs assured through the guarantee in its next annual audit report prior to the initial receipt of appliances at the facility or prior to cancellation of an alternative financial assurance instrument, whichever is later. For the first year the guarantee is used to assure costs at a particular facility, the reference may instead be placed in the guarantor's official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(6) The local government owner or operator must submit to the department the following items:

1. A copy of the written guarantee between the owner or operator and the local government serving as guarantor for the closure costs at the facility.

2. A copy of the guarantor's most recent annual financial audit report indicating compliance with the financial ratios required by numbered paragraph 118.16(6) "f"(2)"2," if applicable, and the requirements of subparagraphs 118.16(6) "f"(3) and (4).

3. A letter signed by the local government's chief financial officer that lists all the current cost estimates covered by the guarantor, as described in subrule 118.16(5); and that provides evidence and certifies that the local government meets the conditions of subparagraphs 118.16(6) "f"(2), (3), (4) and (5).

118.16(7) Financial assurance cancellation and permit suspension.

a. A financial assurance instrument may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance prior to cancellation, as specified in this rule, or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

b. A financial assurance instrument shall be continuous in nature until canceled by the financial assurance provider or until the department gives written notification to the owner, operator, and financial assurance provider that the covered site has been properly closed. The financial assurance provider shall give at least 90 days' notice in writing to the owner or operator and the department in the event of any intent to cancel the instrument.

c. Within 60 days of receipt of a written notice of cancellation of financial assurance by the financial assurance provider, the owner or operator must provide the department an alternative financial assurance instrument. If a means of continued financial assurance is not provided within that 60 days, the department shall suspend the permit.

d. The owner or operator shall perform proper closure within 30 days of the permit suspension. For the purpose of this rule, “proper closure” means completion of all items pursuant to rule 118.14(455B,455D) and subrule 118.16(5).

e. If the owner or operator does not properly close the site within the 30-day period allowed, the department shall file a claim with the financial assurance instrument provider to collect the amount of funds necessary to properly close the site.

f. An owner or operator who elects to terminate a permitted activity, whose renewal application has been denied, or whose permit has been suspended or revoked for cause must submit within 30 days of the termination of the permit a schedule for completing proper closure of the terminated activity. Closure completion cannot exceed 60 days from the date of termination of the permit.

g. The director may also request payment from any financial assurance provider for the purpose of completing closure when the following circumstances exist:

(1) The owner or operator is more than 15 days late in providing a schedule for closure or for meeting any date in the schedule for closure.

(2) The owner or operator declares an economic inability to comply with this rule, either by sending written notification to the director or through an action such as, but not limited to, filing for bankruptcy.

These rules are intended to implement Iowa Code sections 455B.304 and 455D.6(6).

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¹ At its meeting held January 8, 2002, the Administrative Rules Review Committee voted to delay the effective date of Chapter 118 70 days.

CHAPTER 119
USED OIL AND USED OIL FILTERS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—119.1(455D,455B) Authority, purpose, and applicability.

119.1(1) Authority. Pursuant to Iowa Code sections 455D.7(1), 455D.6(6), and 455B.304, the environmental protection commission is given the authority to adopt rules regulating the disposal, collection, recycling and reuse of used oil and used oil filters.

119.1(2) Purpose. The purpose of these rules is to protect the public health and the environment by regulating the disposal and collection of used oil and used oil filters and to promote the reuse and recycling of used oil and used oil filters.

119.1(3) Applicability. The provisions of this chapter apply to oil retailers, oil filter retailers, sanitary disposal project permittees, persons involved in the collection of used oil, and persons involved in the generation or collection of used oil filters.

567—119.2(455D,455B) Definitions. The following definitions apply to the provisions of this chapter:

“Contaminated” means used oil mixed with hazardous waste as defined by the resource conservation and recovery Act or with incompatible wastes including, but not limited to: antifreeze, solvents, paints, pesticides, or household hazardous materials. Minimal amounts of vehicle fuel shall not be considered an incompatible waste.

“Customer” means any individual who purchases oil or oil filters or generates used oil or used oil filters for personal or family purposes, including a farmer or a farm household.

“Department” means the department of natural resources.

“Retailer” means a person offering for sale or selling a petroleum-based or synthetic oil or oil filter to the ultimate consumer or user of the product, as an over-the-counter product or whereby the consumer is charged separately for the oil or oil filter when coupled with a service.

“Tank” means a closable stationary or mobile device designed to contain an accumulation of used oil and constructed of nonearthen materials (e.g., concrete, steel, plastic) that provide structural support.

“Used oil” means any petroleum-based or synthetic oil which through its use, storage, or handling has become unsuitable for its original purpose due to the presence of chemical or physical impurities. Used oil includes, but is not limited to, the following:

1. Spent lubricating fluids which have been removed from an engine crankcase, transmission, gearbox, or differential of an automobile, bus, truck, vessel, plane, heavy equipment, or machinery powered by an internal combustion engine.
2. Spent industrial oils, including compressor, turbine, bearing, hydraulic, metalworking, electrical, and refrigerator oils.

Used oil does not include oil which has been contaminated or contains PCBs of 5ppm or greater.

“Used oil collection site” means any commercial, municipal, or nonprofit establishment or operation which has a used oil collection tank on the premises, and accepts used oil for temporary storage prior to the recycling of that which is collected.

“Used oil collector” means any sanitary landfill operator, sanitary disposal project operator, oil retailer, or other individual who operates a used oil collection site.

“Used oil filter” means a filter that removes impurities from the oil used to lubricate an internal combustion engine and has been used for its intended purpose.

“Used oil filter recycling” means the preparation of used oil filters for steel recovery.

“Used oil recycling” means the preparation of used oil for reuse as a petroleum product by rerefining, reprocessing, reclaiming, or other means or to use used oil as a substitute for a petroleum product made from new oil, provided that the preparation or use is operationally safe, environmentally sound, and complies with all federal and state laws.

567—119.3(455D,455B) Prohibited disposal.

119.3(1) Used oil shall not be accepted for final disposal at any sanitary landfill. However, a sanitary landfill or sanitary disposal project, as defined in Iowa Code section 455B.301, may accept used oil for temporary storage or collection if the ultimate disposition of the oil is for recycling or reuse. All necessary permits or permit conditions must be obtained prior to the storage or collection of used oil at these landfills and projects.

119.3(2) A business that generates used oil filters or accepts used oil filters from a person shall not dispose of the used oil filters in a sanitary landfill and shall source separate and recycle the used oil filters.

567—119.4(455D,455B) Operational requirements for acceptance of used oil. Any person accepting used oil from customers shall comply with the following requirements:

119.4(1) Used oil shall be accepted which is contained in a closed, unbreakable, preferably reusable, container.

119.4(2) Used oil collectors shall provide supervision of the collection process to minimize the risk of spills and to prevent customers from depositing contaminated used oil into the collection tank. However, this does not preclude designating unsupervised drop-off sites for used oil as long as the following conditions are met:

- a.* Only sealed containers of five gallons or less shall be accepted.
- b.* The designated drop-off site must be protected from the elements.
- c.* Customers shall drop off their used oil in containers at the designated site and are not permitted to deposit their used oil into a collection tank.
- d.* The designated site must be located on an impervious surface engineered to contain potential spills.

119.4(3) During noncollection hours, the tank must be secured to prevent the contamination of the collected used oil.

119.4(4) A sign shall be placed on or near the used oil collection tank which includes the statement: This tank is for used oil collection only. The depositing of other materials is prohibited.

119.4(5) Collectors of used oil shall ensure that the ultimate disposition of used oil collected is for recycling and reuse.

119.4(6) Used oil found to be contaminated shall be managed as a hazardous waste. There is no obligation to accept contaminated oil.

119.4(7) Used oil collectors shall comply with Iowa Code section 455B.386 when actual or imminent oil spills pose a threat to the public health or the environment.

119.4(8) Absorbent material shall be available at the site for use by the operator to control spillage or discharge of used oil.

567—119.5(455D,455B) Operational requirements for acceptance of used oil filters. Any person accepting used oil filters from customers shall comply with the following requirements:

119.5(1) The used oil filters shall be collected, stored and transported in a container designed and maintained to prevent the spillage or discharge of used oil from the filters.

119.5(2) The collection container shall be located on an impervious surface engineered to contain spills.

119.5(3) The collection container shall be protected from inclement weather.

119.5(4) The collection container shall be clearly labeled “used oil filters.”

119.5(5) Used oil filter collectors shall comply with Iowa Code section 455B.386 when actual or imminent oil spills pose a threat to the public health or the environment.

119.5(6) Absorbent material shall be available at the site for use by the operator to control spillage or discharge of used oil from the used oil filters.

567—119.6(455D,455B) Oil retailer requirements. In addition to the requirements set forth in rules 567—119.4(455D,455B) and 567—119.5(455D,455B) relating to used oil and used oil filter collection, used oil retailers also shall comply with the following:

119.6(1) A durable, legible sign at least 8½" by 11" in size shall be placed near the point of sale which contains the following:

- a. Language informing the customer that it is unlawful to dispose of used oil at a sanitary landfill, and that the customer should return used oil to used oil collection sites for recycling and reuse;
- b. The language "RECYCLE USED OIL" in bold lettering;
- c. A list of the benefits from recycling used oil including, but not limited to, "conserves energy, reuses limited resources, and protects Iowa's drinking water";
- d. The language "used oil is a household hazardous material" and the household hazardous materials program symbol, at least 2 inches in length, as shown below;



- e. The warning that the disposal of used oil in a landfill or its deposit or discharge into any state waterway is unlawful;
- f. The name, address and location of at least one used oil collection site located within the county in which the retailer is located. If there is more than one used oil collection site located in the county, then the nearest collection site shall be listed on the posted sign.

119.6(2) Retailers may obtain the required signs upon request from the department. Retailers choosing to develop and post their own signs must obtain a variance from the departmental rules. Signs must be at least 8½" by 11" in size and contain the information stipulated above. To request a variance, retailers should forward to the department for review the sign they wish to substitute for the departmental sign.

119.6(3) Retailers are not required to collect used oil generated by commercial or municipal establishments.

119.6(4) Used oil shall be accepted during normal business hours.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—119.7(455D,455B) Oil filter retailer requirements. In addition to the requirements set forth in rules 567—119.4(455D,455B) to 567—119.6(455D,455B) relating to used oil and used oil filter collection, oil filter retailers also shall comply with the following:

119.7(1) A durable, legible sign at least 8½" by 11" in size shall be placed near the point of sale which contains the following:

- a. The language "RECYCLE USED OIL FILTERS" in bold lettering;
- b. A list of the benefits from recycling used oil filters including, but not limited to, "conserves energy, reuses limited resources, and protects Iowa's drinking water";
- c. The language "used oil filters are a household hazardous material" and the household hazardous materials program symbol, at least 2 inches in length, as shown below;



- d. The name, address and location of at least one used oil filter collection site located within the county in which the retailer is located. If there is more than one used oil filter collection site located in the county, then the nearest collection site shall be listed on the posted sign.

119.7(2) Retailers who choose to collect used oil filters shall accept used oil filters generated by residential households or farmers, but are not required to collect used oil filters generated by commercial or municipal establishments.

119.7(3) Used oil filters shall be accepted during normal business hours.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—119.8(455D,455B) Tanks.

119.8(1) *Aboveground.* In addition to the requirements imposed by the office of the state fire marshal, the following standards are applicable to aboveground used oil collection tanks:

a. The tank shall be of sufficient size to handle the projected quantities of used oil to be returned to this specific collection site.

b. The tank shall be designed and maintained to prevent the spillage or discharge of used oil. Tanks must be set upon an impermeable surface engineered to contain potential spills.

c. Absorbent material shall be available at the tank site for use by the operator to control used oil spillage or discharge.

d. The tank shall have a level gauge or some other adequate means for checking the oil level within the tank.

e. The tank shall be constructed in accordance with American Petroleum Institute specifications and standards.

119.8(2) *Underground.* Underground storage tanks used to collect or store used oil shall comply with the standards in part 8 of division IV of Iowa Code chapter 455B, entitled “Underground Storage Tanks,” and the promulgated rules, Iowa Administrative Code, 567—Chapters 135 and 136.

567—119.9(455D,455B) Locating collection sites. If the retailer is unaware of any locations within the county where used oil or used oil filters are being accepted from customers, the retailer shall contact the department to determine if a collection site is located in the county. If no collection site is currently available in the county, the retailer shall accept used oil and used oil filters from customers.

These rules are intended to implement Iowa Code sections 455D.6(6) and 455D.13 and chapter 455B, division IV, part 1.

[Filed 4/26/90, Notice 2/7/90—published 5/16/90, effective 6/20/90]

[Filed 7/30/93, Notice 4/14/93—published 8/18/93, effective 9/22/93]

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CHAPTER 120
LANDFARMING OF PETROLEUM CONTAMINATED SOIL
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—120.1(455B) Purpose. The purpose of this chapter is to establish rules for the safe and effective remediation and disposal of petroleum contaminated soil (PCS) through landfarming. These rules are intended to satisfy the requirements of Iowa Code sections 455B.301A, 455B.304 and 455B.383.

567—120.2(455B) Applicability and compliance.

120.2(1) These rules apply to the landfarming of soils contaminated with biodegradable petroleum products including, but not limited to, gasoline, diesel fuel, kerosene, jet fuel, motor oil, hydraulic fluid, or some combination thereof. All PCS landfarming activities in which 3 or more cubic yards of PCS are excavated shall comply with this chapter. Uncontaminated soil that is excavated during the removal of the PCS shall not be counted toward the 3-cubic-yard applicability threshold.

120.2(2) These rules do not apply to PCS that is being remediated or disposed of at a sanitary landfill. For rules governing the remediation and disposal of PCS at a sanitary landfill, see 567—Chapter 109.

120.2(3) The issuance of a landfarm permit by the department in no way relieves the generator or permit holder of the responsibility of complying with all other local, state, or federal statutes, ordinances, and rules and other applicable requirements.

120.2(4) These rules do not apply to hazardous waste.
[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.3(455B) Definitions. The definitions set out in Iowa Code section 455B.301 shall be considered to be incorporated by reference in these rules. For the purposes of this chapter, the definitions found in 567—Chapter 100 shall apply.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.4(455B) Landfarming applicator permits.

120.4(1) *Permit required.* PCS shall not be landfarmed without a landfarm applicator permit from the department.

120.4(2) *Landfarm applicator permit.* Upon issuance of a landfarm applicator permit, the permit holder is authorized to apply PCS to the land to create one or more landfarms. This permit requires that landfarms be used for only one application of a particular source and type of PCS. This permit requires that no other PCS be applied within 15 feet of the area of land used as a landfarm until the landfarm is closed pursuant to rule 567—120.12(455B).

120.4(3) *Construction and operation.* Landfarms shall be constructed and operated according to these rules, any plans and specifications approved by the department, and the conditions of the permit. Any approved plans and specifications shall constitute a condition of the permit.

120.4(4) *Transfer of title and permit.* If title to a landfarm applicator permit is transferred to a third party, then the department shall transfer the permit within 60 days if the department has determined that the following requirements have been met:

a. The title transferee has applied in writing to the department within 30 days of the transfer of title to request a transfer of the permit.

b. The permitted applicator and title transferee are in compliance with Iowa Code chapter 455B, this chapter and the conditions of the permit.

120.4(5) *Permit conditions.* A permit may be issued with conditions, specified in writing by the department, that are necessary to ensure the landfarm can be constructed and operated in a safe and effective manner, and in compliance with Iowa Code chapter 455B and this chapter.

120.4(6) *Effect of revocation.* If a landfarm applicator permit held by any public or private agency is revoked by the department, then no new landfarm applicator permit shall be issued to that agency for a minimum of one year from the date the facility was brought into full compliance with the revocation order.

Such revocation shall not prohibit the issuance of a permit for the same landfarm project to another landfarm application permit holder.

120.4(7) *Inspection of site and operation.* By obtaining an applicator permit, the permitted entity agrees that the department may inspect the facility and its operations at reasonable times to determine if the landfarm is in compliance with this chapter and the permit requirements.

120.4(8) *Duration of permits.* Landfarm applicator permits shall be issued and may be renewed for a three-year term.

120.4(9) *Request for permit renewal.* A request for permit renewal shall be in writing and filed at least 90 days before the expiration of the current permit. If the renewal applicant is found not to be in compliance with this chapter or the permit requirements, then the applicant shall achieve compliance or be placed on a compliance schedule approved by the department before the permit may be renewed.

120.4(10) *Request for permit modification.* Requests for permit modifications must be submitted in writing to the department with supporting documentation and materials.

120.4(11) *Factors in permit issuance decisions.* The department may request that additional information be submitted for review to make a permit issuance decision. The department may review and inspect the facility, its agents and operators, and compliance history. The department may review whether or not a good-faith effort to maintain compliance and protect human health and the environment is being made, and whether a compliance schedule is being followed. The department may issue a permit on a trial basis.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.5(455B) Landfarm permit application requirements.

120.5(1) *Landfarm applicator permits.* To apply for a landfarm applicator permit, the applicant shall submit the following information to the department:

- a. The name, address, and telephone number of:
 - (1) Agency applying for the landfarm applicator permit.
 - (2) Owner(s) of the agency.
 - (3) Individual responsible for record keeping and reporting.
 - (4) An emergency contact person.
- b. A plan of operations that complies with the requirements of rules 567—120.9(455B) and 567—120.11(455B).
- c. An emergency response and remedial action plan (ERRAP) pursuant to rule 567—120.10(455B).
- d. A signed and dated statement from the owner(s) of the agency which reads: “I guarantee that this agency will comply with 567—Chapter 120.”

120.5(2) *Incomplete applications.* If the department finds the permit application information to be incomplete, the department shall notify the applicant in writing of that fact and of the specific deficiencies. If the deficiencies are not corrected within 30 days, the department shall return the application materials to the applicant. The applicant may reapply without prejudice.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.6(455B) PCS analysis and characterization.

120.6(1) *Department-supervised emergency cleanups.* PCS originating from the cleanup of a spill or expedited overexcavation at a tank closure or upgrade under department jurisdiction shall be characterized and tested as follows before being landfarmed. Such PCS may be landfarmed prior to chemical testing, pursuant to the application rate in subrule 120.9(6) and reporting requirements of rule 567—120.11(455B), if permission is obtained from department emergency response personnel or the department field office with jurisdiction over the landfarm site.

a. *Source identification.* The name and address of the contaminated site from which the PCS originated and the spill or underground storage tank (UST) registration number shall be recorded.

b. *Type classification.* The PCS shall be classified by type according to the petroleum product’s trade name (e.g., gasoline, diesel fuel) or according to the trade names if there is a mixture of petroleum products.

c. Chemical testing. A sample of the PCS shall be obtained from the emergency cleanup site and tested pursuant to paragraph 120.6(2) “c.”

120.6(2) Other cleanups. PCS not originating from a department-supervised emergency cleanup pursuant to subrule 120.6(1) shall be characterized and tested as follows before being landfarmed. PCS originating from a cleanup pursuant to 567—Chapter 135 may utilize those test results as applicable.

a. Source identification. The name and address of the contaminated site from which the PCS originated, the UST registration number, and the leaking underground storage tank (LUST) number shall be recorded, if applicable.

b. Type classification. The PCS shall be classified by type according to the petroleum product’s trade name (e.g., gasoline, diesel fuel) or according to the trade names if there is a mixture of petroleum products.

c. Chemical testing. The following analyses shall be performed. Samples shall be acquired, stored, handled, tested, and reported in accordance with the required methodology and accepted scientific procedures.

(1) BTEX testing. The PCS shall be tested for benzene, toluene, ethylbenzene, and xylene (BTEX). A laboratory certified for UST petroleum analyses pursuant to 567—Chapter 83 shall test the samples. The analysis shall utilize the most recent version of Method OA-1 (GCMS), “Method for Determination of Volatile Petroleum Hydrocarbons (Gasoline),” University of Iowa Hygienic Laboratory.

(2) TEH-diesel testing. The PCS shall be tested for total extractable hydrocarbons (TEH-diesel). A laboratory certified for UST petroleum analyses pursuant to 567—Chapter 83 shall test the samples. The analysis shall utilize the most recent version of Method OA-2, “Extractable Petroleum Products (and Relatively Low Volatility Organic Compounds),” University of Iowa Hygienic Laboratory.

(3) MTBE testing. The PCS shall be tested for methyl tertiary-butyl ether (MTBE) unless prior analysis at a site, pursuant to rule 567—135.15(455B), has shown that MTBE is not present in soil or groundwater. A laboratory certified for UST petroleum analyses pursuant to 567—Chapter 83 shall test the samples. The analysis shall utilize one of the following methods:

1. The most recent version of Method OA-1 (GCMS), “Method for Determination of Volatile Petroleum Hydrocarbons (Gasoline),” University of Iowa Hygienic Laboratory.

2. U.S. Environmental Protection Agency (EPA) Method 8260B, SW-846, “Test Methods for Evaluating Solid Waste,” Third Edition.

(4) Total metals testing. If the history of the petroleum contaminated site is known to have included solvents, batteries, leaded fuel, waste oil, or a gas station in operation prior to 1985, then the PCS shall be tested for total Resource Conservation and Recovery Act (RCRA) metals.

120.6(3) Tar balls. PCS that has the potential to produce tar balls shall not be landfarmed. Such PCS may be disposed of in a sanitary landfill pursuant to 567—Chapter 109.

120.6(4) Other tests. The department may require testing of the PCS for other chemicals of concern.
[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.7(455B) Site exploration and suitability requirements for landfarms. All landfarms shall meet the following site exploration and suitability requirements.

120.7(1) Previous use. If a site is to be used as a landfarm, then the landfarm applicator shall obtain written confirmation from the site owner of one of the following requirements:

a. That any other landfarm created in the past three years within 15 feet of the proposed landfarm plot has been closed pursuant to rule 567—120.12(455B).

b. That no area within 15 feet of the proposed landfarm plot has been used as a landfarm in the past three years.

120.7(2) Wells. PCS shall not be landfarmed or stored within 500 feet of a well that is being used or could be used for human or livestock consumption. The department may also exempt from this requirement extraction wells utilized as part of a remediation system. PCS shall not be landfarmed or stored within 500 feet of an agricultural drainage well.

120.7(3) Sinkholes. PCS shall not be landfarmed or stored within 500 feet of a sinkhole.

120.7(4) *Surface waters of the state.* PCS shall not be landfarmed or stored within 200 feet of a stream, lake, pond, wetland, or other surface water of the state. The department may waive the setback requirement for surface waters that have been constructed for pollution control purposes.

120.7(5) *Tile lines.* PCS shall not be landfarmed or stored within 200 feet of a tile line surface intake.

120.7(6) *Housing and sensitive populations.* PCS shall not be landfarmed or stored within 200 feet of an occupied residence, recreational area, child care facility, educational facility, or health care facility.

120.7(7) *Flood plains.* PCS shall not be landfarmed or stored within the 100-year flood plain.

120.7(8) *Slope.* PCS shall not be landfarmed or stored on slopes greater than 5 percent. This requirement may be satisfied by utilizing United States Department of Agriculture (USDA) soil maps.

120.7(9) *Soil properties for landfarm plot.* All soils in the landfarm plot of the landfarm shall comply with the following requirements:

a. USDA textural soil classification. Soils in the landfarm plot of landfarms shall be clay, sandy clay, sandy clay loam, sandy loam, silty clay, silt clay loam, clay loam, loam, or silt loam as classified by the USDA Textural Classification Chart for soils.

b. Stones and debris. Soils in the landfarm plot shall be free of stones and debris larger than 4 inches in diameter.

c. Soil pH. Soils in the landfarm plot shall have a pH greater than or equal to 6 and less than or equal to 9.

d. Bedrock separation. The landfarm plot shall have a minimum of 6 feet of soil over bedrock.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.8(455B) Landfarm design requirements.

120.8(1) *Requirements for all landfarms.* All landfarms shall comply with the following design requirements:

a. PCS storage areas. Storage areas for PCS shall be constructed in compliance with the following requirements:

- (1) Over an impervious surface (e.g., tarp, concrete pad, plastic sheeting).
- (2) Under a roof or tarp to minimize the infiltration of precipitation.
- (3) In an area with minimal potential for stormwater run-on.

b. Flagging. The landfarm plot(s) upon which PCS is land applied shall be flagged pursuant to subrule 120.9(7).

120.8(2) *Additional requirements for multiuse landfarms.* Rescinded IAB 4/19/23, effective 5/24/23.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.9(455B) Landfarm operating requirements. All landfarms shall comply with the following operating requirements:

120.9(1) *Standard PCS.* Only standard PCS may be land applied or stored at a landfarm without a permit amendment from the department. A permit amendment from the department, pursuant to subrule 120.4(10), shall be obtained for each particular source and type of nonstandard PCS before that PCS may be land applied or stored at a landfarm. The permit amendment application shall include a justification of how the PCS can be safely and effectively remediated by landfarming.

120.9(2) *Saturated or slurry PCS.* PCS in a saturated or slurry condition shall not be applied to the land or stored at a landfarm. PCS in such a condition shall be bulked with other biodegradable materials (e.g., compost, mulch) until it is no longer saturated or in a slurry before it is applied to the land or stored at a landfarm.

120.9(3) *PCS delivery and storage.* Only PCS that is from an emergency cleanup may be delivered during the non-landfarm season. PCS delivered during non-landfarm season may be stored as follows until the conditions of subrule 120.9(4) are satisfied or within the first seven days of landfarm season, whichever is shorter. PCS that cannot immediately be applied to the land at the landfarm during landfarm season may be stored at the landfarm as follows.

a. Seven days or less. PCS may be stored up to seven days in compliance with the following requirements:

- (1) Over an impervious surface (e.g., tarp, concrete pad, plastic sheeting).

- (2) Under a roof or tarp to minimize the infiltration of precipitation.
- (3) In an area with minimal potential for stormwater run-on.
- b. Extended storage time.* No PCS shall be stored longer than seven days during landfarm season without written permission from the department field office that has jurisdiction over the landfarm.

120.9(4) PCS application weather and landfarm season.

a. PCS shall only be applied to the land during non-landfarm season if the PCS must be applied to the land as part of an emergency cleanup supervised by the department pursuant to subrule 120.6(1), or all of the following conditions exist:

- (1) The landfarm plot is free of snow.
- (2) The slope of the landfarm plot is less than 3 percent.
- (3) The PCS is incorporated into the soil as soon as site conditions allow.
- b.* PCS shall not be applied to the land during precipitation.

120.9(5) One application, source and type of PCS per plot. One application of a particular source and type of PCS may be applied to a landfarm plot. A landfarm may only apply a subsequent application of PCS to a previously utilized landfarm plot if such application is in compliance with the following:

a. The plot has been tested pursuant to subparagraphs 120.6(2) “c”(1), (2), and (3), and the results demonstrate that petroleum constituent concentrations are less than 0.54 mg/kg for benzene, 42 mg/kg for toluene, 15 mg/kg for ethylbenzene, 3800 mg/kg for TEH-diesel, and 0.02 mg/kg for MTBE.

b. A subsequent application of a particular source and type of PCS may not be applied within 15 feet of an area used as a single-use landfarm until the single-use landfarm is closed pursuant to subrule 120.12(2).

120.9(6) PCS application rates. PCS shall be land applied at a rate that is as uniform as practical over an area sufficient to satisfy the greater of the following area requirements. However, PCS from an emergency cleanup supervised by the department pursuant to subrule 120.6(1) may instead be land applied at a rate of 162 ft² of landfarm area per cubic yard (yd³) of PCS, that is as uniform as practical, and in which no layer of unincorporated PCS is thicker than 2 inches.

a. Petroleum constituents. PCS shall be land applied over the largest area required by the following:

(1) Benzene. PCS contaminated with benzene shall be land applied in accordance with Table 1. The average concentration of benzene in the PCS shall be used to determine the landfarm area (ft²) required per cubic yard (yd³) of PCS to be land applied. The average concentration of benzene shall be calculated from all soil boring test results that are within the PCS excavation area. The application shall be as uniform as practical over the area required.

Table 1			
Average concentration of benzene (mg/kg)	Ft ² of landfarm area per yd ³ of PCS applied	Maximum thickness of unincorporated PCS	Yd ³ of PCS per acre of landfarm
0 < mg/kg ≤ 10	81 ft ²	4 inches	537 yd ³
10 < mg/kg ≤ 20	162 ft ²	2 inches	268 yd ³
20 < mg/kg	324 ft ²	1 inch	134 yd ³

(2) Toluene, ethylbenzene, xylene, and TEH-diesel. PCS that is not contaminated with benzene or MTBE, but is contaminated with toluene, ethylbenzene, xylene, TEH-diesel, or some combination thereof, shall be land applied at a rate of 81 ft² of landfarm area per cubic yard (yd³) of PCS. The application shall be as uniform as practical, and no layer of unincorporated PCS shall be thicker than 4 inches.

b. Total heavy metals. PCS that has been tested for heavy metals pursuant to subparagraph 120.6(2) “c”(4) shall be applied at a rate that is as uniform as practical, that results in no layer of PCS thicker than 4 inches, and that upon incorporation produces a landfarm soil that satisfies the following requirements. This analysis requires prior testing of background levels of heavy metals at the proposed landfarm site.

(1) Total heavy metals are less than 2,500 milligrams per kilogram (mg/kg).

(2) Any particular concentration of a heavy metal is less than the appropriate statewide standard for soil developed pursuant to 567—Chapter 137.

120.9(7) *Flagging.* The landfarm plot(s) upon which PCS is land applied shall be flagged for one year after land application or until the landfarm is closed pursuant to rule 567—120.12(455B), whichever is shorter.

120.9(8) *Removal of solid waste and rubble.* All solid waste that is not PCS (e.g., pipe) shall be removed and properly disposed of. All rubble, stones, and debris larger than 4 inches in diameter, or that interfere with incorporating and turning the PCS, shall be removed and properly disposed of.

120.9(9) *PCS incorporation.* PCS shall be incorporated into the soil by tilling, disking, or other suitable means within 48 hours of being land applied or before the next precipitation event, whichever is sooner. PCS shall not be incorporated deeper than 12 inches.

120.9(10) *Turning the PCS.* After incorporation, the PCS shall be turned by tilling, disking, or other suitable means at least once per month for the first three months during landfarm season.

120.9(11) *No crops for consumption.* Landfarms shall not grow crops within 15 feet of a landfarm plot that is flagged pursuant to subrule 120.9(7). Crops for human and livestock consumption may be grown at a single-use landfarm after the landfarm plot is no longer required to be flagged pursuant to subrule 120.9(7).

120.9(12) *Removal of PCS from a landfarm.* PCS shall not be removed from a landfarm until the landfarm is closed pursuant to rule 567—120.12(455B) or the following conditions are met:

a. One sample from each 2,500 ft² (e.g., 50-foot × 50-foot area) of landfarm plot is analyzed pursuant to subparagraphs 120.6(2)“c”(1), (2), and (3). A minimum of one sample per landfarm plot shall be obtained. All samples shall be obtained from between the top 2 to 6 inches of soil.

b. The results of the tests in paragraph 120.12(2)“a” demonstrate that petroleum constituent concentrations for benzene, toluene, ethylbenzene, TEH-diesel, and MTBE are below the detection limits required by 567—Chapter 135.

c. Records of the lab results, amount of PCS removed, and the exact final location of the PCS shall be maintained by the landfarm.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.10(455B) Emergency response and remedial action plans.

120.10(1) *Access.* Emergency response and remedial action plan (ERRAP) documents shall be readily available. Landfarm applicators shall have employees carry a copy of the ERRAP document to each site where operations are taking place.

120.10(2) *Updates.* An updated ERRAP shall be included with any request for permit modification to incorporate a facility or operational change that requires modification of the currently approved ERRAP.

120.10(3) *Employee training.* At a minimum, all employees shall receive annual training sufficient to understand and utilize ERRAP documents.

120.10(4) *Content.* The content of ERRAP documents shall be concise and readily usable as a reference manual by facility managers and operators during emergency conditions. The ERRAP document content shall address at least the following primary issues in detail, unless project conditions render the specific issue as not applicable. The rationale for exclusion of any issue areas that are not applicable must be provided either in the body of the plan or as a supplement. Additional ERRAP requirements unique to the facility shall be addressed as applicable.

a. *Facility information.*

- (1) Permitted agency.
- (2) DNR permit number.
- (3) Responsible official and contact information.
- (4) Project location.
- (5) Facility description.
- (6) Site and environs map.

b. *Weather-related events.*

- (1) Intense rainstorms and erosion.
- (2) Intense rainstorms or flooding impacting site access and usability.

c. *Fire and explosions.*

- (1) Flammable PCS.

- (2) Buildings on site.
- (3) Equipment.
- (4) Waste gases from PCS.
- (5) Off-site fires or explosions at cleanup site or during transport.
- d. Spills and releases.*
 - (1) Saturated or slurry PCS.
 - (2) Free liquids from stored PCS.
 - (3) Spill of PCS during transport.
- e. Hazardous materials.*
 - (1) Hazardous waste delivery.
 - (2) Hazardous gases.
- f. Emergency, spill and release notification and reporting.*
 - (1) Emergency response agencies.
 - (2) Federal agencies.
 - (3) State agencies.
 - (4) County and city agencies.
 - (5) Special populations near site.
 - (6) Reporting requirements and forms.
 - (7) News media.
- g. Primary emergency equipment inventory.*
 - (1) Major equipment.
 - (2) Fire hydrants and water sources.
 - (3) Off-site equipment resources.
- h. ERRAP training requirements.*
 - (1) Training providers.
 - (2) Employee orientation.
 - (3) Annual training updates.
 - (4) Training completion and record keeping.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.11(455B) Reporting and record-keeping requirements.

120.11(1) Reporting. The following information shall be submitted to the department on a form provided by the department. All reporting submissions shall include the name, address, and telephone number of the landfarm and permit holder, as well as the permit number.

a. Storage notification. Landfarms shall submit the following information to the department and department field office with jurisdiction over the landfarm before receipt of the PCS for storage; however, at least 30 days' notification is encouraged. PCS storage information from an emergency cleanup supervised by the department pursuant to subrule 120.6(1), however, shall be reported within 7 days of the emergency cleanup.

- (1) The date the PCS is expected to be delivered for storage at the landfarm.
- (2) Where the PCS will be stored at the landfarm.
- (3) The spill number, UST registration number, and LUST number, as applicable.

b. Land application notification. Landfarms shall submit the following information to the department and department field office with jurisdiction over the landfarm before land application; however, at least 30 days' notification is encouraged. PCS information from an emergency cleanup supervised by the department pursuant to subrule 120.6(1), however, shall be reported within 7 days of the emergency cleanup.

(1) The date the PCS is expected to be applied to the land. If the PCS is not applied on this date, the department shall be informed of the actual application date.

(2) A physical address or parcel identification number for the landfarm location, a legible topographic map or aerial photo, a USDA soil map with key, and a map of the 100-year flood plain illustrating and labeling where the PCS is to be applied.

- (3) Application rate calculations pursuant to subrule 120.9(6).

(4) The spill number, UST registration number, and LUST number, as applicable.

c. PCS analysis and characterization. Information on the analysis and characterization of the PCS pursuant to rule 567—120.6(455B) shall be submitted to the department before receipt of the PCS for storage or land application; however, at least 30 days' notification is encouraged. PCS analysis and characterization information from an emergency cleanup supervised by the department pursuant to subrule 120.6(1), however, shall be reported within 60 days of the emergency cleanup.

120.11(2) Record keeping. All landfarm applicators shall maintain records of all information related to compliance with this chapter and the permit throughout the life of the landfarm and for three years after landfarm closure pursuant to rule 567—120.12(455B). This information shall be available to the department upon request. Applicable information includes, but is not limited to, the following material.

- a.* Permit application information pursuant to rule 567—120.5(455B).
- b.* PCS analysis and characterization pursuant to rule 567—120.6(455B).
- c.* Site suitability information pursuant to rule 567—120.7(455B).
- d.* Specific design requirements pursuant to rule 567—120.8(455B).
- e.* Operations information pursuant to rule 567—120.9(455B); in particular, application rate calculations pursuant to 120.9(6).
- f.* ERRAP documents pursuant to rule 567—120.10(455B).
- g.* Reports submitted pursuant to subrule 120.11(1).
- h.* Closure information pursuant to rule 567—120.12(455B).

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.12(455B) Landfarm closure. Unless otherwise required or approved by the department, landfarms shall be closed in one of the following ways:

120.12(1) Three years after the application of PCS, or

120.12(2) At least six months after the application of PCS when documentation has been submitted and acknowledged in writing by the department that each landfarm plot has been tested as follows.

a. One sample from each 10,000 ft² (e.g., 100-foot × 100-foot area) of landfarm plot is analyzed pursuant to subparagraphs 120.6(2)“*c*”(1), (2), and (3). A minimum of one sample per landfarm plot shall be obtained. All samples shall be obtained from between the top 2 to 6 inches of soil.

b. The results of the tests in paragraph 120.12(2)“*a*” demonstrate that petroleum constituent concentrations are less than 0.54 mg/kg for benzene, 42 mg/kg for toluene, 15 mg/kg for ethylbenzene, 3800 mg/kg for TEH-diesel and 0.02 mg/kg for MTBE.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

567—120.13(455B,455D) Financial assurance requirements for landfarms. The holder of a sanitary disposal project permit for a landfarm must obtain and submit a financial assurance instrument to the department in accordance with this rule. The financial assurance instrument shall provide monetary funds for the purpose of conducting closure activities at the landfarm plot(s) due to the permit holder's failure to properly close the site as required in accordance with rule 567—120.12(455B) within 30 days of permit suspension, termination, revocation, or expiration.

120.13(1) No permit without financial assurance. The department shall not issue or renew a permit to an owner or operator of a landfarm until a financial assurance instrument has been submitted to and approved by the department.

120.13(2) Proof of compliance. Proof of the establishment of the financial assurance instrument and compliance with this rule, including a current closure cost estimate, shall be submitted at the time of application for a permit for a landfarm applicator permit. The owner or operator must provide continuous coverage for closure and submit proof of compliance, including an updated closure cost estimate, with each permit renewal thereafter until released from this requirement by the department.

120.13(3) Financial assurance amounts required. The estimate submitted to the department must be certified by a professional engineer and account for at least the following factors determined by the department to be minimal necessary costs for closure pursuant to rule 567—120.12(455B):

- a.* Third-party costs to conduct soil sampling and properly clean all equipment and storage areas at the landfarm plot(s).

b. If PCS is temporarily stored on site prior to incorporation, then this estimate shall include third-party labor and transportation costs and total tip fees to properly dispose of all PCS equal to the maximum storage capacity on site.

120.13(4) *Acceptable financial assurance instruments.* The financial assurance instrument shall be established in an amount equal to the cost estimate prepared in accordance with subrule 120.13(3) and shall not be canceled, revoked, disbursed, released, or allowed to terminate without the approval of the department. Financial assurance may be provided by cash in the form of a secured trust fund or local government dedicated fund, surety bond, letter of credit, or corporate or local government guarantee as follows:

a. *Secured trust fund.* The owner or operator of a landfarm or entity serving as a guarantor may demonstrate financial assurance for closure by establishing a secured trust fund that conforms to the requirements of this paragraph.

(1) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The fund shall be restricted for the sole purpose of funding closure activities at the landfarm sites, and a copy of the trust agreement must be submitted to the department and placed in the permit holder's official files.

(2) A secured trust fund shall name the department of natural resources as the entity authorized to draw funds from the trust, subject to proper notification to the trust officer of failure by the permittee to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) Moneys in the fund shall not be assigned for the benefit of creditors with the exception of the state.

(4) Moneys in the fund shall not be used to pay any final judgment against a permit holder arising out of the ownership or operation of the site during its active life or after closure.

(5) The owner or operator or another person authorized to conduct closure activities may request reimbursement from the trustee for closure expenditures as they are incurred. Requests for reimbursement shall be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure and if documentation of the justification for reimbursement has been submitted to the department for prior approval.

(6) If the balance of the trust fund exceeds the current cost estimate for closure at any time, the owner or operator may request withdrawal of the excess funds from the trustee so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

b. *Local government dedicated fund.* The owner or operator of a publicly owned entity permitted to landfarm PCS or a local government serving as a guarantor may demonstrate financial assurance for closure by establishing a dedicated fund that conforms to the requirements of this paragraph.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, resolution or order as a restricted fund to pay for closure costs arising from the operation of the landfarm site(s).

(2) A copy of the document establishing the dedicated fund must be submitted to the department and placed in the permit holder's official files.

(3) If the balance of the dedicated fund exceeds the current cost estimate for closure at any time, the owner or operator may withdraw excess funds so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

c. *Surety bond.* A surety bond must be written by a company authorized by the commissioner of insurance to do business in the state. The surety bond shall comply with the following:

(1) The bond shall be in a form approved by the commissioner of insurance and shall be payable to the department of natural resources.

(2) The bond shall be specific to a particular landfarm owner or operator for the purpose of funding closure in accordance with rule 567—120.12(455B) and removing any stockpiled PCS that may remain at the site(s) due to the owner's or operator's failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) The owner or operator shall provide the department with a statement from the surety with each permit application renewal, noting that the bond is paid and current for the permit period for which the owner or operator has applied for renewal.

d. Letter of credit. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(1) The owner or operator must submit to the department a copy of the letter of credit and place a copy in the permit holder's official files.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the permit holder and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the permit holder's files.

(3) The letter of credit must be irrevocable and must be issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 90 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into a secured trust fund that meets the requirements of paragraph 120.13(4) "a." If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the secured trust fund established by the owner or operator. The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

e. Corporate guarantee. An owner or operator may meet the requirements of this rule by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a "substantial business relationship" with the owner or operator.

(1) The terms of the written guarantee must provide that within 30 days of the owner's or operator's failure to perform closure of a landfarm site(s) covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);
2. Establish a fully funded secured trust fund as specified in paragraph 120.13(4) "a" in the name of the owner or operator (payment guarantee); or
3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following three conditions:

1. A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor's or Aaa, Aa, A, or Baa as issued by Moody's; or
2. A ratio of less than 1.5 comparing total liabilities to net worth; or
3. A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities.

(3) The tangible net worth of the guarantor must be greater than the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(4) The guarantor must have assets amounting to at least the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(5) Record-keeping and reporting requirements. The guarantor must submit the following records to the department and place a copy in the permit holder's official files:

1. A copy of the written guarantee between the owner or operator and the guarantor.
2. A letter signed by a certified public accountant and based upon a certified audit that:
 - Lists all the current cost estimates covered by a guarantee including, but not limited to, cost estimates required by subrule 120.13(3); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40 CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and

- Provides evidence demonstrating that the guarantor meets the conditions of subparagraphs 120.13(4)“e”(2), (3) and (4).

3. A copy of the independent certified public accountant’s unqualified opinion of the guarantor’s financial statements for the latest completed fiscal year. In order for the guarantor to be eligible to use the guarantee, the guarantor’s financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this instrument. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the corporate guarantee, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

f. Local government guarantee. An owner or operator may demonstrate financial assurance for closure by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E.

(1) The terms of the written guarantee must provide that within 30 days of the owner’s or operator’s failure to perform closure of a landfarm site(s) covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);
2. Establish a fully funded secured trust fund as specified in paragraph 120.13(4)“a” in the name of the owner or operator (payment guarantee); or
3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following requirements:

1. If the guarantor has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the guarantor must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody’s, or AAA, AA, A, or BBB, as issued by Standard & Poor’s, on all such general obligation bonds; or
2. The guarantor must satisfy each of the following financial ratios based on the guarantor’s most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

(3) The guarantor must prepare its financial statements in conformity with generally accepted accounting principles or other comprehensive basis of accounting and must have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa.

(4) A guarantor is not eligible to assure its obligations if:

1. The guarantor is currently in default on any outstanding general obligation bonds; or
2. The guarantor has any outstanding general obligation bonds rated lower than Baa as issued by Moody’s or BBB as issued by Standard & Poor’s; or
3. The guarantor operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or
4. The guarantor receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement. A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism; or

5. The closure costs to be assured are greater than 43 percent of the guarantor’s total annual revenue.

(5) The local government guarantor must include disclosure of the closure costs assured through the guarantee in its next annual audit report prior to the initial application of PCS at the landfarm site(s) or prior to cancellation of an alternative financial assurance instrument, whichever is later. For the first year the guarantee is used to assure costs at a particular site(s), the reference may instead be placed in the guarantor’s official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(6) The local government owner or operator must submit to the department the following items:

1. A copy of the written guarantee between the owner or operator and the local government serving as guarantor for the closure costs at the landfarm site(s).

2. A copy of the guarantor's most recent annual financial audit report indicating compliance with the financial ratios required by numbered paragraph 120.13(4) "f"(2)"2," if applicable, and the requirements of subparagraphs 120.13(4) "f"(3) and (4).

3. A letter signed by the local government's chief financial officer that lists all the current cost estimates covered by the guarantor, as described in subrule 120.13(3); and that provides evidence and certifies that the local government meets the conditions of subparagraphs 120.13(4) "f"(2), (3), (4) and (5).

120.13(5) *Financial assurance cancellation and permit suspension.*

a. A financial assurance instrument may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance prior to cancellation, as specified in this rule, or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

b. A financial assurance instrument shall be continuous in nature until canceled by the financial assurance provider or until the department gives written notification to the owner, operator, and financial assurance provider that the covered site has been properly closed. The financial assurance provider shall give at least 90 days' notice in writing to the owner or operator and the department in the event of any intent to cancel the instrument.

c. Within 60 days of receipt of a written notice of cancellation of financial assurance by the financial assurance provider, the owner or operator must provide the department an alternative financial assurance instrument. If a means of continued financial assurance is not provided within that 60 days, the department shall suspend the permit.

d. The owner or operator shall perform proper closure within 30 days of the permit suspension. For the purpose of this rule, "proper closure" means completion of all items pursuant to rule 567—120.12(455B) and subrule 120.13(3).

e. If the owner or operator does not properly close the site within the 30-day period allowed, the department shall file a claim with the financial assurance instrument provider to collect the amount of funds necessary to properly close the site.

f. An owner or operator who elects to terminate a permitted activity, whose renewal application has been denied, or whose permit has been suspended or revoked for cause must submit within 30 days of the termination of the permit a schedule for completing proper closure of the terminated activity. Closure completion cannot exceed 60 days from the date of termination of the permit.

g. The director may also request payment from any financial assurance provider for the purpose of completing closure when the following circumstances exist:

(1) The owner or operator is more than 15 days late in providing a schedule for closure or for meeting any date in the schedule for closure.

(2) The owner or operator declares an economic inability to comply with this rule, either by sending written notification to the director or through an action such as, but not limited to, filing for bankruptcy.

[ARC 6982C, IAB 4/19/23, effective 5/24/23]

These rules are intended to implement Iowa Code sections 455B.301A, 455B.304 and 455B.383.

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CHAPTER 121
LAND APPLICATION OF WASTES

[Prior to 7/1/83, DEQ Ch 33]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—121.1(455B,17A) Scope of title. The department has jurisdiction over the disposal of solid waste including the land application of those wastes. The land application of solid wastes requires a specific permit from the department, unless certain conditions are met which warrant that an exemption be granted.

This chapter provides general definitions applicable in this title and rules of practice, including forms, applicable to the public in the department's administration of the subject matter of this title.

This chapter contains rules and regulations specifying the types of waste to which the chapter applies, the circumstances under which no permit is required for land application, and the permit requirements for those activities not exempted.

567—121.2(455B) Definitions.

"Industrial sludge" means any sludge produced by industrial activity.

"Land application" means a method through which sludge is applied to the ground surface. Land application may include subsurface injection.

"Sewage sludge" is defined in 567—Chapter 67.

"Sludge" means any solid, semisolid, or liquid waste generated from a commercial or industrial wastewater treatment plant, water supply treatment plant or air pollution control facility or any other such waste having similar characteristics and effects.

"Solid waste" means garbage, refuse, rubbish, and other similar discarded solid or semisolid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities. Solid waste may include vehicles, as defined by Iowa Code section 321.1, subsection 1. Nothing herein shall be construed as prohibiting the use of dirt, stone, brick, or similar inorganic material for fill, landscaping, excavation, or grading at places other than a sanitary disposal.

"Stabilized sludge" means sludge that has been processed to a point where it has the ability to resist further change, produces minimal odor, and has achieved a substantial reduction in the pathogenic organism content. (The department recognizes principles of stabilization other than the conventional biological processes. Whether these processes produce a stabilized sludge will be evaluated on an individual basis.)

567—121.3(455B) Application for permits and forms. Any private or public person or agent desiring to secure a permit for any land application of solid waste not exempted in rules 121.5(455B) and 121.6(455B) shall file a properly completed application.

121.3(1) A properly completed application shall consist of the application form with all blanks filled in by the applicant, all signatures, and all documents and information required by the land application rules. Application forms may be obtained from:

Environmental Services Division
Iowa Department of Natural Resources
Henry A. Wallace Building
900 East Grand
Des Moines, Iowa 50319

Properly completed forms should be submitted in accordance with the instructions for the form.

121.3(2) Application for a land application permit shall be made on Form 43, "Application for a Sanitary Disposal Project Permit."

567—121.4(455B) Land application of solid wastes.

121.4(1) General. This chapter shall apply to the land application of solid wastes, except domestic septage, sewage sludge, animal manure, animal bedding and crop residue. Land application of animal

manure should be in conformance with the provisions of 567—Chapter 65. Land application of water supply sludge and certain other approved wastes is governed by 121.5(455B). Land application of other waste without a permit is governed by 121.6(455B). Land application of wastes which require a permit is governed by 121.7(455B). These rules establish permit requirements and exemptions for home and crop use and general exemptions for other wastes, contamination levels and other requirements for the disposal of solid wastes by land application. Land application of sewage sludge is governed by 567—Chapter 67.

121.4(2) Land application does not include disposal of solid waste by burial.

567—121.5(455B) Land application of solid wastes for home and certain crop use.

121.5(1) Definitions.

a. “*Home and certain crop use*” shall include lawns, gardens, flower beds or similar areas associated with residential use. Included also is land where food crops for human consumption are raised or are made available to the general public.

b. “*Food crops for human consumption*” are those crops that may be consumed by humans without prior heating or processing (e.g., lettuce, carrots) or those that are commonly available to the public in raw form (e.g., asparagus, squash). Food crops for human consumption exclude cereal crops.

121.5(2) Only the following solid wastes may be applied to land for home and certain crop uses. These and other solid wastes may be used on other agricultural lands.

a. Water supply sludges.

b. Other wastes as approved by the department based on their constituents and expected environmental impact.

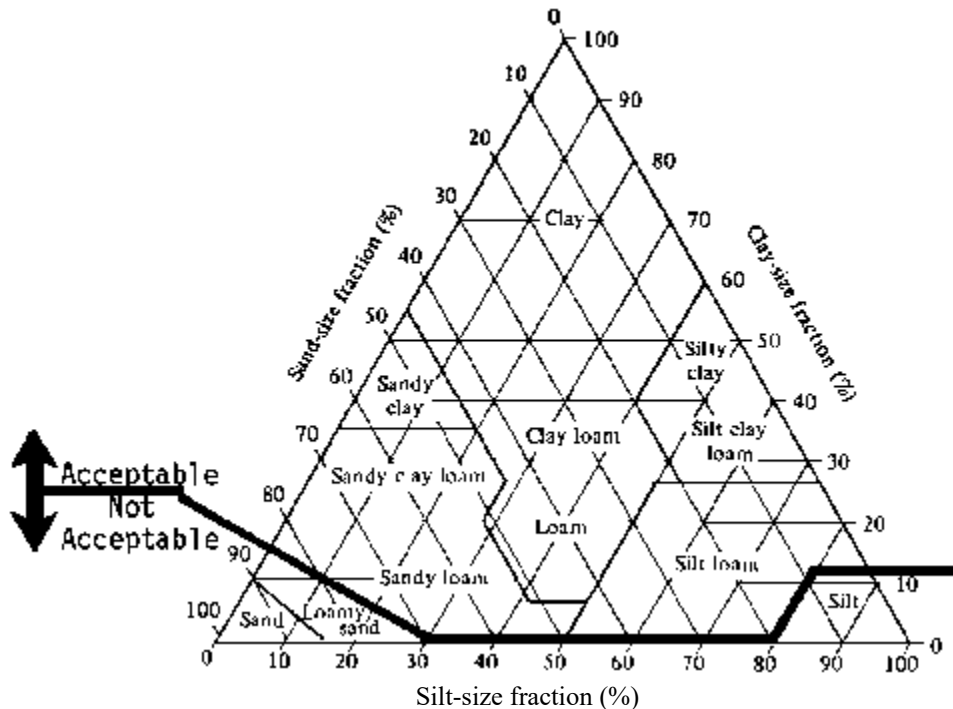
567—121.6(455B) Permit exemptions. No permit is required for land application of the following solid wastes under the following circumstances. (Land applications that do not comply with these rules must have obtained a permit under rule 121.7(455B).)

121.6(1) *Solid wastes.* Solid wastes (other than petroleum contaminated soil) may be land applied without permit if the land application does not violate the following:

a. Land application of sludge and other solid waste shall be conducted in accordance with the following criteria:

(1) The maximum application rate shall not exceed two tons per acre per year, measured on a dry weight basis. The maximum application rate shall be reduced if soil tests indicate that a two ton per acre per year rate would provide nutrient levels significantly in excess of crop nutrient requirements or would provide heavy metals concentrations in the soil at levels which may be detrimental to crop production or hazardous to human health.

(2) The sludge or solid waste shall be applied only to soils classified as acceptable throughout the top five feet of soil profile. The acceptability of a soil shall be determined using the following chart based on USDA soil classifications.



U.S.D.A. textural classification chart, Sand size particles 2-0.05 mm, silt-size particles, 0.05-0.002 mm; and clay size particles; less than 0.002 mm.

(3) Land application sites shall have soil pH maintained between 6.5 and 8.4 for sludges with cadmium levels up to 15 mg/kg. The soil pH may be maintained below 6.5 but not below 6.0 if the cadmium level is 8.0 mg/kg or the sludge has been stabilized to a pH of 10-12. If the soil pH is below these levels, it is acceptable to use agricultural lime to increase the pH to an acceptable level prior to land application of sludge.

(4) The department recommends that all sludge be injected on the contour or applied to the surface and mechanically incorporated into the soil as soon as possible but not later than 48 hours after application.

(5) If the sludge is applied to land on which the soil loss exceeds the soil loss limits established by the county soil conservation district, the sludge shall be injected on the contour or shall be applied to the surface and mechanically incorporated into soil within 48 hours of application. The sludge shall not be applied to ground having greater than 9 percent slope.

(6) If the sludge is applied to land subject to flooding more frequently than once in ten years, the sludge shall be injected or shall be applied to the surface and mechanically incorporated into the soil within 48 hours. Information on which land is subject to flooding more frequently than once in ten years is available from the department.

(7) Sludge application on frozen or snow-covered ground should be avoided. If application on frozen or snow-covered ground is necessary, it shall be limited to land areas of less than 5 percent slope.

(8) If sludge is applied within 200 feet of a stream, lake, sinkhole or tile line surface intake located downgradient of the land application site, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application.

b. The waste shall not be land applied or made available for land application if the waste contains constituents in excess of the levels specified below.

<u>Constituents</u>	<u>Levels</u>	<u>Cumulative Loading Rate</u>	
Arsenic	41 mg/kg	41 kg/ha	36 lb/ac
Cadmium	39 mg/kg	39 kg/ha	34 lb/ac
Chromium	1200 mg/kg	3000 kg/ha	2670 lb/ac
Copper	1500 mg/kg	1500 kg/ha	1335 lb/ac
Lead	300 mg/kg	300 kg/ha	267 lb/ac

<u>Constituents</u>	<u>Levels</u>	<u>Cumulative Loading Rate</u>	
Mercury	17 mg/kg	17 kg/ha	15 lb/ac
Molybdenum	75 mg/kg	75 kg/ha	66 lb/ac
Nickel	420 mg/kg	420 kg/ha	373 lb/ac
Selenium	36 mg/kg	100 kg/ha	89 lb/ac
Zinc	2800 mg/kg	2800 kg/ha	2490 lb/ac

If the waste has other toxic constituents, the toxic constituents shall not be in excess of levels where there is a threat to human, animal, or plant life as determined by the department.

c. **Macronutrients.**

(1) The application of nitrogen available from the waste and any other sources does not exceed the nitrogen needs of the vegetation to be grown on the site over the next year, and

(2) The total application of phosphorus and potassium does not exceed the acceptable agronomic application rates for the site and crops involved.

d. The waste does not have a sodium absorption ratio in excess of levels where there is a threat to plant life. If high sodium absorption ratios are suspected, analytical testing may be required.

e. **Stabilized sludge.** If land applying sludge or other wastes containing pathogens, the waste must be treated to reduce pathogen content by methods specified in 567—Chapter 67 prior to land application.

f. The waste does not contain a waste having direct process stream contact with the following listed organics: Petroleum products, organic solvents, pesticides, pharmaceuticals, polychlorinated biphenyls (PCBs). The waste does not originate from a process which may release the previously mentioned compounds.

g. **Assimilation capabilities.** The waste would not be readily present in a visual analysis of a random sample collected two years following application.

h. **General public health aspects.** The waste is not putrescible, or is incorporated (or otherwise managed) to prevent runoff and odor problems.

i. **Separation distance.** Waste shall not be applied within 200 feet of an occupied residence nor within 500 feet of a well.

j. **Operating requirements.** A generator who intends to dispose of its waste by land application shall:

(1) Analyze the waste to determine if any sources exist which may contribute significant quantities of potentially hazardous chemicals or other toxic substances. If any are found, the generator shall inform the department of their presence and shall analyze the waste for chemicals or substances in accordance with guidelines provided by the department.

(2) Sample and analyze the waste to determine whether it meets the criteria in 121.6(1).

(3) Unless rules for specific programs under USEPA or department authority provide otherwise, or unless other methods are approved by the department for a specific situation, samples taken and analyses made to document contamination under this chapter shall be conducted in accordance with the following:

1. **Samples.** “A Compendium of Superfund Field Operations Methods,” USEPA, Office of Emergency and Remedial Response, Washington, D.C. 20460 (EPA/540/p-87/001, OSWER Directive 93.55.0-14).

2. **Analyses.** “Test Methods for Evaluation of Solid Waste, Physical — Chemical Methods SW-846,” USEPA, Third Edition, November 1986, as revised through December 1988. Until the department adopts rules regarding certification of laboratories, analyses shall be conducted at a laboratory that certifies to the department that the approved analytical procedure has been utilized, or a laboratory which has been approved under EPA’s Contract Laboratory Program. Upon adoption of rules by the department regarding certification of laboratories, all analyses shall be made at a certified laboratory.

k. **Land application program.** All generators intending to land apply their waste routinely shall establish and maintain in writing a long-range program for land application of its waste. This program shall be developed for a minimum period of five years and shall be updated annually. A copy of this program shall be available at the facility for inspection by the department. As a minimum this program shall contain the following information in detail for the next calendar year and in general terms for the following four years. The plan shall include, but not be limited to, the following:

(1) An outline of the waste sampling schedule and procedures which will be followed to ensure that the waste being applied to land continues to meet the criteria in 121.6(1).

(2) A determination of the amount of land required to allow disposal to be conducted in accordance with the requirements of 121.6(1).

(3) An identification of the land and waste application methods which will be used to dispose of the waste. Those areas and application methods shall be selected as necessary to ensure that land application can be conducted in accordance with the land application criteria in 121.6(1).

(4) The names of the owners and operators of all land to be used for waste disposal, and identification of any legal arrangements made relative to use of these areas. The programs should also outline any restrictions or special conditions which exist regarding use of these areas for waste disposal.

(5) An overall schedule for the disposal of the waste. This schedule should indicate the areas being used, the time of year that disposal on each area will be conducted, and the proposed application rates for each area.

(6) A determination of the types and capacities of the equipment required to dispose of the waste in accordance with the developed disposal schedule. The program shall also outline how the required disposal equipment will be made available and who will be responsible for conducting land disposal operations.

(7) A determination of the volumes and types of storage and handling facilities required to allow waste disposal to be conducted in accordance with the waste disposal schedule. The program shall also outline how any required additional waste storage or handling facilities will be provided.

(8) A plan to construct or obtain any additional waste storage, handling or disposal facilities or equipment which are required by the waste disposal program.

l. Other requirements.

(1) If the waste is being supplied to other persons for land application, the generating facility shall inform them of the applicable requirements of the waste disposal program, 567—subrules 101.3(2) and 121.6(1).

(2) If the generating facility determines that a person being supplied waste for land application is not complying with applicable requirements of the waste disposal program or the land application criteria, the generating facility shall work with them to obtain compliance with the requirements. If subsequent compliance cannot be achieved, the generating facility shall not supply additional waste to the person.

(3) The generating facility must inform all persons involved in waste disposal operations of the potential health hazards associated with waste disposal, including informing them of the cautions and recommended practices which should be followed to minimize these hazards.

(4) The generating facility shall maintain records of sample analysis and waste disposal operations to document compliance with 567—121.6(455B).

(5) If waste is applied to land subject to use by the general public (e.g., golf courses, parks), public access to the waste application site shall be restricted for a period of one month after waste application. In no case shall waste be applied to areas where direct body contact with the soil is likely (e.g., school yards, playground areas, picnic areas).

(6) Waste shall not be applied to land for the commercial production of human consumption food crops.

(7) If sludge is applied to land where crops being grown will be grazed by or fed to livestock within two months of sludge application, or where cereal grains will be harvested within two months of sludge application, the sludge shall be injected or shall be applied to the surface and mechanically incorporated into the soil.

m. Notification. Before opening a disposal site the department shall be notified in writing of the location of the disposal operation. This notice shall also contain the legal description of the site, the landowner, the responsible official, the quantities and type of waste (including chemical analyses which the department may require to adequately define the waste).

121.6(2) *Petroleum-contaminated soil.* Rescinded IAB 9/15/04, effective 10/20/04.

121.6(3) *Flood plains.* Rescinded IAB 9/15/04, effective 10/20/04.

567—121.7(455B) Permit requirements. Prior to any land application of solid waste not exempted in 121.5(455B) and 121.6(455B), a permit must be obtained by the waste generator in accordance with the following requirements.

121.7(1) Solid wastes. The land application of sludge other than from a publicly owned treatment works which does not comply with 121.6(455B) shall:

a. Submit plan requirements of 567—Chapter 102 for land application sites. In addition all permit applications for land application shall include:

(1) A map and aerial photograph as required in 567—subrule 102.12(3) that shall be of sufficient scale to show all homes, buildings, lakes, ponds, watercourses, wetlands, dry runs, rock outcroppings, roads and other applicable details including topography and drainage patterns. All wells located within one mile of the site shall be identified on the map or aerial photograph and a bench mark shall be indicated.

(2) A soil map.

(3) Evidence that the proposed plan has been reviewed by the local soil conservation district commission and that the technical assistance of the soil conservation district will be utilized to facilitate compliance with wind and water soil loss limit regulations provided for in Iowa Code sections 161A.42 to 161A.51.

(4) Total area of the site in acres and the number of acres which are to be used for sludge disposal.

(5) Information on the depth, construction and use of any wells located within one mile of the site.

(6) Soil loss limits applicable to the site.

(7) Design soil loss levels for the proposed site.

(8) Estimated current soil loss levels.

(9) Cation exchange capacity, current exchangeable cations, available potassium and phosphorus, total nitrogen, bulk density and pH (normal and as modified) of site soils.

(10) Water table levels of the site, including the frequency and duration of any expected high water table or flooding.

(11) Information on the source, quantity, and method of treatment of the sludge prior to disposal.

(12) Results of sludge analyses, including the following: total residue; volatile residue; pH; total nitrogen¹; NH₃-N¹; NO₃-N¹; total phosphorus¹; potassium¹; the following metals¹: Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Lead (Pb), Selenium (Se), Zinc (Zn); and such other tests as may be necessary to establish the constituents and stability of the sludge.

The collection and preservation of samples shall be done by the highest grade operator or the operator's designee at the plant producing the sludge. This shall be done in a manner and frequency approved by the department and intended to ensure that the sampling results are representative of sludge being disposed.

All analyses shall be performed in accordance with the methods described in "Methods for Chemical Analysis of Water and Wastes," 1974 (US-EPA) or "Standard Methods for the Examination of Water and Waste Water," 17th Edition, 1989. Alternate methods may be substituted only if acceptable to the university hygienic laboratory and approved by the department.

(13) A detailed description of the disposal process to be used, including: method of application and operation; daily, annual and total loading of sludge and of all significant components of the sludge identified in the analyses of 121.7(1)"a"(12); periods of use (including duration and frequencies); crop and cropping practice employed; and final use of site.

(14) Information specifying the equipment to be used, its design capacities, degree of utilization and expected methods of operation.

(15) Information indicating that the proposed sludge disposal project will not result in predictable uptake of contaminants by site vegetation to such a degree as to make the site unsuitable for its intended uses.

This shall be supported by information as to the rate of uptake and toxicity of any constituent in question, along with soil pH and cation exchange capacities and any other data necessary to evaluate the significance of contamination.

(16) Information indicating that the proposed sludge disposal project will not result in predictable movement of significant quantities of contaminants from the site to standing or flowing surface waters or to shallow aquifers that are in actual use or are deemed to have potential for use as water sources. Cation exchange capacities of site soils shall be utilized to evaluate the potential for metal contamination.

(17) Information indicating that the portion of the site to be utilized is outside a flood plain or shoreland, unless proper engineering and protection of the site will render it acceptable and prior approval of the department under Title V of these rules and, where necessary, the U.S. corps of engineers, is obtained.

(18) Information indicating how the operational requirements of 121.7(1)“c” and “d” will be met.

b. Additional plan requirements for land application sites. If site conditions, waste constituents, or proposed operation procedures warrant, the department may require any of the following:

(1) A description of the material underlying the proposed site, including stratigraphic sections based on a number of borings adequate to accurately determine the geology of the proposed site, unless the department agrees that an equivalent description may be obtained without borings. Additional information, including additional borings, may be required for any additional locations of specific concern to the department.

The stratigraphic sections shall be described from the surface to a depth determined by the director to be necessary to evaluate the suitability of the site for disposal of the specific waste.

Samples of sediments and rock units shall be collected at 5-foot intervals or when different genetic soil horizons are encountered, whichever is more frequent, unless the department agrees the other data will provide equivalent information. If samples are required, they shall be identified by location and depth. The name of the person classifying the sediments shall be indicated. At least one complete set of unaltered sack samples shall be submitted with the application. A drilling location plan and drilling log shall be submitted for each series of samples.

(2) A detailed description of each genetic soil horizon in terms of clay mineralogy, bulk density, moisture holding capacity, seasonal water table levels, particle size distribution, organic matter content, pH, cation exchange capacity, drainage class total heavy metals concentrations, current exchangeable cations, Atterberg limits and grain size distribution (by means of laboratory sieve and hydrometer or pipette analysis) unless the department agrees that other data will provide equivalent information.

(3) The direction of groundwater flow and the number, location, and depth of monitoring wells needed to monitor the groundwater quality.

(4) Information indicating that the portion of the site to be utilized is not situated in an unconsolidated sequence that will permit leakage of a quantity of water of a quality reasonably likely to have an adverse effect on the groundwater beneath or adjacent to the proposed site. The potential leakage shall be evaluated by means of generalized Darcy's Law:

$$Q = \frac{AP(h_2 - h_1)}{L} \text{ where:}$$

Q = cubic feet of liquid/day/square foot of area of the interface.

A = one square foot of area.

P = coefficient of permeability in feet/day of the unconsolidated confining unit above the high water table.

h_2 = maximum final elevation of a contiguous portion of till of the site.

h_1 = lowest elevation of the bottom of the confining unit above the high water table at the location being evaluated.

L = minimum thickness of the confining unit above the high water table at the location being evaluated.

The potential leakage shall be evaluated at those points where leakage could reasonably be expected, including the location of minimum thickness of the confining unit, the lowest elevation of the site and such other locations as seem reasonable.

(5) Engineering plans and reports detailing how the site will be designed, constructed, and operated to protect ground and surface water resources.

(6) Proof of the applicant's ownership of the site or legal entitlement to use the site for the disposal of sludge for the term of the permit for which application is made. The applicant shall also designate who will be responsible for the long-range monitoring and outline legal and financial arrangements for this.

(7) Other information as required by the department.

c. Operating requirements for land application sites. All land application projects shall be operated in conformance with 567—Chapter 102 and the following:

(1) The general public and livestock shall not be given access to the disposal site during sludge disposal and for a minimum of two months after sludge disposal operations have ceased, unless specific permit conditions specify otherwise.

(2) Land application sites shall have the pH of the surface horizon or plow layer adjusted to and maintained above 6.5, unless specific permit conditions specify otherwise.

(3) Land application sites shall not be used for sludge disposal during or immediately preceding expected rains or other occasions when runoff may result (unless subsurface injection methods are utilized); high groundwater conditions; or flooding.

(4) Land application sites shall not be used for sludge disposal when frozen or snow covered unless special precautions are taken to avoid runoff.

(5) As required by the department, groundwater monitoring wells and surface monitoring points shall be installed and a monitoring program implemented. Samples must be analyzed by a laboratory which is equipped and competent to perform the tests required by the department. The results shall be forwarded to the department on a stipulated schedule.

(6) In the event significant leachate is detected, the department shall be so notified, and the permit holder shall submit a plan for controlling and treating the leachate. Upon approval of the plan by the department, it shall be immediately implemented.

(7) Sampling and analyses of the sludge shall be performed and submitted to the department according to the schedule stipulated in the permit. Analyses shall include tests as required to confirm the constituents of the sludge.

(8) Records of the site usage shall be maintained, shall be submitted to the department on a stipulated schedule and shall include: date of use; application area; application rate; quantity of sludge applied; method and timeliness of incorporation; chemical analyses of sludge being applied; and loading rates of significant components of sludge as identified in the analyses of 121.7(1)“a”(12).

(9) Prior to completion of a site, or suspension of operations at a site, the department shall be notified in writing. As required by the department, engineering plans and reports shall be submitted detailing deviations, if any, from the permitted final site conditions. An inspection shall be made by the department before abandonment of the site.

(10) Following closing of the site, any monitoring program in effect shall be continued until the integrity of the site is confirmed and any corrective measures which may be necessary are implemented. This shall be detailed in annual reports submitted to the department for the duration of the monitoring program.

(11) A copy of the plans and reports, as amended or revised along with pertinent operations data, for any completed site shall be filed with the county recorder and the location of the filled area shall be recorded for abstract of title purposes. The recording may be made by affidavit.

d. Additional operating requirements for land application. If site conditions, waste constituents, or proposed operating procedures warrant, the department may require any of the following:

(1) Telephone or other adequate communications facilities be available on the site;

(2) Sanitary facilities, personnel washing facilities and potable water be available within a shelter on the site;

(3) The site be fenced to control access and a gate be provided at the entrance to the site and kept locked when an attendant operator is not on duty;

(4) A copy of the permit, engineering plans, and specifications be kept at the site at all times;

(5) Sites not open to the public have a permanent sign posted at the site entrance specifying: name of the operation; the site permit number; that the site is not open to the public; the owner's name and telephone number.

121.7(2) Waste pesticides. Waste pesticides may be land applied:

a. If a determination is made by the department that the disposal method is the best available disposal methodology;

b. If the applicant submits an accepted permit plan. To be accepted all applications for a permit shall include:

(1) The name, address and telephone number of the owner of site where project will be located, permit applicant, official responsible for operation of project, and design engineer, if any.

If the waste generator is not the one seeking the permit then the waste generator and a responsible official of the waste generator shall also be listed.

(2) A legal description of the site.

(3) A map or aerial photograph locating the boundaries of the site and identifying, north or other principal compass points, haul routes to and from the site with any special load limits or other restrictions which may apply, land use, homes and buildings within one-half mile, and section lines or other legal boundaries.

NOTE: Copies of current soil maps are satisfactory for this required function.

(4) A complete description of the waste including: brands, active ingredients, solvents and carriers, the concentrations and quantities thereof, original use made of the product, the date of use, duration and conditions of storage and any other information which may relate to the effects to be expected from the waste. The description of the waste shall include laboratory analysis as required by the department.

(5) The rate at which the product would normally be applied to the site given specified cropping intentions, soil types, moisture levels, soil pH, organic matter present, previous pesticide applications and any other relevant information.

(6) The rate at which the waste is to be applied to the site along with the reason for any discrepancy from normal product application rates as described in (5), the impacts to be expected and such information as necessary to show that adverse impacts will not be significant.

(7) A description of the methods to be used in disposing of the waste including any special provisions needed to ensure intended application rates.

(8) A description of methods to be used to avoid migration of the waste off the site including control of airborne drift, leaching and transportation by erosion.

(9) Other information as required by the department.

c. Operating requirements.

(1) Records detailing the waste and the proposed and actual application rates (along with any other information required by the department) shall be maintained for a period (and submitted to the department on a schedule) specified by the department.

(2) The department shall be informed immediately of any divergence from the plan, the details of that divergence and the impacts to be expected.

(3) Other requirements of the department as specified in special provisions of the permit.

121.7(3) Other wastes. Specific criteria for the permitting of the land application of waste not otherwise specified in this rule will be developed in the future. Until promulgated, the criteria for the permitting of land application in 121.7(1) shall be used.

¹ On a dry weight basis.

567—121.8(455B,455D) Financial assurance requirements for land application of wastes. The holder of a sanitary disposal project permit for the land application of solid wastes that has received authorization to temporarily store waste at the application site(s) must obtain and submit a financial assurance instrument to the department in accordance with this rule. The financial assurance instrument shall provide monetary funds for the purpose of properly disposing of or having a third party land apply any stored solid wastes due to the permit holder's failure to properly land apply wastes in accordance with rule 121.7(455B) and the applicable permit provisions.

121.8(1) No permit without financial assurance. The department shall not issue or renew a permit to an owner or operator until a financial assurance instrument has been submitted to and approved by the department.

121.8(2) Proof of compliance. Proof of the establishment of the financial assurance instrument and compliance with this rule, including a current closure cost estimate, shall be submitted by July 1, 2008, or at the time of application for a permit to land apply solid wastes. The owner or operator must provide

continuous coverage for closure and submit proof of compliance, including an updated closure cost estimate, with each permit renewal thereafter until released from this requirement by the department.

121.8(3) *Financial assurance amounts required.* The estimate submitted to the department must be certified by a professional engineer and account for at least the following factors determined by the department to be minimal necessary costs for closure:

- a. Third-party labor and transportation costs and total tip fees to properly dispose of all solid wastes equal to the maximum storage capacity of all approved storage areas, or
- b. Third-party labor costs to land apply all solid wastes equal to the maximum storage capacity of all approved storage areas.

121.8(4) *Acceptable financial assurance instruments.* The financial assurance instrument shall be established in an amount equal to the cost estimate prepared in accordance with subrule 121.8(3) and shall not be canceled, revoked, disbursed, released, or allowed to terminate without the approval of the department. Financial assurance may be provided by cash in the form of a secured trust fund or local government dedicated fund, surety bond, letter of credit, or corporate or local government guarantee as follows:

a. *Secured trust fund.* The owner or operator or entity serving as a guarantor may demonstrate financial assurance for closure by establishing a secured trust fund that conforms to the requirements of this paragraph.

(1) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The fund shall be restricted for the sole purpose of funding closure activities at the land application site(s), and a copy of the trust agreement must be submitted to the department and placed in the permit holder's official files.

(2) A secured trust fund shall name the department of natural resources as the entity authorized to draw funds from the trust, subject to proper notification to the trust officer of failure by the permittee to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) Moneys in the fund shall not be assigned for the benefit of creditors with the exception of the state.

(4) Moneys in the fund shall not be used to pay any final judgment against a permit holder arising out of the ownership or operation of the site during its active life or after closure.

(5) The owner or operator or another person authorized to conduct closure activities may request reimbursement from the trustee for closure expenditures as they are incurred. Requests for reimbursement shall be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure and if documentation of the justification for reimbursement has been submitted to the department for prior approval.

(6) If the balance of the trust fund exceeds the current cost estimate for closure at any time, the owner or operator may request withdrawal of the excess funds from the trustee so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

b. *Local government dedicated fund.* The owner or operator of a publicly owned entity permitted to land apply solid waste or a local government serving as a guarantor may demonstrate financial assurance for closure by establishing a dedicated fund that conforms to the requirements of this paragraph.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, resolution or order as a restricted fund to pay for closure costs arising from the operation of the land application sites.

(2) A copy of the document establishing the dedicated fund must be submitted to the department and placed in the permit holder's official files.

(3) If the balance of the dedicated fund exceeds the current cost estimate for closure at any time, the owner or operator may withdraw excess funds so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

c. *Surety bond.* A surety bond must be written by a company authorized by the commissioner of insurance to do business in the state. The surety bond shall comply with the following:

(1) The bond shall be in a form approved by the commissioner of insurance and shall be payable to the department of natural resources.

(2) The bond shall be specific to a particular land application site(s) for the purpose of funding closure in accordance with subrule 121.8(3) and removing any stockpiled solid wastes that may remain on site due to the owner's or operator's failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) The owner or operator shall provide the department with a statement from the surety with each permit application renewal, noting that the bond is paid and current for the permit period for which the owner or operator has applied for renewal.

d. Letter of credit. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(1) The owner or operator must submit to the department a copy of the letter of credit and place a copy in the permit holder's official files.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the permit holder and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the permit holder's files.

(3) The letter of credit must be irrevocable and must be issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 90 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into a secured trust fund that meets the requirements of paragraph 121.8(4) "a." If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the secured trust fund established by the owner or operator. The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

e. Corporate guarantee. An owner or operator may meet the requirements of this rule by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a "substantial business relationship" with the owner or operator.

(1) The terms of the written guarantee must provide that within 30 days of the owner's or operator's failure to perform closure of a land application site(s) covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);
2. Establish a fully funded secured trust fund as specified in paragraph 121.8(4) "a" in the name of the owner or operator (payment guarantee); or
3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following three conditions:

1. A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor's or Aaa, Aa, A, or Baa as issued by Moody's; or
2. A ratio of less than 1.5 comparing total liabilities to net worth; or
3. A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities.

(3) The tangible net worth of the guarantor must be greater than the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(4) The guarantor must have assets amounting to at least the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(5) Record-keeping and reporting requirements. The guarantor must submit the following records to the department and place a copy in the permit holder's official files:

1. A copy of the written guarantee between the owner or operator and the guarantor.
2. A letter signed by a certified public accountant and based upon a certified audit that:

- Lists all the current cost estimates covered by a guarantee including, but not limited to, cost estimates required by subrule 121.8(3); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40 CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and

- Provides evidence demonstrating that the guarantor meets the conditions of subparagraphs 121.8(4) “e”(2), (3) and (4).

3. A copy of the independent certified public accountant’s unqualified opinion of the guarantor’s financial statements for the latest completed fiscal year. In order for the guarantor to be eligible to use the guarantee, the guarantor’s financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this instrument. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the corporate guarantee, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

f. Local government guarantee. An owner or operator may demonstrate financial assurance for closure by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E.

(1) The terms of the written guarantee must provide that within 30 days of the owner’s or operator’s failure to perform closure of a land application site(s) covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);
2. Establish a fully funded secured trust fund as specified in paragraph 121.8(4) “a” in the name of the owner or operator (payment guarantee); or
3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following requirements:

1. If the guarantor has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the guarantor must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody’s, or AAA, AA, A, or BBB, as issued by Standard & Poor’s, on all such general obligation bonds; or
2. The guarantor must satisfy each of the following financial ratios based on the guarantor’s most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

(3) The guarantor must prepare its financial statements in conformity with generally accepted accounting principles or other comprehensive basis of accounting and have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa.

(4) A guarantor is not eligible to assure its obligations if:

1. The guarantor is currently in default on any outstanding general obligation bonds; or
2. The guarantor has any outstanding general obligation bonds rated lower than Baa as issued by Moody’s or BBB as issued by Standard & Poor’s; or
3. The guarantor operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or
4. The guarantor receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement. A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism; or
5. The closure costs to be assured are greater than 43 percent of the guarantor’s total annual revenue.

(5) The local government guarantor must include disclosure of the closure costs assured through the guarantee in its next annual audit report prior to the initial application of waste at the land application site(s) or prior to cancellation of an alternative financial assurance instrument, whichever is later. For the first year the guarantee is used to assure costs at a particular land application site(s), the reference may instead be placed in the guarantor's official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(6) The local government owner or operator must submit to the department the following items:

1. A copy of the written guarantee between the owner or operator and the local government serving as guarantor for the closure costs at the land application sites.

2. A copy of the guarantor's most recent annual financial audit report indicating compliance with the financial ratios required by numbered paragraph 121.8(4) "f"(2)"2," if applicable, and the requirements of subparagraphs 121.8(4) "f"(3) and (4).

3. A letter signed by the local government's chief financial officer that lists all the current cost estimates covered by the guarantor, as described in subrule 121.8(3); and that provides evidence and certifies that the local government meets the conditions of subparagraphs 121.8(4) "f"(2), (3), (4) and (5).

121.8(5) *Financial assurance cancellation and permit suspension.*

a. A financial assurance instrument may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance prior to cancellation, as specified in this rule, or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

b. A financial assurance instrument shall be continuous in nature until canceled by the financial assurance provider or until the department gives written notification to the owner, operator, and financial assurance provider that the covered site has been properly closed. The financial assurance provider shall give at least 90 days' notice in writing to the owner or operator and the department in the event of any intent to cancel the instrument.

c. Within 60 days of receipt of a written notice of cancellation of financial assurance by the financial assurance provider, the owner or operator must provide the department an alternative financial assurance instrument. If a means of continued financial assurance is not provided within that 60 days, the department shall suspend the permit.

d. The owner or operator shall perform proper closure within 30 days of the permit suspension. For the purpose of this rule, "proper closure" means completion of all items pursuant to subrule 121.8(3).

e. If the owner or operator does not properly close the site within the 30-day period allowed, the department shall file a claim with the financial assurance instrument provider to collect the amount of funds necessary to properly close the site.

f. An owner or operator who elects to terminate a permitted activity, whose renewal application has been denied, or whose permit has been suspended or revoked for cause must submit within 30 days of the termination of the permit a schedule for completing proper closure of the terminated activity. Closure completion cannot exceed 60 days from the date of termination of the permit.

g. The director may also request payment from any financial assurance provider for the purpose of completing closure when the following circumstances exist:

(1) The owner or operator is more than 15 days late in providing a schedule for closure or for meeting any date in the schedule for closure.

(2) The owner or operator declares an economic inability to comply with this rule, either by sending written notification to the director or through an action such as, but not limited to, filing for bankruptcy.

These rules are intended to implement Iowa Code sections 455B.173 and 455B.304.

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CHAPTER 122 CATHODE RAY TUBE RECYCLING

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—122.1(455D) Purpose. These rules are intended to satisfy the requirements of Iowa Code section 455D.6(5). The purpose of this chapter is to implement rules for the recycling of discarded CRTs and the disassembly and removal of toxic parts from discarded CRTs in a manner that is safe for human health and the environment.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.2(455D) Applicability and compliance. This chapter applies to discarded CRTs that are collected for recycling and to CRT glass processed for recycling. This chapter does not apply to CRTs collected for disposal.

122.2(1) This chapter applies to facilities and short-term CRT collection events that perform CRT recycling functions including but not limited to the collection, demanufacturing, and processing of discarded CRTs.

122.2(2) This chapter does not apply to CRT reuse activities, CRT service and repair activities or CRT refurbishing activities that do not otherwise qualify as CRT recycling.

122.2(3) The issuance of a permit or registration by the department in no way relieves the applicant of the responsibility of complying with all other local, state, or federal statutes, ordinances, and rules or other requirements applicable to the construction, operation, and closure of a CRT collection facility or CRT recycling facility.

122.2(4) All discarded CRTs collected for recycling, including those generated by a household, once collected by a CRT collection facility or CRT recycling facility, shall be managed in accordance with 40 CFR 261.39 and this chapter. If there is a conflict, the more stringent regulation applies.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.3(455D) Definitions. For the purposes of this chapter, the definitions found in 567—Chapter 100 shall apply.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.4(455D) Short-term CRT collection events. All short-term CRT collection events shall be conducted in a manner that complies with this rule. Short-term CRT collection event organizers are not required to register the event as a CRT collection facility.

122.4(1) Within one week of collection, all discarded CRTs and CRT glass shall be transported to a properly permitted CRT recycling facility or registered CRT collection facility.

122.4(2) During the period between collection and transport, all broken CRTs and CRT glass shall be stored in one of the following ways:

- a. In a fully enclosed building with a roof, floor and walls, or
- b. In a container that is constructed, filled and closed to minimize releases to the environment of CRT glass (including fine solid materials).

122.4(3) During the period between collection and transport, intact discarded CRTs shall be stored in one of the following ways:

- a. In a fully enclosed building with a roof, floor and walls, or
- b. In a secure container (e.g., package or vehicle) that is constructed and maintained to minimize breakage of electronic waste and to prevent releases of hazardous materials to the environment.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.5(455D) Registration for CRT collection facilities. A CRT collection facility shall register with the department using Form 542-0060.

122.5(1) The registration application shall include proof of the applicant's ownership of the property or legal entitlement to use the property for CRT collection. If the facility is leased, the application shall also include a statement, signed by the property owner, stating that the property owner is aware that CRT

collection is taking place at the site and that the property owner may be held liable for wastes abandoned at the property.

122.5(2) CRT collection facilities registered prior to July 20, 2022, shall submit their first registration renewal by February 1 of the year following the first full calendar year after July 20, 2022. The registration will expire on March 1 of the same year if the renewal is not received, is incomplete, or shows noncompliance with this chapter. In addition to the reporting requirements in rule 567—122.11(455D), the first registration renewal shall include proof of the facility's ownership of the property or legal entitlement to use the property for CRT collection. If the facility is leased, the application shall also include a statement, signed by the property owner, stating that the property owner is aware that CRT collection is taking place at the site and that the property owner may be held liable for wastes abandoned at the site.

122.5(3) Registration will expire March 1 of each year if renewal has not been made and approved.

122.5(4) Annual registration renewal occurs by complying with the reporting requirements in rule 567—122.11(455D). Once a complete report is received and confirmed complete in writing by the department, the facility's registration will be renewed until March 1 of the following year.

122.5(5) The department may deny or revoke CRT collection facility registration if one or more of the following is determined by the department:

- a. The registration application is incomplete.
- b. There is a violation of a requirement of this chapter, including but not limited to failing to submit accurate and timely reports as required in rule 567—122.11(455D).
- c. There is or was a misrepresentation made in obtaining a registration or registration renewal under this chapter.
- d. The registrant fails to correct a condition as agreed to in an agreed order with the department or fails to come into compliance with this chapter within the time frame established in the agreed order.
- e. The permittee has lost legal entitlement to use the property identified in the registration.
- f. Upon notice to the department by the permittee that the permittee no longer wishes to retain the registration for future operation.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.6(455D) CRT recycling facility permits.

122.6(1) *Permit required.* A CRT recycling facility shall not be operated without a permit from the department.

122.6(2) *Notification of change in status.* CRT recycling facilities must notify the department 30 days prior to any significant change of status of the operation, including any change in the ownership or operation of the facility or location of the facility.

122.6(3) *Denial or revocation of permit.* The department may deny, revoke, or limit the length of a permit if one or more of the following is determined:

- a. The department has revoked the applicant's previous permit under this chapter.
- b. The application form is incomplete.
- c. There is a violation of a requirement of this chapter or a condition of the permit.
- d. There is a failure to disclose all relevant facts in obtaining a permit under this chapter.
- e. There is a misrepresentation made in obtaining a permit under this chapter.
- f. There is a misrepresentation in the annual report required in rule 567—122.11(455D).
- g. The permittee fails to meet the requirements for a permit.
- h. The permittee fails to correct a condition as agreed to in an agreed order with the department or fails to come into compliance with the permit or this chapter within the time frame established in the agreed order.
- i. The permittee has lost legal entitlement to use the property identified in the permit.
- j. Upon notice to the department by the permittee that the permittee no longer wishes to retain the permit for future operation.

122.6(4) *Permit conditions.* The department may place conditions on any permit deemed necessary by the department to ensure compliance with this chapter and to protect human health and the environment.

122.6(5) *Effect of revocation.* If a permit held by any public or private agency is revoked by the director, then no new permit shall be issued to that agency for that CRT recycling facility for a period of

one year from the date of revocation. Such revocation shall not prohibit the issuance of a permit for the facility to another public or private agency.

122.6(6) *Duration and renewal of permits.* A permit shall be issued for the life of the facility, unless otherwise authorized by the department.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.7(455D) CRT recycling facility permit application requirements.

122.7(1) A CRT recycling facility permit applicant shall submit the following permit application information to the department:

a. The name, address, and telephone number of:

- (1) The owner of the site where the project will be located.
- (2) The permit applicant.
- (3) The individual responsible for the operation of the project.
- (4) The agency to be served by the project, if any.
- (5) The responsible official of the agency to be served, if any.

b. The physical location of the facility, and any collection sites if separate from the main facility.

c. Proof of the applicant's ownership of the property or legal entitlement to use the property for CRT recycling. If the facility is leased, the applicant shall submit a signed statement from the property owner stating that the property owner is aware that CRT collection or recycling is taking place at the property and that the property owner may be held liable for wastes left at the property.

d. Documentation that the facility meets local zoning requirements.

e. A brief description of the facility and the CRT processing that will take place.

122.7(2) If the department finds the permit application information to be incomplete, it shall notify the applicant of that fact and of the specific deficiencies. If the deficiencies are not corrected within 30 days, the department may deny the application. The applicant may reapply without prejudice.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.8(455D) Discarded CRT management requirements. CRT collection facilities and CRT recycling facilities shall manage all discarded CRTs in accordance with 40 CFR 261.39 and 40 CFR 260.43.

122.8(1) Discarded CRTs and processed CRT glass shall not be speculatively accumulated pursuant to 40 CFR 261.1(c)(8).

122.8(2) Broken CRTs and processed CRT glass shall be stored either:

- a.* In a building with a roof, floor and walls, or
- b.* In a container (e.g., a package or a vehicle) that is constructed, filled, and closed to minimize releases to the environment of CRT glass (including fine solid materials).

122.8(3) Intact discarded CRTs shall be stored either:

- a.* In a building with a roof, floor, and walls, or
- b.* In a secure container (e.g., package or vehicle) that is constructed and maintained to minimize breakage of electronic waste and to prevent releases of hazardous materials to the environment.

122.8(4) Each container of broken CRTs or CRT glass must be labeled or marked clearly with one of the following phrases: "Used cathode ray tube(s)-contains leaded glass. Do not mix with other glass materials" or "Leaded glass from televisions or computers. Do not mix with other glass materials." Each container shall also be labeled with the first date that material began to be accumulated in the container.

122.8(5) Each container or pallet of intact discarded CRTs shall be labeled with the first date that any material began to accumulate in the container or on the pallet.

122.8(6) Broken CRTs must be transported in a container meeting the requirements of subrule 122.8(2).

122.8(7) CRT collection facilities or CRT recycling facilities that export broken CRTs shall also comply with 40 CFR 261.39(a)(5).

122.8(8) All processing of CRTs shall be processed according to 40 CFR 261.39(b).

122.8(9) Failure to comply with this rule and the CFR sections referenced is grounds for termination of any permit or registration authorized by this rule.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.9(455D) Record-keeping requirements for CRT collection facilities.

122.9(1) All CRT collection facilities shall maintain the following records on a calendar-year basis:

- a. The name and address of the facility receiving a shipment that left the CRT collection facility, and contact information for the receiving facility.
- b. The type of service the receiving facility will provide to the CRT collection facility.
- c. A description of the shipment contents.
- d. All bills of lading.
- e. All hazardous waste manifests.

122.9(2) Records must be maintained at the facility, must be submitted to the department upon request, and may be destroyed after three years.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.10(455D) Record-keeping requirements for CRT recycling facilities.

122.10(1) All CRT recycling facilities shall maintain the following records on a calendar-year basis:

- a. The total aggregate weight and receipt date of each shipment of discarded CRTs received from businesses, institutions, CRT collection facilities, short-term CRT collection events, and other permitted CRT recycling facilities.
- b. The name, address, and contact information for shipments reported pursuant to subrule 122.11(1).
- c. The total aggregate weight and date of each shipment leaving the CRT recycling facility.
- d. The name and address of the facility receiving a shipment that left the CRT recycling facility, contact information for the receiving facility and a description of the shipment contents including all applicable bills of lading.
- e. The type of service the receiving facility will provide to the CRT recycling facility.
- f. All hazardous waste manifests.

122.10(2) Records must be maintained at the facility, must be available for review by the department on demand, and may be destroyed after three years.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.11(455D) Reporting requirements. CRT collection facilities and CRT recycling facilities shall report the following information on Form 542-8131, provided by the department, to the department by February 1 of each year for the previous calendar year.

122.11(1) The amount, either by weight or volume, of discarded CRTs and processed CRT glass on site on January 1.

122.11(2) The amount, either by weight or by volume, of discarded CRTs and CRT glass recycled or transferred for recycling during the calendar year.

122.11(3) The amount, either by weight or by volume, of discarded CRTs and processed CRT glass on site on December 31.

122.11(4) Indication of whether the CRTs received over the past year were generated by households, businesses, or both households and businesses.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

567—122.12(455D) Closure requirements for CRT recycling facilities. A CRT recycling facility and CRT collection facility shall submit to the department written notice of intent to permanently close at least 60 days before closure. Closure shall not be official until the department field office with jurisdiction over the facility has given written certification of the proper disposal of all solid waste, discarded CRTs, and materials derived from discarded CRTs at the site.

[ARC 6352C, IAB 6/15/22, effective 7/20/22]

These rules are intended to implement Iowa Code section 455D.6(5).

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CHAPTER 123
REGIONAL COLLECTION CENTERS AND SATELLITE FACILITIES

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—123.1(455F) Purpose. The purpose of this chapter is to implement operating license requirements for regional collection centers and satellite facilities which provide for the collection and proper disposal of household hazardous materials (HHMs) and hazardous waste from very small quantity generators (VSQGs).

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—123.2(455B,455D,455F) Definitions. For the purposes of this chapter, these terms shall have the following meanings:

“*Department*” means the Iowa department of natural resources.

“*Hazardous waste*” or “*HW*” means the same as defined in Iowa Code section 455B.411.

“*Hazardous waste contractor*” means a private company that provides proper management (e.g., disposal, recycling) of hazardous waste. “Hazardous waste contractor” does not include regional collection centers.

“*Household hazardous material*” or “*HHM*” means the same as defined in Iowa Code section 455F.1.

“*Household hazardous waste*” or “*HHW*” means an HHM as defined in Iowa Code section 455F.1 which has served its intended use and is designated for disposal.

“*RCC mobile unit*” or “*mobile unit*” means a truck or trailer owned and operated under the direction of a regional collection center that can be moved to different sites within a region. A mobile unit is used to perform collection events and to transport collected materials to an RCC for sorting and consolidation.

“*Regional collection center*” or “*RCC*” means the same as defined in Iowa Code section 455F.1.

“*Satellite facility*” means the same as defined in Iowa Code section 455F.1.

“*Very small quantity generator*” or “*VSQG*” means a generator that generates less than or equal to the following amounts in a calendar month:

1. 100 kilograms (220 lbs) of non-acute hazardous waste;
2. 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e);
3. 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—123.3(455F) Regional collection center license and license renewal. A license or license renewal will be issued under the following conditions:

123.3(1) License.

a. An RCC shall not operate without a license issued by the department. RCCs in existence prior to January 14, 2019, will automatically be issued an operating license.

b. A satellite facility shall not be required to obtain a license.

123.3(2) Compliance. An RCC and satellite facility must be in compliance with current local, state and federal statutes and regulations regarding the management, storage, transportation and disposition of HHM, HHW and HW from VSQGs.

123.3(3) Construction. An RCC shall not be constructed without review of the site plan and written approval of the site plan by the department. The approved plans and specifications shall constitute a condition of the initial operating license.

123.3(4) Inspection prior to commencing initial operation. The department shall be notified before an RCC or satellite facility begins operations. No HHM or HW from VSQGs shall be accepted by the RCC or satellite facility until the facility has been inspected and approved by the department.

123.3(5) Duration and renewal of license. The initial license issued may be renewed for a period of five years. If the license applicant is a private agency under contract with a local government, the license shall not extend past the end date of the contract. An entity designated as an environmental management

system pursuant to Iowa Code section 455J.7 may opt out of the license renewal requirement provided the entity is in compliance with 123.3(2) and there has been no change in the provisions of the current license. Any change in the provisions of the current license requires department notification as described in 123.3(7).

123.3(6) *Request and approval of initial license or license renewal.* A new RCC shall file a request for a license on a form provided by the department. An established RCC shall file a request for license renewal 45 calendar days prior to the expiration of the current license, via hard-copy request or electronically, on a form provided by the department. A renewal shall be issued within 30 business days if the facility is in compliance with Iowa Code chapters 455B, 455D and 455F and the conditions of the current license.

123.3(7) *License modification.* An RCC shall request to modify its license by notifying the department of changes to any provision of its license via hard-copy or electronic correspondence. An RCC shall notify the department within 30 calendar days of a planned change to the provisions of its license and within 7 calendar days of an unplanned change to the provisions of its license. Upon approval of a request to modify an RCC license, the department will issue a license modification within 14 business days of approving the license modification request.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—123.4(455F) Site, structure, storage, and staff qualifications. RCCs, satellite facilities and mobile units shall each meet the following criteria.

123.4(1) *Siting.* A site selected for an RCC, satellite facility or mobile unit shall meet the following criteria:

a. An RCC, satellite facility or mobile unit used for the collection of VSQG waste and HHMs shall be sited on public property or on private property if an agreement exists that guarantees public access. Documentation of the private property agreement for RCCs and satellite facilities shall be provided to the department upon request or upon application and renewal for license.

b. The site shall provide adequate secondary containment in case of a spill or other possible on-site contamination.

c. The site shall meet all applicable zoning requirements.

d. The site shall be adequately sized to accommodate all structures, units and activities that will take place on the site.

e. RCCs and satellite facilities shall each have adequate security to prevent unauthorized access. Adequate security may include, but is not limited to, a fence and locking gate.

f. All mobile units and the containers used to package collected materials shall comply with applicable Iowa department of transportation rules and guidelines. At each mobile unit site, the mobile unit shall rest on a pad of a chemical-resistant, impervious, smooth material that provides secondary containment in case of a spill. A temporary surface created by securing an impervious tarp to the unloading/receiving area will meet the requirements of an impervious surface. A plan for conducting mobile unit collection events must consider the possibility of inclement weather. The plan must ensure that collected HHM and VSQG hazardous waste have protection from the elements and must minimize the risk of environmental contamination.

123.4(2) *Structures.* RCC or satellite facility structures shall each meet the following criteria:

a. All structures shall be sized to adequately accommodate the collection, sorting, bulking and lab packing, packaging for disposal, and temporary storage of HHM and HW from VSQGs.

b. All permanent structures shall meet the requirements of applicable fire codes and building codes.

c. RCC structures and satellite facility structures shall each be designed to prevent run-on entering from adjacent areas.

d. All receiving areas shall have a storage capacity of at least one day's processing capacity.

e. All receiving, sorting, bulking, transfer and storage area surfaces shall be constructed of a chemical-resistant, impervious, smooth material so designed to be easily cleaned, nonreactive with the waste, and with proper drainage, in the form of sloped flooring, plastic-lined pits or concrete sumps, according to applicable codes. Areas used for the receiving, bulking, transferring, lab packing and storing

of HHM, HHW and VSQG hazardous waste shall be provided with secondary containment and shall be protected from exposure to the weather.

123.4(3) *Storage.* All full containers of HHW and hazardous wastes from VSQGs must be stored in a building designed in accordance with Group H occupancy requirements and local, state and federal fire codes. It is required that HW or HHW accumulated for disposal not be accumulated on site for more than 180 days. Once the capacity limit of a collection site or time limit is reached, all waste collected shall be collected by a licensed hazardous waste contractor.

123.4(4) *Staff qualifications.* Prior to handling any HHM or HW, RCC and satellite facility staff shall each have received applicable training conducted by trainers who meet Occupational Safety and Health Administration (OSHA) instructor qualification standards. Training shall include but is not limited to the following:

- a. OSHA 24-hour health and safety training as described in 29 CFR 1910.120.
- b. Annual 8-hour refresher training as described in 29 CFR 1910.120.
- c. Hazardous materials chemistry.
- d. Personnel and site safety.
- e. Proper lab packing techniques.
- f. Proper transporting of hazardous materials.
- g. When applicable, U.S. Department of Transportation hazardous materials training for the operation of a mobile unit used in the collection and transportation of HHM and HW from VSQGs.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—123.5(455F) Operations plans and procedures.

123.5(1) RCCs and satellite facilities must each prepare and maintain on site a current plan of operations.

123.5(2) Operations plan. The operations plan shall include, at a minimum, the following information:

- a. Schedule of operations, including hours of operation for RCCs or satellite facilities.
- b. Site selection procedures for mobile unit collections.
- c. Standard receiving procedures for HHM and VSQG HW.
- d. Procedures for managing unknown materials.
- e. Procedures for handling open or leaking containers.
- f. Procedures for managing large quantities of wastes.
- g. Recycling and reuse procedures for usable materials.
- h. Disposal of nonhazardous waste.
- i. Personal protection equipment (PPE).
- j. Initial training requirements and continuing education of staff.
- k. An emergency response plan, such as the facility's response to spills, fires or weather-related events.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—123.6(455F) Closure notification. RCCs and satellite facilities shall each notify the department via hard-copy or electronic correspondence at least 60 calendar days prior to ceasing operations.

123.6(1) The notification shall include, at a minimum, the following information:

- a. A description of how the RCC or satellite facility will notify the public within its service area that the RCC or satellite facility is closing and how HHM and HW from VSQGs should be managed after closure of the facility.
- b. A description of how all HHM, HHW and HW from VSQGs will be removed from the RCC or satellite facility and properly managed within 60 calendar days of the RCC's or satellite facility's ceasing operations.
- c. A description of how final waste disposal costs will be paid.

123.6(2) After removal of HHW and VSQG HW, a final inspection shall be conducted by department staff.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—123.7(455F) Regional collection center reporting requirements. On a form supplied by the department, each RCC shall submit to the department a correctly completed RCC semiannual report. The report shall include, but not be limited to, the pounds of materials managed through a reuse program, by hazardous waste contractors, and by nonhazardous waste contractors. All hazardous waste contractor invoices shall be attached. Such invoices shall depict hazardous material types, net weight of hazardous materials, and associated collection and disposal costs charged by the hazardous waste contractor to the RCC. RCC semiannual reports shall be submitted by September 15 for the portion of the current calendar year January 1 through June 30, and by March 15 for the portion of the previous calendar year July 1 through December 31.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

These rules are intended to implement Iowa Code chapter 455F.

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CHAPTERS 124 to 129
Reserved

TITLE IX
SPILLS AND HAZARDOUS CONDITIONS

CHAPTER 130
Reserved

CHAPTER 131
NOTIFICATION OF HAZARDOUS CONDITIONS

[Prior to 7/1/83, DEQ Ch 41]
[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—131.1(455B) Definitions. For purposes of this chapter:

“*Corrosive*” means causing or producing visible destruction or irreversible alterations in human skin tissue at the site of contact, or in the case of leakage of a hazardous substance from its packaging, causing or producing a severe destruction or erosion of other materials through chemical processes.

“*Department*” means the department of natural resources.

“*Hazardous condition*” means any situation involving the actual, imminent or probable spillage, leakage, or release of a hazardous substance onto the land, into a water of the state or into the atmosphere which, because of the quantity, strength and toxicity of the hazardous substance, its mobility in the environment and its persistence, creates an immediate or potential danger to the public health or safety or to the environment.

“*Hazardous substance*” means any substance or mixture of substances that presents a danger to the public health or safety and includes, but is not limited to, a substance that is toxic, corrosive, or flammable, or that is an irritant or that, in confinement, generates pressure through decomposition, heat, or other means. The following are examples of substances which, in sufficient quantity, may be hazardous: acids; alkalis; explosives; fertilizers; heavy metals such as chromium, arsenic, mercury, lead and cadmium; industrial chemicals; paint thinners; paints; pesticides; petroleum products; poisons; radioactive materials; sludges; and organic solvents. “Hazardous substances” may include any hazardous waste identified or listed by the administrator of the United States Environmental Protection Agency under the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976, or any toxic pollutant listed under Section 307 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous substance designated under Section 311 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous material designated by the secretary of transportation under the Hazardous Materials Transportation Act (49 CFR §172.101).

“*Irritant*” means a substance causing or producing dangerous or intensely irritating fumes upon contact with fire or when exposed to air.

“*Toxic*” means causing or producing a dangerous physiological, anatomic or biochemical change in a biological system.

567—131.2(455B) Report of hazardous conditions. Any person manufacturing, storing, handling, transporting, or disposing of a hazardous substance shall notify the department at (515)281-8694 and the local police department or the office of the sheriff of the affected county of the occurrence of a hazardous condition as soon as possible but not later than six hours after the onset of the hazardous condition or discovery of the hazardous condition. A sheriff or police chief who has been notified of a hazardous condition shall immediately notify the department. Reports made pursuant to this rule shall be confirmed in writing as provided in 131.2(2).

131.2(1) Verbal report. The verbal report of such a hazardous condition should provide information on as many items listed in 131.2(2) as available data will allow.

131.2(2) Written report. The written report of such a hazardous condition shall be submitted to the department within 30 days and contain the following information:

- a. The exact location of the hazardous condition.
- b. The time and date of onset or discovery of the hazardous condition.
- c. The name of the material, the manufacturer’s name and the volume of each material involved in the hazardous condition in addition to contaminants within the material if they by themselves could cause a hazardous condition.
- d. The medium (land, water or air) in which the hazardous condition occurred or exists.
- e. The name, address and telephone number of the party responsible for the hazardous condition.

- f.* The time and date of the verbal report to the department of the hazardous condition.
- g.* The weather conditions at the time of the hazardous condition onset or discovery.
- h.* The name, mailing address and telephone number of the person reporting the hazardous condition.
- i.* The name and telephone number of the person closest to the scene of the hazardous condition who can be contacted for further information and action.
- j.* Any other information, such as the circumstances leading to the hazardous condition, visible effects and containment measures taken that may assist in proper evaluation by the department.

131.2(3) *Reporting of subsequent findings.* All subsequent finding and laboratory results should be reported and submitted in writing to the department as soon as they become available.

These rules are intended to implement Iowa Code section 455B.115.

[Filed 2/3/78, Notice 10/5/77—published 2/22/78, effective 3/29/78]

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CHAPTER 132
TRANSPORTATION OF RADIOACTIVE MATERIALS IN IOWA
[Prior to 7/1/83, DEQ Ch 42]
[Prior to 12/3/86, Water, Air and Waste Management[900]]
Rescinded IAB 3/20/02, effective 4/24/02

CHAPTER 133
RULES FOR DETERMINING
CLEANUP ACTIONS AND RESPONSIBLE PARTIES

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—133.1(455B,455E) Scope.

133.1(1) These rules establish the procedures and criteria the department will use to determine the parties responsible and cleanup actions necessary to meet the goals of the state pertaining to the protection of the groundwater. These rules pertain to the cleanup of groundwater itself and soils and surface water where groundwater may be impacted. They may also be used as guidelines in other environmental protection activities authorized by Iowa Code chapter 455B. Where specific federal or state programs or funds exist to address situations that are also governed by these rules, the rules and standards of the specific programs or funds will be integrated and utilized to achieve an equitable, expeditious and environmentally sound resolution of the particular contamination situation. These rules apply specifically to point source contamination only.

133.1(2) These rules apply specifically to cleanup actions required to abate, prevent or remediate a hazardous condition, the presence of a hazardous substance or waste, the release of a regulated substance, or the discharge of a pollutant as those terms are defined in Iowa Code chapter 455B.

133.1(3) These rules shall not limit the department's authority to require remedial or preventative action, or to take remedial or preventative action, as necessary to protect the public health, the environment, or the quality of life. The department will make its evaluation on a case-by-case basis, considering site characteristics, and where more than one contaminant is present or there is no established action level, will consider the toxicity, mobility and persistence of contaminants involved. The evaluation may include the potential synergistic, antagonistic, or cumulative effects of the contaminants involved in a particular case.

133.1(4) Persons subject to these rules retain all applicable appeal rights provided in Iowa Code chapter 455B.

133.1(5) This chapter is applicable to releases of petroleum from underground storage tanks subject to regulation under Iowa Code chapter 455B, Division IV, Part 8, to the extent they are not inconsistent with the corrective action rules in 567—135.6(455B) to 567—135.17(455B). This subrule is not intended to limit the authority of the department to establish liability against responsible parties other than owners and operators as defined in Iowa Code sections 455B.471(5) and 455B.471(6).

567—133.2(455B,455E) Definitions.

"Action level" means, for any contaminant, the HAL, if one exists; if there is no HAL, then the NRL, if one exists; if there is no HAL or NRL, then the MCL. If there is no HAL, NRL, or MCL, an action level may be established by the department based on current technical literature and recommended guidelines of EPA and recognized experts, on a case-by-case basis.

"Active cleanup" means removal, treatment, or isolation of a contaminant from groundwater or associated environment through the directed efforts of humans.

"AFS" means the Special Publication 30, "Investigation and Monetary Values of Fish and Freshwater Mussel Kills," published by the American Fisheries Society.

"Aggravated risk" means a contamination situation which presents a potentially catastrophic or an immediate and substantial risk of harm to human life or health or to the environment. Examples include exposure of humans, animals or the food chain to acutely toxic substances, contamination of a drinking water supply, threat of fire or explosion, or similar situations.

"Air or air resources" means those naturally occurring constituents of the atmosphere, including those gases essential for human, plant, and animal life.

"Background" means groundwater quality unaffected by human activities, and generally shall be determined by historical data of the geological services bureau or other government agencies for the type of aquifer or location involved in a given case. If available data is not adequate, background may be

established by groundwater samples upgradient of a source or potential source of a substance which is detected in or has a reasonable probability of entering the groundwater.

“Best available technology” means those processes which most effectively remove, treat, or isolate contaminants from groundwater or associated environment, as determined through professional judgment considering actual equipment or techniques currently in use, published technical articles and research results, engineering reference materials, consultation with known experts in the field, and guidelines or rules of other regulatory agencies.

“Best management practices” means maintenance procedures, schedules of activities, prohibition of practices, and other management practices, or a combination thereof, which, after problem assessment and evaluation of alternatives is determined to be the most effective means of preventing or abating contamination at a location.

“Biological resources” means fish, wildlife and other biota belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the state of Iowa, the United States, or local government. Fish and wildlife include freshwater aquatic and terrestrial species; game, nongame, and commercial species; and threatened and endangered species. Other biota encompass shellfish, terrestrial and aquatic plants, and other living organisms not otherwise listed in this definition.

“Contaminant” means any chemical, ion, radionuclide, synthetic organic compound, microorganism, waste or other substance which does not occur naturally in groundwater or which occurs naturally at a lower concentration, and includes all hazardous substances as defined in 42 U.S.C. 9601, and any element, compound, mixture, solution or substance designated pursuant to 40 CFR 302.4 as of September 13, 1988.

“Damages” means the costs of restoration, rehabilitation, and replacement of resources, or acquisition of equivalent resources, as determined in accordance with this chapter; the reasonable and necessary costs of the assessment, to include the cost of performing the assessment and administrative costs and expenses necessary for, and incidental to, the assessment; lost services to the public; and, in the event the damages claim is not resolved within six months after the incident leading to the damages, interest at the current rate published in the Iowa Administrative Bulletin by the department of revenue pursuant to Iowa Code section 421.7. The interest amount shall be computed from the date the amount of the claim is confirmed by a final ruling of the commission in a contested case decision.

“Drinking water supply” means any raw or finished water source that is or may be used by a public water system, as defined in Iowa Code section 455B.171, or as drinking water by one or more individuals.

“Geologic resources” means those elements of Earth’s crust such as soils, sediments, rocks, and minerals, including petroleum and natural gas, that are not included in the definitions of groundwater and surface water resources.

“Groundwater” means any water of the state as defined in Iowa Code section 455B.171 which occurs beneath the surface of the earth in a saturated geologic formation of rock or soil.

“Groundwater resources” means water in a saturated zone or stratum beneath the surface of land or water and the rocks or sediments through which groundwater moves. It includes groundwater resources that meet the definition of drinking water supplies.

“HAL” means a lifetime health advisory level for a contaminant, established by the United States Environmental Protection Agency (EPA). Health advisories represent the concentration of a single contaminant, based on current toxicological information, in drinking water which is not expected to cause adverse health effects over lifetime exposure.

“Hazardous substance” means a hazardous substance as defined in Iowa Code section 455B.381.

“MCL” means the enforceable maximum contaminant level established by the EPA pursuant to the Safe Drinking Water Act.

“Natural resources” or *“resources”* means land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States, the state of Iowa, or local government. These natural resources have been categorized into the following five groups: surface water resources, groundwater resources, air resources, geologic resources, and biological resources.

“NRL” means the negligible risk level for carcinogens established by the EPA, which is an estimate of one additional cancer case per million people exposed over a lifetime to the contaminant (1×10^{-6}).

“Passive cleanup” means the removal or treatment of a contaminant in groundwater, or associated environment, through management practices or the construction of barriers, trenches and other similar facilities for prevention of contamination, as well as the use of natural processes such as groundwater recharge, natural decay and chemical or biological decomposition.

“Point source” means any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or any site or area where a contaminant has been deposited, stored, disposed of, or placed, or otherwise come to be located.

“Preventative” or *“prevention”* refers, in the context of these rules, to actions or efforts to minimize or stop further contamination in a situation where contamination already exists or is imminent.

“Remedial action plan” means a written report which includes all relevant information, findings, and conclusions from a site assessment, including all analytical results and identification of contaminant migration pathways; identification and evaluation of cleanup alternatives, including both active and passive measures using best available technology and best management practices; a recommended cleanup action or combination of action, including identification of expected cleanup levels consistent with the cleanup goal of 133.4(3)“b”; a monitoring network and schedule to document cleanup levels; and a proposed schedule of implementation.

“Responsible person” means any person who is legally liable for the contamination in question or who is legally responsible for abating contamination under any applicable law, including Iowa Code chapters 455B and 455E, and the common law. This may include the person causing, allowing or otherwise participating in the activities or events which cause the contamination, persons who have failed to conduct their activities so as to prevent the release of contaminants into groundwater, property owners who are obligated to abate a condition, or persons responsible for or successor to such persons.

“Significant risk” means:

1. The presence in groundwater of a contaminant in excess of an action level;
2. The presence of a contaminant in the soils, surface water, or other environment in proximity to groundwater which may reasonably be expected to contaminate the groundwater to an action level; or
3. The presence of a contaminant or contaminants in the groundwater, or in the soils, surface water or other environment in proximity of groundwater which may be expected to contaminate groundwater in quantities, concentrations, or combinations which may significantly adversely impact the public health, safety, environment, or quality of life. This criterion would normally be applied where there is no established action level or where combinations of more than one contaminant are present.

“Site assessment plan” means a written proposal for study of a contamination situation to determine the types, amounts, and sources of contaminants present, hydrogeological characteristics of the site, and the vertical and horizontal extent of contamination, with a goal of developing an adequate remedial action plan. The proposal must include: recommendations for collection of relevant historical data such as site management practices, inventory records, literature searches, photographs and personal interviews; a methodology for obtaining groundwater flow information including well placements, construction and elevation, bore logs, static groundwater table measurements, groundwater elevations, groundwater gradients (isopleth), and information on soil transmissivity, porosity and permeability; and a methodology for identifying contaminant plumes, including additional monitoring wells to identify the horizontal and vertical extent of contamination, a site plot showing the estimated configuration of contamination, and a sampling schedule and list of constituents to be analyzed. The plan development may require preliminary field investigations.

“Surface water resources” means the waters of the state, including the sediments suspended in water or lying on the bank, bed, or shoreline. This term does not include groundwater or water or sediments in ponds, lakes, or reservoirs designed for waste treatment under applicable laws regulating waste treatment.

[ARC 8470B, IAB 1/13/10, effective 2/17/10]

567—133.3(455B,455E) Documentation of contamination and source.

133.3(1) *Sampling and analytical procedures.* Unless rules for specific programs under USEPA or department authority provide otherwise, or unless other methods are approved by the department for a

specific situation, samples taken and analyses made to document contamination or cleanup levels under this chapter shall be conducted in accordance with the following:

a. Samples. “A Compendium of Superfund Field Operations Methods,” USEPA, Office of Emergency and Remedial Response, Washington, D.C. 20460 (EPA/540/P-87/001, OSWER Directive 93.55.0-14, December 1987).

b. Analyses. “Test Methods for Evaluation of Solid Waste, Physical-Chemical Methods (SW-846),” USEPA, Third Edition, November 1986, as revised through December 1988. Until the department adopts rules regarding certification of laboratories, analyses shall be conducted at a laboratory that certifies to the department that the appropriate analytical procedure is utilized, or a laboratory which has been approved under EPA’s Contract Laboratory Program. Upon adoption of rules by the department regarding certification of laboratories, all analyses shall be made at a certified laboratory. The parties, both the department and person responsible for investigating, shall have the opportunity to split samples for independent analysis, and where appropriate a sample portion shall be retained for a reasonable period of time for possible reanalysis.

133.3(2) Department determination of contamination. When the department receives or obtains evidence of groundwater contamination or the release or presence of contaminants in the environment associated with groundwater, where contamination of the groundwater may reasonably be expected, the department shall make reasonable efforts to document the source of contamination, and shall require responsible persons to take appropriate preventative, investigatory and remedial actions. Evidence of contamination may include but is not limited to the following:

- a.* Water samples indicating the presence of a contaminant at levels above background.
- b.* Soil or surface water samples indicating the presence of a contaminant at levels above background, where release to the groundwater is likely.
- c.* Known releases of contaminants into the environment in quantities and locations that could reasonably be expected to cause groundwater contamination.
- d.* Other events that the department determines could potentially cause groundwater contamination.

The amount and type of evidence necessary to document contamination or potential contamination will vary with the circumstances of each case, including the amount and type of contaminant involved, site topography and geologic conditions, and potential adverse effects. Normally, a reasonable number of water and soil samples will be taken or analyses obtained by the department. However, where a significant quantity of contaminants is known to have been released into the environment, for example from a spill, which could reach groundwater, the department is not required to collect samples.

133.3(3) Department determination of source. The department shall determine whether the contamination is or likely was caused by a particular source or sources, for example a known spill of contaminants or current or past facilities or activities in the vicinity which involved products or substances which could be a likely source. If no such person or event can be identified, the department shall make reasonable efforts to determine whether there is a relatively restricted area of more concentrated contaminants in the vicinity which is or is likely to be a source of the contamination. This subrule does not require the department to identify a specific person or persons responsible for the contamination, but to determine whether the contamination has or has likely come from a relatively defined source.

133.3(4) Determination of responsible persons. Where a source or likely source of contamination is identified, the person or persons responsible for that source or sources shall conduct necessary preventative, investigatory and remedial actions.

a. Identification. The persons responsible or potentially responsible initially shall be identified by the department through such measures as on-site observations; interviews with witnesses and local officials; review of public records, including department files; and interviews with or information obtained from potentially responsible persons. Where there may be more than one source, or the source is otherwise not conclusively identified, persons who handle or have handled materials or wastes in the vicinity of the contamination, which could be the source, shall investigate and provide information satisfactory to the department to confirm or disaffirm that their activities are a source of the contamination. Investigation by the responsible or potentially responsible person may include inspection of inventory or other records, and

soil and groundwater monitoring to better define the source. Such monitoring shall conform to the requirements of 133.4(3) “a,” provided that a full-scale assessment may not be required for this purpose.

b. Notification. The department shall notify in writing the persons determined responsible under the above procedures, and include a brief statement of the facts upon which the department concluded that they are responsible, and the actions required; provided that where immediate action is necessary, verbal notification may be given, followed up with written notification. The persons notified may provide information disputing or supplementing the information relied on by the department, which shall be considered by the department.

c. Responsible persons may be jointly and severally liable, and the department is not required to name all potentially responsible parties in directing responsive actions to contamination.

567—133.4(455B,455E) Response to contamination.

133.4(1) Prevention of further contamination. In all cases where an active source of contamination is identified, such as leaking tanks or current practices, which may be readily corrected, the source shall be removed, repaired or otherwise contained, or the contaminating practices ceased, immediately upon discovery of the source. In addition, readily accessible contaminants, for example concentrated contaminants spilled on the ground or accessible through a recovery well or system, shall be promptly removed to avoid or minimize further contamination in the groundwater.

133.4(2) Aggravated risk. Where the contamination presents an aggravated risk, the preventative, investigatory and remedial measures provided in subrules 133.4(1) and 133.4(3) shall be expedited to remove such risk. In addition, the following actions shall be taken by the responsible parties, if necessary, to protect the public health or environment:

- a. Providing alternate water supplies.
- b. Installing security fencing or other measures to limit access.
- c. Extraordinary measures to control the source of release.
- d. Removal of hazardous substances to an approved site for storage, treatment or disposal.
- e. Placing physical barriers to deter the spread of the release.
- f. Recommending to appropriate authorities the evacuation of threatened individuals.
- g. Using other materials to restrain the spread of the contaminant or to mitigate its effects.
- h. Executing damage control or salvage operations.

133.4(3) Significant risk. In cases of significant risk, the following investigatory and remedial measures shall be implemented:

a. *Investigation.* The responsible party shall determine the extent and levels of contamination through a site assessment conducted under the supervision of a registered professional engineer, an expert in the field of hydrogeology, or other qualified person. A site assessment plan shall be submitted to the department within 45 days of notice by the department, unless a shorter time is required or a longer time is authorized by the department. The plan shall be approved by the department prior to initiation of the assessment, unless otherwise approved by the department. The site assessment shall be conducted within a reasonable time and a remedial action plan shall be submitted to the department, within the time directed or approved by the department. The department may require further investigation by the responsible person in order to adequately assess the extent of contamination, and may require the remedial action plan to be supplemented if necessary.

b. *Required cleanup actions.*

(1) Groundwater. The goal of groundwater cleanup is use of best available technology and best management practices as long as it is reasonable and practical to remove all contaminants, and in any event until water contamination remains below the action level for any contaminant, and the department determines that the contamination is not likely to increase and no longer presents a significant risk. Where site conditions and available technology are such that attainment of these goals would be impractical, the department may establish an alternative cleanup level or levels, including such other conditions as will adequately protect the public health, safety, environment, and quality of life.

(2) Other. Where significant amounts of contaminants are documented as being present in the soils or other environment, such that groundwater contamination is occurring or is likely, active cleanup of the contaminated soils or other environment shall be implemented to the extent reasonable and necessary to

prevent or minimize release to the groundwater; passive cleanup may be allowed in extraordinary circumstances.

133.4(4) *Other.* Where significant risk is not currently present, the responsible person may be required to monitor the groundwater and implement reasonable management or other preventative measures to minimize further contamination.

567—133.5(455B,455E) Report to commission. Department actions taken pursuant to this chapter shall be reported to the commission.

567—133.6(455B) Compensation for damages to natural resources.

133.6(1) *Applicability.* This rule applies to persons who, by release of a hazardous substance to the environment, cause injury to, destruction of, or loss of natural resources held in trust by the state for the public. In most cases this would involve the destruction of aquatic life or other wildlife under the ownership of the state, as provided in Iowa Code section 481A.2. This rule relates to the compensation to the state and public for the natural resource damages and is in addition to any other legal recourse for the event or action that caused the destruction or damage.

133.6(2) *Liability to the state.* Persons who cause injury to, destruction of, or loss of natural resources of the state are liable to the state as provided by Iowa Code section 455B.392(1)(c). This rule establishes the methodologies and criteria for evaluating the extent and value of the damage and establishes the methods of compensation. If the person and the department cannot agree to the proper resolution of a particular case, the issues of liability, damage and compensation will be established through contested case proceedings, as provided by 567—Chapter 7.

133.6(3) *Assessment.* When natural resources are destroyed or damaged by an identifiable source, the degree and value of the losses shall be assessed by collecting, compiling, and analyzing relevant information, statistics, or data through prescribed methodologies to determine damages, as set forth in this rule.

a. General. Except as specified otherwise in this rule, the definitions, methodologies, and criteria in 43 CFR 11 may be used to assess natural resource damages.

b. Fish loss. Assessment of damages for fish kills shall be in accordance with the following:

(1) Normally investigators will follow the methods prescribed by AFS to determine numbers of fish killed, by species and size.

(2) During periods of ice cover, where local conditions prevent using these methods, or in other appropriate circumstances, for example when the resources are known to have been diminished by prior incidents, investigators will utilize the best information available to determine numbers of fish killed by species and size. Information may include existing or prior data on population levels in the affected water body or nearby water bodies with similar characteristics, including any historical fish kill data.

(3) The monetary valuation of fish shall be the replacement values as published in AFS for all fish lost except the following: channel catfish, flathead catfish, blue catfish, northern pike, muskellunge, northern pike/muskellunge hybrid, rainbow trout, brown trout, brook trout, white bass, yellow bass, white bass/striped bass hybrid, largemouth bass, smallmouth bass, spotted bass, crappie, rock bass, bluegill, redear sunfish, warmouth, pumpkinseed, freshwater drum, yellow perch, walleye, sauger, and walleye/sauger hybrid. The value of these fish shall be \$15 each, unless AFS establishes a higher value. Notwithstanding the above, the value of each fish classified by the department as an endangered or threatened species shall be \$1,000.

(4) The value of lost services to the public shall be the number of fishing trips lost over the period of the resource loss, as determined through local creel survey information or through interpolation from the most recent statewide creel survey. Each trip shall be valued at \$30.

(5) The cost of the investigation shall include salaries plus overhead for the time of staff, including support staff, involved in investigating the fish kill and performing the assessment; meals and lodging for staff while they are in the field conducting the assessment; mileage, valued at the current rate established pursuant to Iowa Code section 18.117; costs borne by the department associated with containment or cleanup operations; and any other costs directly associated with the investigation and assessment.

133.6(4) Compensation. The department will extend to the responsible person the opportunity to reach voluntary agreement as to the amount of damages and the compensation method. If the person disputes liability or the damage amount, the department will make a demand for payment and the person may appeal and demand contested case procedures under 567—Chapter 7. The method of compensation shall be solely in the discretion of the department.

a. Direct monetary payment. Compensation will normally be by direct monetary payment to the department. The money received will be used to replace, restore or rehabilitate the lost or damaged resources. Resource enhancement projects, support of educational programs relating to resource protection or enhancement, or resource acquisition of equal or greater value also may be funded. If practical, such alternatives should provide similar services to the public and should be in the vicinity of the loss.

b. Indirect monetary payment. In appropriate cases, an equal or greater amount of compensation may be made by monetary payment to another government agency or private nonprofit group in the natural resource field for the same purposes as provided in paragraph “a.”

c. Direct funding of projects. With the approval and oversight of the department, the person may be allowed to contract directly for the same purposes as provided in paragraph “a.”

This rule is intended to implement Iowa Code section 455B.392.

[ARC 8470B, IAB 1/13/10, effective 2/17/10]

This chapter is intended to implement Iowa Code section 455E.5(5) and Iowa Code chapter 455B, Division III, Part 1 and Division IV, Part 4.

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CHAPTER 134
UNDERGROUND STORAGE TANK LICENSING AND CERTIFICATION PROGRAMS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

PART A
CERTIFICATION OF GROUNDWATER PROFESSIONALS

567—134.1(455B) Definition. A “groundwater professional” is a person who provides subsurface soil contamination and groundwater consulting services, or who contracts to perform or who supervises remediation or corrective action services at leaking underground storage tank sites. A person who engages only in installation or removal of underground storage tanks and piping is not a “groundwater professional” for the purposes of this chapter.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.2(455B) Certification requirements.

134.2(1) A groundwater professional must be certified as provided in rule 567—134.3(455B) before engaging in activities described in rule 567—134.1(455B), except that a person engaging in activities described in rule 567—134.1(455B) need not be certified if that person is under direct supervision of a certified groundwater professional when engaging in such activities.

134.2(2) In order to be certified as a groundwater professional, a person must be one or more of the following:

- a.* A person certified by the American Institute of Hydrology as a Professional Hydrologist, Professional Hydrogeologist, or Professional Hydrologist (Groundwater).
- b.* A person certified by the National Water Well Association or Association of Groundwater Scientists and Engineers as a Groundwater Professional.
- c.* A person certified by the American Board of Industrial Hygiene as an Industrial Hygienist.
- d.* A professional engineer registered in Iowa.
- e.* A professional geologist certified by a national organization (e.g., American Institute of Professional Geologists, American Association of Petroleum Geologists, Society of Independent Earth Scientists).
- f.* Any person with five years of direct or related experience and training as a groundwater professional or in the field of earth sciences. This must include a minimum of at least two years of education and training, and two years of experience as a groundwater professional.
- g.* Any person with a license, certification, or registration to practice hydrogeology or groundwater hydrology issued by any state in the United States or by a national organization, provided that the license, certification, or registration process requires, at a minimum, both of the following:

- (1) Possession of a bachelor’s degree from an accredited college.
- (2) Five years of related professional experience.

134.2(3) In order to be certified as a groundwater professional, the applicant must complete the two-day risk-based correction action (RBCA) course or department-approved course and pass a certification examination offered or authorized by the department.

- a.* An applicant who fails an initial examination may take a second examination.
- b.* Failure of the second examination will result in termination of the application. A person may reapply for groundwater professional certification. The applicant must complete a regularly scheduled course of instruction before retaking the certification examination.
- c.* Professional engineers who qualify for an exemption from taking the certification examination under subrule 134.3(6) must attend the RBCA initial course of instruction or department-approved course in order to be certified.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.3(455B) Certification procedure.

134.3(1) *Application.* Application for certification shall be made by completing a form provided by the department and submitting evidence of meeting the requirements found in rule 567—134.2(455B) (i.e., copy of certificate, license, description of experience and training).

134.3(2) *Certification fee.* The initial certification and each renewal application must be accompanied by a nonrefundable fee in the form of a check or money order payable to the Department of Natural Resources. The certification fee is \$200 every two years and must be renewed biennially by January 1 of each even-numbered year (i.e., 1994, 1996, etc.). No proration of certification fees will be done. The department will assess a fee for each training course and examination, based upon the cost of preparation and administration.

134.3(3) Rescinded IAB 1/9/02, effective February 13, 2002.

134.3(4) *Certification issuance and renewal.*

a. Upon receipt, review and acceptance of the application and certificate fee, the department shall furnish the applicant with a certificate showing the name of the individual and the expiration date.

b. In order to remain valid, a groundwater professional certificate must be renewed prior to the expiration date specified on the certificate. Renewal applications must be made on a form provided by the department and must be received by the department or postmarked at least 60 days prior to the expiration date of the registration or certification then in effect. The renewal application must be accompanied by the registration or certification fee specified in subrule 134.3(2) and proof of completing the continuing education requirements in 134.3(5).

134.3(5) *Continuing education.* All groundwater professionals are required to complete at least 12 hours of continuing education during each two-year certification period.

a. The initial course of instruction required in subrule 134.2(3) may be applied toward the first certification period's continuing education requirements. Continuing education credits may not be carried forward to the next certification period.

b. Continuing education must be in the areas relating to underground storage tank contamination assessment and corrective action activities. Courses other than those provided by the department must be submitted to the department for prior approval as meeting the continuing education requirement.

134.3(6) *Exemption from examination.* The department may provide for an exemption from the certification examination requirements for a professional engineer registered pursuant to Iowa Code chapter 542B upon submission of sufficient proof of exemption to the department. The person must be qualified in the field of geotechnical, hydrological, environmental, groundwater, or hydrogeological engineering. A groundwater professional exempted under this provision must meet the continuing education requirements of subrule 134.3(5).

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.4(455B) Suspension, revocation and denial of certification.

134.4(1) *General policy.* It is the policy of the department to enforce standards of professional and ethical conduct which are generally accepted within the professions which qualify persons for certification in Iowa as groundwater professionals. The department intends to rely on written standards of professional and ethical conduct and competency which are applicable to persons who qualify for certification by virtue of certification by or membership in a professional organization.

It is the policy of the department to investigate and enforce standards of conduct by certified groundwater professionals which fall within the scope of their professional relationships with the department, their clients and other state regulatory agencies including the Iowa comprehensive petroleum underground storage tank fund board and their agents.

134.4(2) *Lack of qualification.* The department may suspend, revoke or deny certification as a groundwater professional for any of the following reasons:

- a.* A material misstatement of fact in an application for certification.
- b.* Failure to provide the fee for certification.
- c.* Loss of license, certification, or registration necessary to meet the certification requirements in subrule 134.2(2).
- d.* Insufficient proof of qualifications required under rule 567—134.2(455B).

- e. Failure to successfully complete the certification requirements.
- f. Receipt of a “certificate of noncompliance” with a child support obligation and failure to provide a “withdrawal of a certificate of noncompliance” from the child support recovery unit as provided in Iowa Code chapter 252J.
- g. Default on an obligation owed to or collected by the state as provided in Iowa Code section 421.17(27) “e.”

134.4(3) *Discipline based on a single act or omission.* The department may suspend, revoke or deny certification based on substantial evidence of a single act or failure to act. The severity of the sanction may be based on the gravity of the act or omission and on the degree of culpability such as whether it was negligent, knowing, willful, or with such a degree of reckless disregard as to equate with intentional conduct. Single acts or omissions that may be grounds for discipline include, but are not limited to, the following:

- a. Fraudulent omissions or misstatements of material fact in any reports, correspondence or communications with the department.
- b. Violation of an ethical standard which the person knew or should have known and which results in or reasonably could have resulted in material consequences.
- c. Failure to report the presence of contamination to the parties reasonably believed to be responsible for reporting the contamination to the department as provided in 567—Chapter 131 and 567—135.6(455B).
- d. Knowingly making a material false statement, representation or certification on any application, record, report, or document required to be maintained or submitted by department rule or which is voluntarily submitted to the department.
- e. Gross incompetence in the performance of groundwater professional services and corrective action.
- f. Material misstatement of facts or misrepresentation of information required to be provided pursuant to Iowa Code chapter 455B, division IV, part 8.

134.4(4) *Discipline based on repeated acts or omissions.* The department may suspend, revoke or deny certification, based on substantial evidence of repeated acts or omissions which, when taken together indicate a lack of competency, professionalism, ethical conduct, or adherence to standards of performance generally expected by the profession. The severity of the sanction may be based on the gravity of the acts or omissions and the degree of culpability. Disciplinary sanctions under this subrule will not be applied without providing the person with at least one written notice of the deficiency and a written warning that future repetition may result in discipline. Conduct or omissions which may be a basis for discipline include but are not limited to the following:

- a. Repeated incidents of substandard field investigation may result in suspension or revocation.
- b. Repeated incidents of substandard, inaccurate or incomplete site cleanup reports and failure to follow site cleanup report instructions may result in suspension or revocation.
- c. Conduct warranting a sanction after prior suspension shall result in a more severe sanction.

134.4(5) *Disciplinary procedure.*

- a. Prior to issuance of a final department action imposing a disciplinary sanction of suspension, revocation or denial of certification, the department shall conduct such lawful investigation as it deems necessary to substantiate material facts sufficient to warrant a disciplinary sanction. The decision to impose a disciplinary sanction shall be made by the administrator of the environmental protection division.
- b. Written notice of a sanction shall be sent by restricted certified mail to the person against whom the sanction is imposed. The notice shall provide a brief explanation of the facts relied upon and the sanction to be imposed. The notice shall inform the recipient of applicable appeal rights.
- c. A person may appeal a decision imposing a suspension, revocation or denial of certification within 30 days of receipt of the notice. Upon timely receipt of the notice of appeal, contested case procedures, including informal settlement, shall apply as provided in 561—Chapter 7. In accordance with 561—subrule 7.5(2), the department shall initiate pleading by the filing of a petition.
- d. Notwithstanding 561—subrule 7.15(7), the sanction imposed shall not take effect until after a contested case hearing and issuance of a proposed decision. If a timely appeal has not been filed, the

sanction is effective after 30 days from receipt of the notice. A party may request stay of the sanction, as provided in 561—subrule 7.15(7), after issuance of a proposed decision.

134.4(6) *Noncompliance with support order procedures.* Upon receipt of a certification of noncompliance with a support obligation as provided in Iowa Code section 252J.7, the department will initiate procedures to deny an application for certification or renewal, or to suspend a certification in accordance with Iowa Code section 252J.8(4). The department shall issue a notice by restricted certified mail to the person of its intent to deny or suspend groundwater professional certification based on receipt of a certification of noncompliance. The suspension or denial shall be effective 30 days after receipt of the notice unless the person provides the department with a withdrawal of the certificate of noncompliance from the child support recovery unit as provided in Iowa Code section 252J.8(4)“c.” Pursuant to Iowa Code section 252J.8(4), the person does not have a right to a hearing before the department to contest the denial or suspension action under this subrule but may seek a hearing in district court in accordance with Iowa Code section 252J.9.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.5(455B) Penalty. A groundwater professional who fails to obtain certification with the department of natural resources as required in this chapter is subject to a civil penalty of \$50. A groundwater professional who knowingly or intentionally makes a false statement or misrepresentation which results in a mistaken classification of a site shall be guilty of a serious misdemeanor and shall have the groundwater professional certification revoked.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

These rules are intended to implement Iowa Code section 455B.474(9).

PART B

CERTIFICATION OF UST COMPLIANCE INSPECTORS

567—134.6(455B) Definition.

“*UST compliance inspector*” means a person who inspects a regulated underground storage tank (UST) to satisfy the requirements of 567—135.20(455B) for compliance with UST technical standards in 567—Chapter 135.

567—134.7(455B) Certification requirements for UST compliance inspectors.

134.7(1) A person retained by an owner or operator of a UST facility for the purpose of establishing compliance with a UST compliance inspection required by the department under rule 567—135.20(455B) must hold a current UST compliance inspector certification issued by the department.

134.7(2) Inspector certification will be issued by the department only to a person who:

- a. Satisfies one of the following:
 - (1) Is an Iowa-licensed UST installer;
 - (2) Is an Iowa-licensed installation inspector;
 - (3) Has participated on a minimum of 50 on-site compliance inspections with an Iowa-certified compliance inspector;
 - (4) Has two years of experience working with petroleum equipment, including installations, maintenance, or testing; or
 - (5) Has other relevant experience approved by the department.
- b. Attends the required training approved by the department as provided in rule 567—134.10(455B).
 - (1) Temporary exception to required training. An applicant may be issued a certification without the required training if all other requirements of Part B of this chapter are satisfied and the required training is not offered within 60 days of the date of application. The applicant must attend required training within one year or, if training is not offered within one year, when required training is next offered. If an applicant receives a certification under this temporary exception, the individual must attend required training, if offered, before renewal of the certification.

(2) If an applicant receives a certification under a temporary training exception pursuant to paragraph 134.7(2) “a,” all compliance inspection activities must be conducted under the supervision of a trained Iowa-certified compliance inspector. Supervision does not require the trained Iowa-certified compliance inspector to be on site for compliance inspections conducted by the inspector who has not completed the required training. The trained Iowa-certified compliance inspector must co-sign compliance inspections conducted by the inspector who has not completed the required training.

c. Achieves a passing grade of 75 percent on a certification examination administered or approved by the department as provided in rule 567—134.10(455B).

d. Submits an accurate and complete application.

e. Is not found to be in violation of this chapter and has not had a certification revoked by the department pursuant to rule 567—134.16(455B).

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.8(455B) Temporary certification. Rescinded ARC 5625C, IAB 5/19/21, effective 6/23/21.

567—134.9(455B) Application for inspector certification.

134.9(1) The applicant shall be an individual.

134.9(2) An applicant for inspector certification shall submit, in addition to all applicable fees, an application on forms provided by the department. The application shall contain the following information:

a. Evidence that the applicant meets the experience and qualification prerequisites contained in 567—134.7(455B).

b. The applicant’s name, address and telephone number.

c. Other information necessary for a determination of the applicant’s qualifications.

134.9(3) Training and certification fees. An initial nonrefundable application fee of \$200 in the form of a check or money order payable to the Department of Natural Resources must accompany the initial application for certification and \$200 for each renewal application. The \$200 application fee covers the cost of the certification examination. The department will assess an additional fee for each training course based upon the cost of administration.

134.9(4) An application for certification must be received by the department no later than 60 days prior to the announced date of the certification examination.

134.9(5) An application must be complete upon submission.

134.9(6) An applicant meeting the requirements of this rule will be granted admission to the examination for inspector certification.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.10(455B) Training and certification examination.

134.10(1) Prior to taking the compliance inspector examination, the applicant must attend the department’s inspector training course or designated approved course.

134.10(2) The department will establish administrative and technical content for the examination and the standards and criteria against which the department will evaluate candidates in determining the fitness of candidates for inspector certification.

134.10(3) At least once in each calendar year, the department will schedule a date and location for the examination for certification of inspectors.

134.10(4) Only applicants who have been authorized by the department to take an examination will be admitted to an examination or issued a certification as a result of passing an examination. Authorization to take an examination will be based on the applicant’s compliance with the requirements of this chapter.

134.10(5) To receive a passing grade on the examination, the applicant for certification must achieve a minimum score of 75 percent. An applicant who fails an initial examination may take a second examination.

134.10(6) The application of an applicant who fails the second examination will be terminated. An applicant who fails the second examination may reapply for inspector certification but may not retake the examination until the applicant has successfully completed a regularly scheduled course of instruction that is administered or approved by the department. Successful completion means attendance at all sessions of

training and attainment of the minimum passing grade established by the department for the approved training course.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.11(455B) Renewal of certification.

134.11(1) *Renewal period.* Certification shall be for a two-year period and must be renewed by January 1 of each odd-numbered year. Applications for renewal must be submitted on a form provided by the department and no later than 30 days prior to the expiration date. If a certified inspector fails to renew the certification by the expiration date, the department may grant, upon a showing of good cause, a 30-day grace period during which the applicant may submit the application and payment of the renewal fee as provided in subrule 134.9(3).

134.11(2) *Continuing education.* Certified inspectors must successfully complete eight hours of training approved by the department to maintain certification.

134.11(3) *Minimum inspections.* In order to renew certification, an inspector must have conducted at least 12 compliance inspections in the past two years.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.12(455B) Professional liability insurance requirements. All certified compliance inspectors are required to have professional liability insurance with minimum liability limits of \$1 million per occurrence and in the aggregate. All persons covered by the certification provisions of this chapter shall provide written proof of coverage upon request of the department.

567—134.13(455B) Certified company. A company employing certified UST compliance inspectors shall be registered with the department as a certified UST compliance company. A company shall lose its certification if it fails to employ at least one certified inspector or if it employs uncertified individuals to do compliance inspections required by the department. The initial and biennial renewal certification fee is \$200.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.14(455B) Responsibilities of compliance inspectors. The UST compliance inspector shall conduct a compliance inspection in accordance with the standards set out in this rule and with department written instructions and guidelines. The inspector shall notify the department of the date of a site inspection at least ten days prior to the inspection or another time frame approved by the department.

134.14(1) *Inspection process.* The inspector shall record the inspection on a form provided by the department and conduct the inspection to address all items contained on the inspection form. The department may approve an alternative inspection form if requested by the inspector. The completed inspection form must be maintained by the inspector or certified company for five years. Upon completion of the site inspection, the inspector shall send an inspection report to the owner and operator within ten business days, except for the notice of a potential suspected or confirmed release as provided in paragraph “b.” At a minimum, the report shall satisfy the following:

a. The inspector shall notify the owner and operator of any compliance violations or deficiencies and those specific actions necessary to correct the violations or deficiencies in accordance with 567—Chapter 135.

b. The inspector shall immediately upon discovery notify the owner and operator of a suspected release as provided in 567—135.6(455B). The notice shall advise the owner and operator of their duty to report the condition to the department within 24 hours or within 6 hours if a hazardous condition exists as defined in 567—131.1(455B) and of their duty to take necessary steps to investigate and confirm suspected releases within the time frames specified in 567—135.6(455B). The inspector shall record in the inspection report submitted to the department the date and time of the notice to the owner and operator.

c. The inspector shall notify the owner and operator of applicable time frames to correct violations or deficiencies if established by rule, or within 60 days of receipt of the inspection report or another reasonable time period approved by the department.

d. The inspector may enter the initial site inspection results electronically as provided in 134.14(2) and complete a follow-up final electronic report as provided below or wait until completion of the follow-up activities to submit a final electronic report. In either case, a final electronic report shall be submitted to the department and a copy provided to the owner and operator as provided in 134.14(2), within the following time frames:

(1) Within 10 business days of the inspection, if the results of the inspection find no violations or deficiencies requiring corrective action.

(2) Within 10 business days of the inspector's receipt of all necessary documentation of all action required to correct violations and deficiencies.

(3) In any case, no later than 90 days of the site inspection.

134.14(2) Electronic inspection reporting. The inspector shall prepare an electronic report in accordance with the following:

a. The inspector shall enter the results of the site inspection discovered at the time of the inspection and any actions taken to correct violations and deficiencies on an Internet-based electronic format developed by the department and in accordance with guidance. The department's software will be capable of generating an inspection report.

b. The department will develop a generally compatible electronic platform using XML language. The department will provide the XML schema file format to describe the data needed to allow an inspector to transfer multiple site inspection results in an electronic batch process over the Internet using the department's inspection website.

c. The inspector shall provide a print copy of the electronically generated inspection report to the owner and operator or an alternative report approved by the department.

134.14(3) Any evidence of violations or deficiencies observed during the inspection must be photographed using a digital camera. The digital photographs must be submitted as part of the electronic inspection report and maintained by the inspector for five years as part of the inspector's records.

134.14(4) The inspector must provide any inspection records provided by the owner and operator to the department upon request.

134.14(5) Inspection technical requirements. An inspector of a UST system must check for compliance with the technical standards of 567—Chapter 135 following the department's guidance. The inspection of a UST system currently in operation shall include, but not be limited to, the following:

a. The material currently stored in the UST.

b. The type of tank and lines currently at the site as compared to the registered information on the department's database.

c. Checking site records demonstrating operational compliance, 567—subrule 135.4(5).

d. Checking release detection records, 567—subrule 135.5(6).

e. Visually checking for releases or other violations by opening covers of dispensers, manways, and containment sumps for submersible pumps and other piping connections for:

(1) Indications of a product release and leaking equipment.

(2) Deteriorating product lines or excessive bends in product lines or flex connectors.

(3) Proper anchoring of breakaways (dispensers only).

f. Current operating status of cathodic protection system, if present.

g. Presence and operational condition of spill and overfill equipment, 567—paragraph 135.3(1)“c.”

Any problems observed during the inspection must be photographed using a digital camera.

134.14(6) Conflict of interest. A compliance inspector shall not conduct a compliance inspection if the compliance inspector is the owner or operator of the UST system, an employee of the owner or operator of the UST system, or a person having daily on-site responsibility for the operation and maintenance of the UST system.

[ARC 8124B, IAB 9/9/09, effective 10/14/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.15(455B) Disciplinary actions.

134.15(1) The department may impose disciplinary actions which may include, but are not limited to, notices of deficiency, probationary notices, suspension of a certification and, pursuant to 567—134.16(455B), revocation of a certification.

134.15(2) A notice of deficiency or probationary notice shall not be an appealable decision. The recipient of a notice may contest the basis for the notice in writing, and such response shall be made part of the certification record. A person subject to a notice to suspend or revoke a certification may appeal the notice as provided in 567—Chapter 7.

134.15(3) The department may suspend the certification of a certified inspector or certified company for good cause, and based on a single act or omission or repeated acts or omissions. The suspension may require the certified inspector to take remedial measures intended to correct or prevent future acts and omissions. Good cause includes, but is not limited to:

- a. A violation of these rules.
- b. Negligent misrepresentation of material facts in a compliance report.
- c. Negligent failure to identify a material violation of UST operation and maintenance standards set out in 567—134.14(455B).
- d. Repeated failure to conduct compliance inspections and submit reports in accordance with the standards set out in 567—134.14(455B).
- e. Incompetence on the part of the certified inspector as evidenced by errors in the performance of duties and activities for which the certification was issued.
- f. Repeated failure to submit reports of inspection activities to the department or the owner and operator as provided in 567—134.14(455B).

134.15(4) The suspension of a company certification or inspector certification shall prevent the company or person from engaging in activities for which certification is required.

134.15(5) The department may require that the certified inspector successfully complete a special training program, examination or other remedial measures sponsored or approved by the department and designed to strengthen the specific weakness in the certified inspector's performance of duties as identified in the suspension order.

134.15(6) A certified inspector or certified company shall immediately surrender the certificate or license, as applicable, to the department as of the effective date of a suspension order. The department may reinstate the certification if it is determined the person has satisfied the terms of the suspension order and the certification has not expired.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.16(455B) Revocation of inspector certification or company certification.

134.16(1) The department may revoke the inspector certification or company certification for one or more of the following:

- a. Willful disregard of, or willful or repeated violations of, this chapter or 567—Chapter 135.
- b. Fraudulent omissions or misstatements of material facts in a compliance inspection report or in other written or oral communications with the department.
- c. A knowing and willful failure to detect and report a material violation of UST operation and maintenance standards as part of a compliance inspection required by 567—135.20(455B).
- d. Acts or omissions warranting suspension after having certification previously suspended.
- e. The revocation of a certification as an installer or installation inspector under rule 567—134.24(455B) or 567—134.27(455B).

134.16(2) A certified inspector or certified company shall immediately surrender certification documents after the effective date of a revocation decision.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

These rules are intended to implement Iowa Code section 455B.474.

PART C
LICENSING OF UST PROFESSIONALS

567—134.17(455B) Definitions. As used herein:

“Board” means the Iowa comprehensive petroleum underground storage tank fund board.

“Cathodic protection tester” means a licensed individual who provides installation, maintenance and testing services on underground storage tank corrosion protection systems.

“Certificate of noncompliance” means a document provided by the child support recovery unit certifying that the named obligor is not in compliance with a support order or with a written agreement for payment of support entered into by the unit and the obligor.

“Child support recovery unit” means the child support recovery unit created by Iowa Code section 252B.2.

“Deductible” means the portion of a claim paid by insureds on the policy.

“Department” means the Iowa department of natural resources.

“Install” or *“installation”* means the physical construction of a UST system including, but not limited to, activities such as excavating, backfilling, testing, placement of the tank, underground piping, release detection devices, corrosion protection systems, spill and overfill devices and any associated administrative activities such as notifications, record keeping and record submissions.

“Installation inspector” means a licensed individual who is engaged in the inspection and approval of the installation of new or upgraded underground storage tank systems.

“Installer” means a licensed individual or licensed company engaged in the installation of a new underground storage tank system or the upgrading of underground storage tank systems.

“In the aggregate” means for all claims or suits in a single year seeking damages.

“Licensed company” means a person, or company which employs a person who meets all of the qualifications to install, upgrade, repair, test or line underground storage tank systems.

“Licensed individual” means an individual who has received a license to perform any of the activities regulated under this chapter.

“Liner” means a licensed company or an individual who provides services to install underground storage tank lining and to repair underground storage tanks.

“Maintenance” means the normal operational upkeep to prevent a UST system from releasing a regulated substance or to ensure that a release is detected.

“Modification” means to change a UST system currently in use by the installation of new UST system components. “Modification” includes, but is not limited to, the addition of corrosion protection to a previously lined tank, installation of new underground piping or replacement of existing underground piping, changing the primary release detection method, or adding secondary containment. “Modification” does not include those activities defined in this rule as “repair” or “replacement.”

“Obligor” means a natural person as defined in Iowa Code section 252B.1 who has been ordered by a court or administrative agency to pay support.

“OSHA” means the Occupational Safety and Health Administration.

“Precision test” means a tank and line tightness test that meets the requirements in rule 567—135.4(455B).

“Removal” means the process of removing and disposing of an underground storage tank system no longer in service or the process of abandoning an underground storage tank system in place, in accordance with rule 567—135.15(455B).

“Remover” means a licensed individual who is engaged in permanent closure activities by removal or filling in place of underground storage tank systems in accordance with rule 567—135.15(455B).

“Repair” means to restore any portion of a UST system that has failed. “Repair” does not include the activities defined in this rule by “modification” or “replacement.”

“Replacement” means to effect a change in any part of a UST system above grade by exchanging one unit for a like or similar unit. “Replacement” does not include activities defined in this rule as “repair” or “modification.”

“Self-insured retention” means the portion of a claim paid by insureds who self-insure a portion of their risk as part of a policy. Expenses included as a part of the self-insured retention are the cost of claims settlements or suits, the cost of adjusting, legal fees, court costs and any other investigative cost associated with the claim.

“Service technician” means a nonlicensed individual who works for a licensed individual or a licensed company or who is certified by a manufacturer to conduct modification or replacement activities at UST facilities.

“Tester” means a licensed company or individual who tests tanks, lines, leak detection systems, or monitoring systems as required by 567—Chapter 135 and this chapter. For the purposes of this definition, an owner, operator or an employee of an owner or operator performing leak detection or cathodic protection monitoring, as required by 567—Chapter 135, is not a tester.

“Testing” means the process of utilizing a system to test underground storage tank systems or any part thereof for tightness, leak detection, cathodic protection or monitoring.

“Underground storage tank professional” or *“UST professional”* means an individual licensed by the department under Part C of this chapter. The licensing program includes underground storage tank system installation, installation inspection, UST system testing, tank lining, cathodic protection installation/inspection, and UST removal. The license issued will list the type of work the individual is licensed to perform.

“Underground storage tank system” or *“UST system”* means a tank or tanks and associated piping intended to contain and dispense regulated substances and for which proof of financial responsibility is required.

“Unit” means the child support recovery unit created in Iowa Code section 252B.2.

“U.S. EPA” means the United States Environmental Protection Agency.

“Withdrawal of a certificate of noncompliance” means a document provided by the unit certifying that the certificate of noncompliance is withdrawn and that the licensing authority may proceed with issuance, reinstatement, or renewal of an obligor’s license.

[ARC 7946B, IAB 7/15/09, effective 8/19/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.18(455B) Applicability of Part C. All persons conducting underground storage tank installations and installation inspections as provided in 567—subparagraph 135.3(1)“e”(2) and installers, installation inspectors, liners, testers, and removers shall be licensed by the department in accordance with Part C of this chapter. Service technicians as defined in rule 567—134.17(455B) are exempt from licensure under Part C of this chapter.

[ARC 7946B, IAB 7/15/09, effective 8/19/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.19(455B) General licensing requirements. Applications for licenses shall be submitted on a form provided by the department along with all required supporting documentation. Licenses shall be issued and renewed on a two-year calendar basis, beginning January 1 on the odd-numbered years. All applicants must be at least 18 years of age. The applicant shall not have been issued a certificate of noncompliance from the child support recovery unit.

134.19(1) Licensing classifications. A separate license will be issued for:

- a. UST installers;
- b. UST removers;
- c. UST testers;
- d. Cathodic protection testers;
- e. UST liners; and
- f. Installation inspectors.

134.19(2) Individual and company licenses. A company employing licensed individuals for installation, upgrading, removal, lining or testing of underground storage tank systems shall be registered as a licensed company. A company shall have its license revoked if it fails to employ at least one licensed individual or if it employs unlicensed individuals to do work requiring a license. Individuals who are not companies as defined in rule 567—134.17(455B) are required to have an individual license only.

134.19(3) License fees. A \$200 fee shall be submitted with a company license application and with an individual license application. Companies and individuals are licensed separately as set forth in subrule 134.19(2). Individuals may apply for multiple individual licenses at once, paying only one \$200 processing fee. All fees are nonrefundable.

134.19(4) *License issuance.* Upon receipt, review, and acceptance of the application and application fee, the department shall furnish the applicant with a license showing the name of the individual/company and the expiration date. In order to remain valid, the license shall be renewed prior to the expiration date specified on the license.

134.19(5) *Environmental liability insurance.* All license holders, including licensed companies, are required to have environmental liability insurance with minimum liability of \$1 million per occurrence, as well as in the aggregate.

a. Licensed company. A licensed company is required to provide environmental liability insurance for all licensed activities of the company and its licensed UST professionals.

b. Licensed individuals. Each licensed installer, installation inspector, remover, liner, cathodic protection tester, and tester is required to provide proof of environmental liability insurance covering licensed activities. The insurance may be provided by the licensed company employing the licensed individual or by the individual licensee.

c. Insurance exception. UST professionals employed by owners or operators of underground storage tank systems to work only on the owner's or operator's private system(s) are exempt from insurance requirements.

d. Forms of acceptable insurance. All parties covered by the licensing provisions of Part C of this chapter shall provide evidence of environmental liability insurance to the department upon request.

(1) Environmental liability insurance may be provided by a private insurer authorized to do business in Iowa.

(2) Evidence of environmental liability insurance may be provided using methods of self-insurance as outlined in 567—Chapter 136.

134.19(6) *Examinations and course of instruction.* Prior to the issuance of a license as an installer, installation inspector, remover, liner, tester, or cathodic protection tester, the applicant shall successfully complete a department or department-approved course of instruction and pass a qualification examination approved by the department.

a. Examination requirements for all license holders.

(1) A passing grade of not less than 75 percent is required on the Iowa examination.

(2) Candidates who have failed the examination may not perform work unless supervised by an appropriately licensed individual.

(3) A fee reflecting the actual costs of developing and administering each course of instruction and examination shall be charged.

(4) Nothing in Part C of this chapter shall limit the right of the department to require additional educational requirements of license holders.

b. Exceptions to completion of the course of instruction or examination. All license holders, except cathodic protection testers, are required to complete the course of instruction. Cathodic protection testers are only required to maintain NACE certification, STI cathodic protection certification or equivalent certification approved by the department. Testers may qualify for reciprocity under paragraph 134.19(6) "c" if the department approves the public or private certification or training program completed. For testers, the department will approve or deny the certification based upon a review of the course of instruction, applicable manuals and handouts, and the examination.

c. Reciprocity. Persons who are certified under another state or federal regulatory program which has been approved by the department may be eligible for licensure in Iowa without having to take a course of instruction or pass the examination. However, these individuals shall still pay the \$200 application fee and qualify for license renewal by fulfilling continuing education requirements.

d. Repeat examination attempts. An applicant who fails an initial examination may take a second examination within one calendar year without having to retake the course of instruction. Failure of the second examination will result in termination of the application. A person may reapply for licensure. The applicant shall complete a course of instruction before retaking the examination.

134.19(7) *Continuing education.* Each person licensed under Part C of this chapter shall complete a department-approved refresher course every two years, except for licensed cathodic protection testers. Cathodic protection testers shall maintain NACE or STI certification or another certification approved by

the department. Beginning with the first application for license renewal, each UST professional shall provide evidence to the department, prior to submission of the application for renewal, that at least eight hours of department-approved continuing education have been satisfactorily completed since the last license was issued or renewed. The department may limit the number of hours granted for similar courses during a renewal period. The requirement for continuing education may be met only by those continuing education offerings which have been approved by the department.

a. Form of approval. Approval may take the form of:

(1) Program approval granted by the department to the sponsor or instructor of a continuing education offering;

(2) Individual requests for credit granted by the department to an installer or inspector for a continuing education offering whose sponsor or instructor did not seek program approval; or

(3) Blanket approval granted by the department to continuing education offerings sponsored by the department or other professional organizations whose standards have been approved by the department.

b. Procedures for department approval of continuing education offerings.

(1) Application for program approval shall be made by the sponsor or instructor to the department and include an agenda or an outline of the content of the proposed continuing education offering.

(2) Application shall be made at least 45 days prior to the desired effective date of approval.

(3) The application shall be reviewed by the department, and notice of approval or denial of program approval shall be sent to the sponsor or instructor. Credit hours may be limited by the department based on program content.

c. Proof of participation. A certificate of satisfactory completion of a department-approved continuing education offering issued by the sponsor or instructor constitutes sufficient evidence of satisfactory completion for purposes of meeting the continuing education requirement.

[ARC 7946B, IAB 7/15/09, effective 8/19/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.20(455B) License renewal procedures.

134.20(1) Renewal applications shall be made on a form provided by the department and received by the department or postmarked no later than December 1 of the expiration year of the license at issue. The renewal application shall be accompanied by the \$200 renewal fee as specified in subrule 134.19(3) and proof of environmental liability insurance as required under subrule 134.19(5). Applications received after the December 1 deadline, but before the January 1 expiration date, will be accepted and will require an additional \$50 late fee.

134.20(2) To be eligible for renewal, the licensee shall fulfill all continuing education requirements, along with any other requirements set forth in each license classification rule under Part C of this chapter. The department will consider all past disciplinary actions against the licensee when evaluating renewal eligibility.

[ARC 7946B, IAB 7/15/09, effective 8/19/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.21(455B) Conflict of interest. A licensed individual or a licensed company may not conduct a UST installation inspection at any facility at which the licensee is engaged in professional services which are regulated under Part C of this chapter, e.g., installations, modifications, repairs, or replacements of UST systems. A person working for a licensed company as an installer, liner, remover, or tester shall not provide services as an installation inspector on sites where UST systems are being installed or lined by the person's prior employer until six months after leaving the prior employer's licensed company. If a licensed individual leaves the employment of a licensed company, the licensed company shall notify the department within 30 days of that occurrence.

[ARC 7946B, IAB 7/15/09, effective 8/19/09]

567—134.22(455B) Duty to report. Any UST professional licensed under Part C of this chapter shall timely report suspected and confirmed releases within 24 hours of discovery (6 hours if a hazardous condition exists) as described in rule 567—135.6(455B) to the owner and operator on a form prescribed by the department. The UST professional shall recommend to the owner and operator any release confirmation actions or other investigatory and response actions which in the UST professional's judgment would be

consistent with the requirements of rule 567—135.6(455B). The UST professional shall submit a copy of the form to the department within seven days of discovering a confirmed release. The UST professional is not responsible for reporting a suspected release as described in rule 567—135.6(455B) directly to the department.

[ARC 7946B, IAB 7/15/09, effective 8/19/09]

567—134.23(455B) OSHA safety requirements. All licensed individuals and companies regulated under Part C of this chapter shall conduct their work as required by OSHA safety requirements defined under 29 CFR § 1910 (2006). OSHA standards apply whenever flammable, combustible, or hazardous materials are present, especially during the following activities:

1. Excavating, placing underground storage tank systems in excavations, and ballasting underground storage tank systems with flammable, combustible, or hazardous materials.
2. Purging, cleaning, and removal of underground storage tank systems which have contained flammable, combustible, or hazardous materials.
3. Testing as a part of an installation or after the system has been placed in service.

[ARC 7946B, IAB 7/15/09, effective 8/19/09]

567—134.24(455B) Installers.

134.24(1) Licensure qualifications. An installer of an underground storage tank system shall apply for a license as an installer and shall indicate on the license application the types of installations and upgrade procedures the installer intends to use. In addition to the licensing requirements listed under rule 567—134.19(455B), an installer must:

- a. Provide documentation of at least two years of relevant experience;
- b. Provide documentation of manufacturer certification for past installations and proof of current certification for future work including, but not limited to, tank systems, piping systems, leak detection and monitoring systems, and corrosion protection systems; and
- c. Have completed at least 40 hours of OSHA training.

134.24(2) Renewal qualifications. To be eligible for license renewal, an installer shall:

- a. Fulfill the department's continuing education requirements in rule 567—134.19(455B);
- b. Maintain manufacturer certification if available and notify the department within 30 days if the certification is lost; and
- c. Complete the annual eight-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) refresher course.

134.24(3) Responsibilities of installers. A licensed installer shall be on site during the performance of all work, including subcontracted work, for which the owner/operator has contracted to have completed by the installer. The licensed installer is responsible for all UST-related work at the site and must ensure that the performance of the work and the finished work conform to industry standards and codes and manufacturers' requirements.

a. *Notification.* The licensed installer is responsible for ensuring that all local installation permits and notice requirements are satisfied.

b. *Work performed.* UST system installation includes all work associated with the placement of the tanks, piping, pumps, dispensers, gauging systems, monitoring systems, corrosion protection, containment sumps, spill and overfill devices, and ancillary systems which, if installed incorrectly, could cause or delay detection of a leak. Installation specifically includes excavation, equipment placement, backfilling, piping, electrical work, testing calibration, and start-up. Tank installation also includes installation of the appropriate equipment to meet National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements (40 CFR §63.6580, Subpart ZZZZ), including submerged fill and vapor balance systems (Stage 1 vapor recovery) and the testing of those systems.

c. *Testing of UST equipment.* Spill prevention equipment, containment sumps and UDC at new installations must be tested to ensure the equipment is liquid-tight before the UST system is placed into service. Acceptable test methods include vacuum, pressure or liquid testing used in accordance with requirements developed by the manufacturer, a code of practice such as PEI RP1200 or methods

determined by the department to be no less protective of human health and the environment than the requirements listed in this subrule.

d. Proof of training. Installers shall have on their person at all times while on a UST job site a 40-hour general site worker program identification card or any valid refresher card that complies with OSHA standards.

134.24(4) Documentation of work performed. Installing a new UST system or upgrading a UST system requires an installer to submit the department forms and testing documents applicable to the installation, signed by the owner, to the department no later than 30 days after the final third-party inspection or 30 days after completion if no inspection is required. Each licensed installer responsible for the new system installation or the upgrading of an existing system shall sign DNR Form 148 as required by 567—paragraph 135.3(3)“e.” Secondary containment testing performed at installation or to meet periodic testing requirements shall be recorded on the department’s Secondary Containment Testing form. Test results shall be dated and signed by the licensed installer who performed the test.

[ARC 7946B, IAB 7/15/09, effective 8/19/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.25(455B) Testers.

134.25(1) Licensure and certification. A tester of underground storage tank systems shall apply for licensing as a tester and note on the license application the systems and method(s) of testing the tester will use, except that a person engaging in testing described in paragraph 134.25(2)“b” need not be licensed if that person is under the supervision of an individual licensed under Chapter 134, Part B or Part C, when conducting those tests. In addition to the licensing requirements listed under rule 567—134.19(455B), a tester shall provide documentation of the following:

- a.* Current manufacturer certification(s) for equipment being used for testing; and
- b.* Experience as documented by at least one of the following:
 - (1) One year of relevant experience.
 - (2) Completion of a minimum of 80 on-site tests with an Iowa-licensed tester.
 - (3) Other relevant experience as approved by the department.

134.25(2) Renewal qualifications. To be eligible for license renewal, a tester shall fulfill the department’s continuing education requirements in rule 567—134.19(455B) and shall maintain manufacturer certification or notify the department within 30 days if the certification is lost.

134.25(3) Responsibilities of testers. The licensed tester is responsible for testing tanks, lines, leak detection systems, or monitoring systems as required by 567—Chapter 135 and this chapter. An owner, operator or an employee of an owner or operator performing leak detection or cathodic protection monitoring, as required by 567—Chapter 135, is not a tester.

a. A precision test is required when the system is covered and is ready to be placed into service; a volumetric, nonvolumetric, or vacuum test may be used as a method for testing the system and a hydrostatic pressure test may be used for testing the lines. Systems used for leak detection or monitoring (such as statistical inventory reconciliation, vapor or water monitoring wells, or tracer-type tests) shall not be acceptable as a precision test at the completion of the installation of a new system or the upgrading of an existing system. Automatic in-tank gauging may be acceptable if third-party U.S. EPA approval as a precision test has been received for testing tanks.

b. A licensed tester may also perform periodic testing of spill prevention equipment and overfill devices, containment sumps and UDC as required by 567—Chapter 135. Spill prevention equipment, containment sumps and UDC at new installations must be tested to ensure the equipment is liquid-tight before the UST system is placed into service. Acceptable methods include vacuum, pressure or liquid testing used in accordance with requirements developed by the manufacturer, a code of practice such as PEI RP1200 or methods determined by the department to be no less protective of human health and the environment than the requirements listed in this subrule.

c. An individual licensed under Chapter 134, Part B or Part C, is not required to conduct periodic testing of spill prevention equipment, containment sumps, and UDC as required by 567—subrule 135.4(12).

134.25(4) *Exception to inspection requirement.* Installation inspectors are not required for the testing of underground storage tank systems, lines, leak detection, and cathodic protection as required by 567—Chapter 135 after the system has been put into service.

134.25(5) *Documentation of work performed.* A copy of the test results shall be attached to DNR Form 148 when testing is done in connection with a new installation or the upgrading of an existing underground storage tank system. The test results shall identify the tanks and piping tested, the test method employed, and the results of the test. Periodic testing shall be recorded on the department's Secondary Containment Testing form. Test results shall be dated and signed by the licensed tester who performed the tests.

[ARC 7946B, IAB 7/15/09, effective 8/19/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.26(455B) Liners. In addition to the licensing requirements listed under rule 567—134.19(455B), a liner shall provide documentation of at least two years of relevant experience, provide documentation of manufacturer certification for past linings and proof of current certification for future work, and have completed at least 40 hours of OSHA training.

134.26(1) *Renewal qualifications.* To be eligible for license renewal, a liner shall:

- a. Fulfill the department's continuing education requirements in rule 567—134.19(455B);
- b. Maintain manufacturer certification and immediately notify the department if the certification is lost; and
- c. Complete the annual eight-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) refresher course.

134.26(2) *Lining system investigation and installation requirements.*

a. *Inspection of internal lining.* A steel underground storage tank that satisfies the corrosion protection requirement as set forth in 567—subparagraph 135.3(2) “b”(1) by the addition of an internal lining shall be internally inspected within ten years of the date the tank was lined and every five years thereafter. The purpose of the inspection is to determine if the lining continues to perform according to the manufacturer's specifications, state and federal rules, and national standards and codes and to determine if the tank is still structurally sound. The department accepts both manned entry and video camera periodic inspections. The lining method employed must be specifically designed for the purpose, be compatible with the product stored, and meet acceptable federal and state standards as set forth in 567—Chapter 135.

b. *Integrity testing for tanks.* Liners shall verify structural integrity, to include thickness and strength of the underground storage tanks, whenever tanks are physically entered (manned entry) for periodic inspections. The following standards must be used for lining and periodic inspections and integrity testing:

(1) Physical (manned entry) inspection. American Petroleum Institute (API) Standard 1631: Interior Lining and Periodic Inspection of Underground Storage Tanks.

(2) Video camera inspection. API Standard 1631; “Recommended Practice for Inspecting Buried Lined Steel Tanks Using a Video Camera” developed by Ken Wilcox Associates Inc. (KWA), Methods A and C; and ASTM G-158 (approved prediction models).

(3) Repairs to lining. Standard 631 of the National Leak Prevention Association (NLPA): Entry, Cleaning, Interior Inspection, Repair and Lining of Underground Storage Tanks. Repaired lining must meet the requirements of API 1631 § 8.

(4) Documentation of the inspection. API 1631—Form C: Tank Re-Inspection Affidavit. Liners shall document any defects noted in the system including, but not limited to, holes and perforations using API 1631—Form C: Tank Re-Inspection Affidavit and shall include photographs of all methods of repair.

134.26(3) *Responsibilities of liners.* While on UST job sites, liners shall have on their person at all times a 40-hour general site worker program identification card or any valid refresher card that complies with OSHA standards.

134.26(4) *Documentation of work performed.* A liner shall submit the API 1631 report form to the department, certifying that all work was performed in accordance with applicable industry standards.

[ARC 7946B, IAB 7/15/09, effective 8/19/09]

567—134.27(455B) Installation inspectors. In addition to the licensing requirements listed under rule 567—134.19(455B), an installation inspector shall provide documentation of at least two years of

experience with underground storage installations, testing, inspecting, or design; documentation of manufacturer certification for past work; and proof of current certification for future work. An engineer who intends to apply for licensure as an installation inspector and who has met the requirements in Iowa to be a registered professional engineer (P.E.) may be exempt from the educational requirement so long as UST installation is in the scope of the engineer's P.E. license and regular practice as provided for in rule 567—134.19(455B). Engineers, however, are not exempt from fulfilling the examination requirement.

134.27(1) *Renewal qualifications.* To be eligible for license renewal, an installation inspector shall fulfill the department's continuing education requirements in rule 567—134.19(455B) and shall maintain manufacturer certification or notify the department within 30 days if the certification is lost.

134.27(2) *Documentation of work performed.*

a. A copy of the inspection report must be submitted within 14 days after the inspection is complete. Both the inspection form and DNR Form 148 must be received by the department before the UST system can be activated.

b. A licensed installation inspector shall inspect the job site a minimum of three times during the course of the new tank installation or system upgrade.

c. The installation inspector shall be present on site, shall visually observe all inspections, and shall be able to attest to the results. A video or other recording device showing the work completed by the installer shall not be used nor shall it be an acceptable method of providing independent inspection of the work completed.

134.27(3) *Inspections required.* Inspections are required when concrete is cut or excavation is required that could affect the integrity or operation of the UST system or when a component that routinely contains product is installed, replaced or repaired. Inspections shall occur when the component is uncovered and replaced or repaired and during testing when required (i.e., piping replacement or repair) but before operation recommences.

a. An inspection shall occur before the tanks or piping are installed.

b. An inspection shall occur before the covering of tank or piping, when all tanks and piping are exposed. The inspector shall witness testing of the primary and secondary piping and testing of the secondary containment, including sumps, under-dispenser containment (UDC), and secondary containment leak detection equipment.

c. A final inspection shall occur when all components are operational and the system has been covered, but before actual operation.

d. Whenever secondary containment (such as sumps or UDC) is installed, at least one inspection is required after the equipment is installed and before the system is backfilled.

134.27(4) *Inspection not required.* Replacing, repairing or installing the following does not require an inspection: drop tubes, overfill devices, spill buckets, installation of ATG systems, dispensers, submersible turbine pumps, automatic line leak detectors, internal lining and periodic inspections or lining repair, cathodic protection systems, interstitial sensors, flex connectors, and line and tank tightness testing.

134.27(5) *Pre-work notification requirement.*

a. A licensed company/individual hired by an owner/operator to perform work shall notify the owner's/operator's licensed installation inspector of choice prior to commencing work. Additionally, the owner/operator is responsible for supplying the name of the installation inspector if it is not a governmental entity to any state or local agency with rules affecting installations or upgrades.

b. The pre-work notice given to the installation inspector shall include, at a minimum, the following information:

(1) Description of the work planned.

(2) The licensed individual responsible for the work to be performed.

(3) A schedule of the work to be performed.

(4) A copy of the UST notification of intent to install form submitted to the department.

c. The installation inspector shall review the work plan, and any required changes by the installation inspector must be submitted to the company/individual prior to the beginning of the described work. An inspection schedule must be agreed upon before work commences. Changes to the work schedule, to

include the inspection schedule, because of weather or unforeseen job-site conditions shall be agreed upon as soon as the extenuating circumstances are recognized.

134.27(6) *Pre-installation and installation checklists.*

a. The licensed company/individual performing the work shall submit to both the installation inspector and the department a notification of intent to install form 30 days prior to an installation or upgrade.

b. Installation inspectors are required to use the department's installation inspection checklist. The installation inspection checklist must be submitted within 14 days following the tank installation inspection.

134.27(7) *Conflict of interest.* In addition to the conflict-of-interest provisions outlined in rule 567—134.21(455B), the following apply to installation inspectors:

a. If the installation inspector establishes a contract to perform inspection services for an owner/operator, or performs more than five inspections per calendar year for any one owner/operator, then the installation inspector is required to disclose that relationship in writing to the department within 30 days of the fifth inspection.

b. The department may require the owner/operator to seek alternative inspection services for any reason deemed prudent to ensure quality installations.

134.27(8) *Miscellaneous requirements.* An installation inspector has the right to postpone work or to stop work on a job if standards as outlined in Part C of this chapter are not followed by the installer. Furthermore, once an installation inspector has been placed on a job, that installation inspector cannot be replaced without the department's approval. Installation inspectors must verify that any local permit and notice requirements are in place.

[ARC 7946B, IAB 7/15/09, effective 8/19/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—134.28(455B) Removers. In addition to the licensing requirements listed under rule 567—134.19(455B), a remover shall provide documentation of at least two years of removal or other relevant experience and complete at least 40 hours of OSHA training. An engineer who intends to apply for licensure as a remover and who has met the requirements in Iowa to be a registered professional engineer (P.E.) may be exempt from the licensure requirements under rule 567—134.19(455B) so long as UST-related work is within the scope of the engineer's P.E. license and regular practice. Engineers are not exempt from fulfilling the examination requirement in subrule 134.19(6).

134.28(1) *Renewal qualifications.* To be eligible for license renewal, a remover shall:

- a. Fulfill the department's continuing education requirements in rule 567—134.19(455B);
- b. Comply with all local permitting and notice requirements;
- c. Comply with department-issued UST closure guidance; and
- d. Complete the annual eight-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) refresher course.

134.28(2) *Responsibilities and documentation of work performed.* A licensed remover shall be on site during the performance of all UST closure-related work, including subcontracted work, for which the owner/operator has contracted to have completed by the remover. Removers are responsible for ensuring that all work performed complies with the safety requirements of OSHA. Removers shall submit to the department a notification of closure form 30 days prior to the scheduled removal or fill in place as required in 567—subrule 135.15(2). Removers shall submit to the department the closure report within 45 days of removal or fill in place as required in 567—paragraph 135.15(3)“e.” Removers shall ensure that all local permits and notice requirements are satisfied. Removers shall have on their person at all times while on a UST job site a 40-hour general site worker program identification card or any valid refresher card that complies with OSHA standards. The closure investigation required by 567—subrule 135.15(3) may be conducted by a licensed remover if the remover is a certified groundwater professional licensed under Part A of this chapter. If the remover is not a certified groundwater professional, the remover may subcontract with a certified groundwater professional.

[ARC 7946B, IAB 7/15/09, effective 8/19/09]

567—134.29(455B) Disciplinary actions.

134.29(1) General policy. It is the policy of the department to enforce standards of professional and ethical conduct which are generally accepted within the professions which qualify a person for licensure in Iowa under Part C of this chapter. The department intends to investigate and enforce standards of conduct by a licensee which fall within the scope of the licensee's professional relationship with the department, the licensee's clients, and other state regulatory agencies. The department may impose disciplinary actions which may include, but are not limited to, notice of deficiency; probationary notices; and suspension, revocation, and denial of a license. The criteria identified in subrules 134.20(1) and 134.20(2) will be utilized by the department in deciding whether to issue an initial license or to renew a previously issued license.

134.29(2) Notice of deficiency or probation. A notice of deficiency or probationary notice shall not be an appealable decision. The recipient of a notice may contest the basis for the notice in writing, and such response shall be made part of the licensee's record. A person subject to a notice to suspend or revoke a license may appeal the notice as provided in 567—Chapter 7.

134.29(3) Suspension.

a. The department may suspend the license of any individual or company for good cause for either a single act or omission or repeated acts or omissions. The suspension of a company or individual licensee shall prevent the company or individual licensee from engaging in activities for which the license is required. The suspension may require the licensee to take remedial measures intended to correct or prevent future acts or omissions. Good cause includes, but is not limited to:

- (1) A violation of these rules.
- (2) Negligent misrepresentation of material facts in a report submitted to the department.
- (3) Incompetence on the part of the licensee as evidenced by errors in the performance of duties and activities for which the license was issued.
- (4) Repeated failure to submit reports of activities to the department or the owner/operator as provided in this chapter.

b. The department may require that the licensee complete a special training program, examination, or other remedial measures sponsored or approved by the department and designed to strengthen the specific weakness in the licensee's performance of duties as identified in the suspension order.

c. A licensed company or individual shall immediately surrender the applicable license to the department as of the effective date of a suspension order. The department may reinstate the license if it is determined that the company or individual has satisfied the terms of the suspension order and the license is not expired.

134.29(4) Revocation.

a. The department may revoke the license of a company or individual for one or more of the following:

- (1) Willful disregard of, or willful or repeated violations of, this chapter or 567—Chapter 135.
- (2) Fraudulent omissions or misstatements of material facts in a report or in other written or oral communications with the department.
- (3) A knowing and willful failure to detect and report a material violation of UST operation and maintenance standards.
- (4) Acts or omissions warranting suspension after a license was previously suspended.

b. A licensee shall immediately surrender the license after the effective date of the revocation decision.

[ARC 7946B, IAB 7/15/09, effective 8/19/09]

These rules are intended to implement Iowa Code section 455B.474 and chapter 252J.

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CHAPTER 135
TECHNICAL STANDARDS AND CORRECTIVE ACTION REQUIREMENTS FOR
OWNERS AND OPERATORS OF UNDERGROUND STORAGE TANKS

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—135.1(455B) Authority, purpose and applicability.

135.1(1) Authority. Iowa Code chapter 455B, division IV, part 8, authorizes the department to regulate underground tanks used for storage of regulated substances, and to adopt rules relating to detection, prevention and correction of releases of regulated substances from such tanks, maintenance of financial responsibility by owners or operators of such tanks, new tank performance standards, notice and reporting requirements, and designation of regulated substances.

135.1(2) Purpose. The purpose of these rules is to protect the public health and safety and the natural resources of Iowa by timely and appropriate detection, prevention and correction of releases of regulated substances from underground storage tanks (UST).

135.1(3) Applicability.

a. The requirements of this chapter apply to all owners and operators of a UST system as defined in rule 567—135.2(455B) except as otherwise provided in paragraphs 135.1(3) “*b*” and “*c*.”

(1) Previously deferred UST systems. Airport hydrant fuel distribution systems, UST systems with field-constructed tanks, and UST systems that store fuel solely for use by emergency power generators must meet the requirements of these rules as follows:

1. Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must meet the requirements in rule 567—135.21(455B).

2. UST systems that store fuel solely for use by emergency power generators installed on or before November 28, 2007, must meet the requirements in rule 567—135.5(455B) by October 13, 2021.

3. UST systems that store fuel solely for use by emergency power generators installed after November 28, 2007, must meet all applicable requirements of this chapter at installation.

(2) Any UST system listed in paragraph 135.1(3) “*c*” must meet the requirements of subrule 135.1(4).

b. Exclusions. The following UST systems are excluded from the requirements of this chapter:

(1) Any UST system holding hazardous wastes listed or identified under Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances.

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the federal Clean Water Act.

(3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks.

(4) Any UST system whose capacity is 110 gallons or less.

(5) Any UST system that contains a de minimis concentration of regulated substances.

(6) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

c. Partial exclusions. Rules 567—135.3(455B), 567—135.4(455B), 567—135.5(455B), 567—135.6(455B), 567—135.15(455B) and 567—135.21(455B) do not apply to any of the following types of UST systems:

(1) Wastewater treatment tank systems;

(2) Any UST systems containing radioactive material that are regulated under the federal Atomic Energy Act of 1954 (42 U.S.C. 2011 and following);

(3) Any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR 50 Appendix A;

(4) Aboveground storage tanks associated with:

1. Airport hydrant fuel distribution systems regulated under rule 567—135.21(455B); and

2. UST systems with field-constructed tanks regulated under rule 567—135.21(455B).

d. Nonpetroleum underground storage tank systems. Rules 567—135.8(455B) to 567—135.12(455B) do not apply to any nonpetroleum underground storage tank system except as otherwise provided for by the department.

135.1(4) *Installation requirements for partially excluded UST systems.*

a. Owners and operators must install a UST system listed in subparagraphs 135.1(3) “c”(1) to 135.1(3) “c”(3) storing regulated substances (whether of single- or double-wall construction) that meets the following requirements:

(1) Will prevent releases due to corrosion or structural failure for the operational life of the UST system;

(2) Is cathodically protected against corrosion, constructed of noncorrodible material, steel clad with a noncorrodible material, or designed in a manner to prevent the release or threatened release of any stored substance; and

(3) Is constructed or lined with material that is compatible with the stored substance.

b. Notwithstanding paragraph 135.1(4) “a,” a UST system without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life. Owners and operators must maintain records that demonstrate compliance with the requirements of this paragraph for the remaining life of the tank.

NOTE: The following codes of practice may be used as guidance for complying with this subrule.

- NACE International Standard RP-02-85, Practice SP 0285, “External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection”;

- NACE International Standard Practice SP 0169, “Control of External Corrosion on Metallic Buried, Partially Buried, Underground or Submerged Metallic Piping Systems”;

- American Petroleum Institute Recommended Practice 1632, “Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems”; or

- Steel Tank Institute Recommended Practice R892, “Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems.”

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.2(455B) Definitions.

“Aboveground release” means any release to the surface of the land or to surface water. This includes, but is not limited to, releases from the aboveground portion of a UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from a UST system.

“Active remediation” means corrective action undertaken to reduce contaminant concentrations by other than passive remediation or monitoring.

“Airport hydrant fuel distribution system” or “airport hydrant system” means a UST system which fuels aircraft and operates under high pressure with large diameter piping that typically terminates into one or more hydrants (fill stands). The airport hydrant system begins where fuel enters one or more tanks from an external source such as a pipeline, barge, rail car, or other motor fuel carrier.

“Ancillary equipment” means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from a UST.

“Appurtenances” means devices such as piping, fittings, flanges, valves, dispensers and pumps used to distribute, meter, or control the flow of regulated substances to or from an underground storage tank.

“Asbestos-cement pipe” (AC refers to asbestos-cement) means a pipe or conduit constructed of asbestos fiber and Portland cement, which can be used to transport water.

“ASTM” means the American Society of Testing and Materials.

“Backflow preventer” means a check valve used to ensure water flows in one direction and designed to prevent contamination from an end user, such as a home, from getting into the general water supply. An approved backflow preventer shall be a reduced-pressure backflow preventer or an antisiphon device which complies with the standards of the American Water Works Association and has been approved by the Foundation for Cross-Connection Control and Hydraulic Research.

“Bedrock” means the rock, usually solid, underlying soil or any other unconsolidated surficial cover.

“Below-ground release” means any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the below-ground portions of an underground storage tank system and below-ground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.

“Beneath the surface of the ground” means beneath the ground surface or otherwise covered with earthen materials.

“Best available technology” means those practices which most appropriately remove, treat, or isolate contaminants from groundwater, soil or associated environment, as determined through professional judgment considering actual equipment or techniques currently in use, published technical articles, site hydrogeology and research results, engineering and groundwater professional reference materials, consultation with experts in the field, capital and operating costs, and guidelines or rules of other regulatory agencies.

“Best management practices” means maintenance procedures, schedule of activities, prohibition of practices, and other management practices, or a combination thereof, which, after problem assessment, is determined to be the most effective means of monitoring and preventing additional contamination of the groundwater and soil.

“Biodiesel” means a renewable fuel comprised of mono-alkyl esters of long-chain fatty acids derived from vegetable oils or animal fats, that is blended with petroleum-based diesel fuel, which meets the standards provided in Iowa Code section 214A.2.

“Carcinogenic risk” means the incremental risk of a person developing cancer over a lifetime as a result of exposure to a chemical, expressed as a probability such as one in a million (10^{-6}). For carcinogenic chemicals of concern, probability is derived from application of certain designated exposure assumptions and a slope factor.

“Cast iron pipe” means a pipe or conduit used as a pressure pipe for transmission of water, gas, or sewage or as a water drainage pipe. It comprises predominantly a gray cast iron tube historically used uncoated, with newer types having various coatings and linings to reduce corrosion and improve hydraulics.

“Cathodic protection” is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

“Cathodic protection tester” means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

“CERCLA” means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended.

“Certified groundwater professional” means a person certified pursuant to Iowa Code section 455B.474 and 567—Chapter 134, Part A.

“Change-in-service” means changing the use of a tank system from a regulated to a nonregulated use.

“Chemicals of concern” means the compounds derived from petroleum-regulated substances which are subject to evaluation for purposes of applying risk-based corrective action decision making. These compounds are benzene, ethylbenzene, toluene, and xylenes (BTEX) and naphthalene, benzo(a)pyrene, benz(a)anthracene, and chrysene. (NOTE: Concentration values for these last four constituents are determined by a conversion method from total extractable hydrocarbons, see subrule 135.8(3).)

“Class A operator” means the individual who has primary responsibility to operate and maintain the UST system in accordance with applicable requirements. The Class A operator typically manages resources and personnel, such as establishing work assignments, to achieve and maintain compliance with regulatory requirements under this chapter.

“Class B operator” means the individual who has day-to-day responsibility for implementing applicable regulatory requirements established by the department. The Class B operator typically implements in-field aspects of operation, maintenance, and associated record keeping for the UST systems.

“Class C operator” means the individual responsible for initially addressing emergencies presented by a spill or release from a UST system. The Class C operator typically controls or monitors the dispensing or sale of regulated substances.

“*Compatible*” means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

“*Conduit*” means underground structures which act as pathways and receptors for chemicals of concern, including but not limited to gravity drain lines and sanitary or storm sewers.

“*Connected piping*” means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.

“*Consumptive use*” with respect to heating oil means consumed on the premises.

“*Containment sump*” means a liquid-tight container that protects the environment by containing leaks and spills of regulated substances from piping, dispensers, pumps and related components in the containment area. Containment sumps may be single-walled or secondarily contained and located at the top of the tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump).

“*Corrective action*” means an action taken to reduce, minimize, eliminate, clean up, control or monitor a release to protect the public health and safety or the environment. Corrective action includes, but is not limited to, excavation of an underground storage tank for the purpose of repairing a leak or removal of a tank, removal of contaminated soil, disposal or processing of contaminated soil, cleansing of groundwaters or surface waters, natural biodegradation, institutional controls, technological controls and site management practices. Corrective action does not include replacement of an underground storage tank. Corrective action specifically excludes third-party liability.

“*Corrective action meeting process*” means a series of meetings organized by department staff with owners or operators and other interested parties such as certified groundwater professionals, funding source representatives, and affected property owners. The purpose of the meeting process is to develop and agree on a corrective action plan and the terms for implementation of the plan.

“*Corrective action plan*” means a plan which specifies the corrective action to be undertaken by the owner or operator in order to comply with requirements in this chapter and which is incorporated into a memorandum of agreement or other written agreement between the department and the owner or operator. The plan may include but is not limited to provisions for additional site assessment, site monitoring, Tier 2 revisions, Tier 3 assessment, excavation, and other soil and groundwater remedial action.

“*Corrosion expert*” means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

“*Department*” means Iowa department of natural resources.

“*Dielectric material*” means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST systems (e.g., tank from piping).

“*Dispenser*” means equipment located above ground that dispenses regulated substances from the UST system.

“*Dispenser system*” means the dispenser and the equipment necessary to connect the dispenser to the underground storage tank system.

“*Drinking water well*” means any groundwater well used as a source for drinking water by humans and groundwater wells used primarily for the final production of food or medicine for human consumption.

“*Ductile iron pipe*” means a pipe or conduit commonly used for potable water distribution and for the pumping of sewage. The predominant wall material is ductile iron, a spheroidized graphite cast iron, and commonly has an internal cement mortar lining to inhibit corrosion from the carried water and various types of external coatings to inhibit corrosion from the environment.

“Electrical equipment” means underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.

“Enclosed space” means space which can act as a receptor or pathway capable of creating a risk of explosion or inhalation hazard to humans and includes “explosive receptors” and “confined spaces.” Explosive receptors means those receptors designated in these rules which are evaluated for explosive risk. Confined spaces means those receptors designated in these rules for evaluation of vapor inhalation risks.

“Ethanol” means ethyl alcohol that is to be blended with gasoline if it meets the standards provided in Iowa Code section 214A.2.

“Excavation zone” means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

“Existing tank system” means a tank system used to contain an accumulation of regulated substances or for which installation has commenced on or before January 14, 1987. Installation is considered to have commenced if:

The owner or operator has obtained all federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system; and if,

1. Either a continuous on-site physical construction or installation program has begun; or,
2. The owner or operator has entered into contractual obligations, which cannot be canceled or modified without substantial loss, for physical construction at the site or installation of the tank system to be completed within a reasonable time.

“Farm tank” is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. “Farm” includes fish hatcheries, rangeland and nurseries with growing operations.

“Field-constructed tank” means a tank constructed in the field. For example, a tank constructed of concrete that is poured in the field or a steel or fiberglass tank primarily fabricated in the field is considered field-constructed.

“Flow-through process tank” is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

“Free product” refers to a regulated substance that is present as a light nonaqueous phase liquid (e.g., liquid not dissolved in water).

“Gasket” means any type of pipe seals made of a variety of rubbers including but not necessarily limited to styrene-butadiene rubber (SBR), nitrile-butadiene rubber (NBR or nitrile), ethylene propylene diene monomer (EPDM), neoprene (CR), and fluoroelastomer rubber (FKM), which are used to seal pipe connections.

“Gathering lines” means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.

“Groundwater ingestion pathway” means a pathway through groundwater by which chemicals of concern may result in exposure to a human receptor as specified in rules applicable to Tier 1, Tier 2 and Tier 3.

“Groundwater plume” means the extent of groundwater impacted by the release of chemicals of concern.

“Groundwater to water line pathway” means a pathway through groundwater which leads to a water line.

“Groundwater vapor to enclosed space pathway” means a pathway through groundwater by which vapors from chemicals of concern may lead to a receptor creating an inhalation or explosive risk hazard.

“Hazardous substance UST system” means an underground storage tank system that contains a hazardous substance defined in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (but not including any substance regulated as a hazardous waste

under subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system.

“Hazard quotient” means the ratio of the level of exposure of a chemical of concern over a specified time period to a reference dose for that chemical of concern derived for a similar exposure period. Unless otherwise specified, the hazard quotient designated in these rules is one.

“Heating oil” means petroleum that is No. 1, No. 2, No. 4-light, No. 4-heavy, No. 5-light, No. 5-heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.

“Highly permeable soils” means for the purpose of UST closures: fractured bedrock, any soils with a hydraulic conductivity rate greater than 0.3 meters per day, or any soil material classified by the Unified Soil Classification System as published by the United States Department of the Interior or ASTM designation as (1) GW - well graded gravel, gravel-sand mixtures, little or no fines, (2) GP - poorly graded gravel, gravel-sand mixtures, little or no fines, (3) SW - well graded sands, gravelly sands, little or no fines, or (4) SP - poorly graded sands, gravelly sands, little or no fines.

“Hydraulic conductivity” means the rate of water movement through the soil measured in meters per day (m/d) as determined by the following methods. For a saturated soil, the Bouwer-Rice method or its equivalent shall be used. For unsaturated soil, use a Guelph permeameter or an equivalent in situ constant-head permeameter in a boring finished above the water table. If an in situ method cannot be used for unsaturated soil because of depth, or if the soil is homogeneous and lacks flow-conducting channels, fractures, cavities, etc., laboratory measurement of hydraulic conductivity is acceptable.

If laboratory methods are used, collect undisturbed soil samples using a thin-walled tube sampler in accordance with American Society of Testing and Materials (ASTM) Standard D1587. Samples shall be clearly marked, preserved and transported to the laboratory. The laboratory shall measure hydraulic conductivity using a constant-head permeameter in accordance with ASTM Standard D2434 or a falling-head permeameter in accordance with accepted methodology.

“Hydraulic lift tank” means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.

“Institutional controls” means the restriction on use or access (for example, fences, deed restrictions, restrictive zoning) to a site or facility to eliminate or minimize potential exposure to a chemical(s) of concern. Institutional controls include any of the following:

1. A law of the United States or the state;
2. A regulation issued pursuant to federal or state laws;
3. An ordinance or regulation of a political subdivision in which real estate subject to the institutional control is located;
4. A restriction on the use of or activities occurring at real estate which are embodied in a covenant running with the land which:
 - Contains a legal description of the real estate in a manner which satisfies Iowa Code section 558.1 et seq.;
 - Is properly executed, in a manner which satisfies Iowa Code section 558.1 et seq.;
 - Is recorded in the appropriate office of the county in which the real estate is located;
 - Adequately and accurately describes the institutional control; and
 - Is in the form of a covenant as set out in Appendix C or in such a manner reasonably acceptable to the department.
5. Any other institutional control the owner or operator can reasonably demonstrate to the department which will reduce the risk from a release throughout the period necessary to ensure that no applicable target risk is likely to be exceeded.

“Light, nonaqueous-phase liquid” or *“LNAPL”* refers to an organic compound that is immiscible with, and lighter than water (e.g., crude oil, gasoline, diesel fuel, heating oil).

“Liquid trap” means sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent

disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.

“Maintenance” means the normal operational upkeep to prevent an underground storage tank system from releasing product.

“MCLs” means the drinking water primary maximum contaminant levels set out in 567—41.3(455B).

“Memorandum of agreement” means a written agreement between the department and the owner or operator which specifies the corrective action that will be undertaken by the owner or operator in order to comply with requirements in this chapter and the terms for implementation of the plan. The plan may include but is not limited to provisions for additional site assessment, site monitoring, Tier 2 revisions, Tier 3 assessment, excavation, and other soil and groundwater remedial action.

“Motor fuel” means a complex blend of hydrocarbons typically used in the operation of a motor engine, such as motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any blend containing one or more of these substances (for example, motor gasoline blended with alcohol).

“New tank system” means a tank system that will be used to contain an accumulation of regulated substances and for which installation has commenced after January 14, 1987. (See also “Existing Tank System.”)

“Noncarcinogenic risk” means the potential for adverse systemic or toxic effects caused by exposure to noncarcinogenic chemicals of concern, expressed as the hazard quotient.

“Noncommercial purposes” with respect to motor fuel means not for resale.

“Non-drinking water well” means any groundwater well (except an extraction well used as part of a remediation system) not defined as a drinking water well including a groundwater well which is not properly plugged in accordance with department rules in 567—Chapters 39 and 49.

“Nonresidential area” means land which is not currently used as a residential area and which is zoned for nonresidential uses.

“On the premises where stored” with respect to heating oil means UST systems located on the same property where the stored heating oil is used.

“Operational life” refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under rule 567—135.15(455B).

“Operator” means any person in control of, or having responsibility for, the daily operation of the UST system.

“Overexcavation” refers to the excavation of subsurface materials outside the excavation zone for the purpose of removing contaminated substances.

“Overflow release” is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

“Owner” means:

1. In the case of a UST system in use on July 1, 1985, or brought into use after that date, any person who owns a UST system used for storage, use, or dispensing of regulated substances; and
2. In the case of any UST system in use before July 1, 1985, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use.

Owner does not include a person or institution, who, without participating in the management or operation of the underground storage tank or the tank site or engaging in petroleum production, refining or marketing, holds indicia of ownership primarily to protect that person’s security interest in the underground storage tank or the tank site property, prior to obtaining ownership or control through debt enforcement, debt settlement, or otherwise.

“Pathway” means a transport mechanism by which chemicals of concern may reach a receptor(s) or the location(s) of a potential receptor.

“Permanent closure” means removing all regulated substances from the tank system, assessing the site for contamination, and permanently removing tank and piping from the ground or filling the tank in place with a solid inert material and plugging all piping. Permanent closure also includes partial closure of a tank system such as removal or replacement of tanks or piping only.

“Person” means an individual, trust, firm, joint stock company, federal agency, corporation, state, municipality, commission, political subdivision of a state, or any interstate body. *“Person”* also includes a consortium, a joint venture, a commercial entity, and the United States government.

“Person who conveys or deposits a regulated substance” means a person who sells or supplies the owner or operator with the regulated substance and the person who transports or actually deposits the regulated substance in the underground tank.

“Petroleum UST system” means an underground storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

“Pipe” or *“piping”* means a hollow cylinder or tubular conduit that is constructed of nonearthen materials and that routinely contains and conveys regulated substances.

“Pipeline facilities (including gathering lines)” are new and existing pipe rights-of-way and any associated equipment, facilities, or buildings.

“Point of compliance” means the location(s) at the source(s) of contamination or at the location(s) between the source(s) and the point(s) of exposure where concentrations of chemicals of concern must meet applicable risk-based screening levels at Tier 1 or other target level(s) at Tier 2 or Tier 3.

“Point of exposure” means the location(s) at which an actual or potential receptor may be exposed to chemicals of concern via a pathway.

“Polybutylene pipe” (PB refers to polybutylene) means a water supply pipe comprised of a form of plastic resin that was used extensively from 1978 until 1995. The piping systems were used for underground water mains and as interior water distribution piping. Polybutylene mains are usually blue in color, but may be gray, black, or white. The pipe is usually ½ inch or 1 inch in diameter, and it may be found entering a residence through the basement wall or floor, concrete slab or through the crawlspace; frequently it enters the residence near the water heater.

“Polyethylene pipe” (PE refers to polyethylene) means a water supply pipe comprised of thermoplastic material produced from the polymerization of ethylene. PE pipe is manufactured by extrusion in sizes ranging from ½ inch to 63 inches. PE pipe is available in rolled coils of various lengths or in straight lengths of up to 40 feet. PE pipe is available in many forms and colors, including single-extrusion colored or black pipe, black pipe with co-extruded color striping, and black or natural pipe with a co-extruded colored layer. PE pipe has been demonstrated to be very permeable to petroleum while still retaining its flexible structure.

“Polyvinyl chloride pipe” (PVC refers to polyvinyl chloride) means a pipe made from a plastic and vinyl combination material. The pipes are durable, hard to damage, and long-lasting. A PVC pipe is very resistant and does not rust, nor is it likely to rot or wear over time. PVC piping is most commonly used in water systems, underground wiring, and sewer lines.

“Portland cement” means hydraulic cement (cement that not only hardens by reacting with water but also forms a water-resistant product) and is produced by pulverizing clinkers consisting essentially of hydraulic calcium silicates, usually containing one or more forms of calcium sulfate as an inter ground addition.

“Potential receptor” means a receptor not in existence at the time a Tier 1, Tier 2 or Tier 3 site assessment is prepared, but which could reasonably be expected to exist within 20 years of the preparation of the Tier 1, Tier 2 or Tier 3 site assessment or as otherwise specified in these rules.

“Preferential pathway” means conditions which act as a pathway permitting contamination to migrate through soils and to groundwater at a faster rate than would be expected through naturally occurring undisturbed soils or unfractured bedrock including but not limited to wells, cisterns, tile lines, drainage systems, utility lines and envelopes, and conduits.

“Protected groundwater source” means a saturated bed, formation, or group of formations which has a hydraulic conductivity of at least 0.44 meters per day (m/d) and a total dissolved solids of less than 2,500 milligrams per liter (mg/l) or a bedrock aquifer with total dissolved solids of less than 2,500 milligrams per liter (mg/l) if bedrock is encountered before groundwater.

“Public water supply well” means a well connected to a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

“Receptor” means enclosed spaces, conduits, protected groundwater sources, drinking and non-drinking water wells, surface water bodies, and public water systems which when impacted by chemicals of concern may result in exposure to humans and aquatic life, explosive conditions or other adverse effects on health, safety and the environment as specified in these rules.

“Reference dose” means a designated toxicity value established in these rules for evaluating potential noncarcinogenic effects in humans resulting from exposure to a chemical(s) of concern. Reference doses are designated in Appendix A.

“Regulated substance” means an element, compound, mixture, solution or substance which, when released into the environment, may present substantial danger to the public health or welfare or the environment. Regulated substance includes:

1. Substances designated in Table 302.4 of 40 CFR Part 302 (September 13, 1988),
2. Substances which exhibit the characteristics identified in 40 CFR 261.20 through 261.24 (May 10, 1984) and which are not excluded from regulation as a hazardous waste under 40 CFR 261.4(b) (May 10, 1984),
3. Any substance defined in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (but not including any substance regulated as a hazardous waste under subtitle C), and
4. Petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute). The term “regulated substance” includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

“Release” means any spilling, leaking, emitting, discharging, escaping, leaching or disposing of a regulated substance, including petroleum, from a UST into groundwater, surface water or subsurface soils.

“Release detection” means determining whether a release of a regulated substance has occurred from the UST system into the environment or a leak has occurred into the interstitial space between the UST system and its secondary barrier or secondary containment around it.

“Repair” means to restore to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly.

“Replace” or *“replacement”* means the installation of a new underground tank system or component, including dispensers, in substantially the same location as an existing tank system or component.

“Replaced” means:

1. For a tank: to remove a tank and install another tank.
2. For piping: to remove 50 percent or more of piping and install other piping, excluding connectors, connected to a single tank. For tanks with multiple piping runs, this definition applies independently to each piping run.

“Residential area” means land used as a permanent residence or domicile, such as a house, apartment, nursing home, school, child care facility or prison, land zoned for such uses, or land where no zoning is in place.

“Residential tank” is a tank located on property used primarily for dwelling purposes.

“Risk-based screening level (RBSL)” means the risk-based concentration level for chemicals of concern developed for a Tier 1 analysis to be met at the point(s) of compliance and incorporated in the Tier 1 Look-up Table in Appendix A.

“SARA” means the federal Superfund Amendments and Reauthorization Act of 1986.

“Secondary containment” or *“secondarily contained”* means a release prevention and release detection system for a tank or piping. This system has an inner and outer barrier with an interstitial space monitored for leaks. This term includes containment sumps when used for interstitial monitoring of piping.

“*Secondary containment tank*” or “*secondary containment piping*” means a tank or piping which is designed with an inner primary shell and a liquid-tight outer secondary shell or jacket which extends around the entire inner shell, and which is designed to contain any leak through the primary shell from any part of the tank or piping that routinely contains product, and which also allows for monitoring of the interstitial space between the shells and the detection of any leak.

“*Septic tank*” is a watertight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility.

“*Service line*” means a pipe connected to a business or residence from a water main, typically of a size not exceeding 6 inches in diameter, and including its gaskets and other appurtenances. For purposes of this chapter, service lines refer to pipes specifically used for drinking water transmission.

“*Site assessment investigation*” means an investigation conducted by a certified groundwater professional to determine relevant site historical data, the types, amounts, and sources of petroleum contaminants present, hydrogeological characteristics of the site, full vertical and horizontal extent of the contamination in soils and groundwater, direction and rate of flow of the contamination, ranges of concentration of the contaminants by analysis of soils and groundwater, the vertical and horizontal extent of the contamination exceeding department standards, and the actual or potential threat to public health and safety and the environment.

“*Site cleanup report*” means the report required to be submitted by these rules and in accordance with department guidance which may include the results of Tier 2 or Tier 3 assessment and analysis.

“*Site-specific target level (SSTL)*” means the risk-based target level(s) for chemicals of concern developed as the result of a Tier 2 or Tier 3 assessment which must be achieved at applicable point(s) of compliance at the source to meet the target level(s) at the point(s) of exposure.

“*Soil leaching to groundwater pathway*” means a pathway through soil by which chemicals of concern may leach to groundwater and through a groundwater transport pathway impact an actual or potential receptor.

“*Soil plume*” means the vertical and horizontal extent of soil impacted by the release of chemicals of concern.

“*Soil to water line pathway*” means a pathway which leads from soil to a water line.

“*Soil vapor to enclosed space pathway*” means a pathway through soil by which vapors from chemicals of concern may lead to a receptor creating an inhalation or explosive risk hazard.

“*Storm water or wastewater collection system*” means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.

“*Surface impoundment*” is a natural topographic depression, constructed excavation, or diked area formed primarily of earthen materials (although it may be lined with manufactured materials) that is not an injection well.

“*Surface water body*” means general use segments as provided in 567—paragraph 61.3(1)“a” and designated use segments of water bodies as provided in 567—paragraph 61.3(1)“b” and 567—subrule 61.3(5).

“*Surface water criteria*” means, for chemicals of concern, the Criteria for Chemical Constituents in Table 1 of rule 567—61.3(455B), except that “1,000 ug/L” will be substituted for the chronic levels for toluene for Class B designated use segments.

“*Surface water pathway*” means a pathway which leads to a surface water body.

“*Tank*” is a stationary device designed to contain an accumulation of regulated substances and constructed of nonearthen materials (e.g., concrete, steel, plastic) that provide structural support.

“*Target level*” means the allowable concentrations of chemicals of concern established to achieve an applicable target risk which must be met at the point(s) of compliance as specified in these rules.

“Target risk” refers to an applicable carcinogenic and noncarcinogenic risk factor designated in these rules and used in determining target levels (for carcinogenic risk assessment, target risk is a separate factor, different from exposure factors, both of which are used in determining target levels).

“Technological controls” means a physical action which does not involve source removal or reduction, but severs or reduces exposure to a receptor, such as caps, containment, carbon filters, point of use water treatment, etc.

“Temporary closure” means a regulated tank or UST system that has been out of operation for three months or more.

“Tier 1 level” means the groundwater and soil levels in the Tier 1 Look-up Table set out in rule 135.9(455B) and Appendix A.

“Tier 1 site assessment” means the evaluation of limited site-specific data compared to the Tier 1 levels established in these rules for the purpose of determining which pathways do not require assessment and evaluation at Tier 2 and which sites warrant a no further action required classification without further assessment and evaluation.

“Tier 2 site assessment” means the process of assessing risk to actual and potential receptors by using site-specific contaminant concentrations and designated Tier 2 exposure and fate and transport models to determine the applicable target level(s).

“Tier 3 site assessment” means a site-specific risk assessment utilizing more sophisticated data or analytic techniques than a Tier 2 site assessment.

“Training program” means any program that provides information to and evaluates the knowledge of a Class A, Class B, or Class C operator through testing, practical demonstration, or another approach acceptable to the department regarding requirements for UST systems that meet the requirements of subrules 135.4(6) to 135.4(12).

“Under-dispenser containment (UDC)” means containment underneath a dispenser system designed to prevent leaks from the dispenser and piping within or above the UDC from reaching soil or groundwater.

“Underground area” means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.

“Underground release” means any below-ground release.

“Underground storage tank” or *“UST”* means any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include any:

a. Farm or residential tank of 1100 gallons or less capacity used for storing motor fuel for noncommercial purposes. Iowa Code section 455B.473(4) requires those tanks existing prior to July 1, 1987, to be registered. Tanks installed on or after July 1, 1987, must comply with all 567—Chapter 135 rules;

b. Tank used for storing heating oil for consumptive use on the premises where stored;

c. Septic tank;

d. Pipeline facility (including gathering lines):

(1) Which is regulated under 49 U.S.C. Chapter 601, or

(2) Which is an intrastate pipeline facility regulated under state laws as provided in 49 U.S.C. Chapter 601 and which is determined by the Secretary of Transportation to be connected to a pipeline, or to be operated or intended to be capable of operating at pipeline pressure or as an integral part of a pipeline;

e. Surface impoundment, pit, pond, or lagoon;

f. Storm-water or wastewater collection system;

g. Flow-through process tank;

h. Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

i. Storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term “underground storage tank” or “UST” does not include any pipes connected to any tank which is described in paragraphs “a” through “i” of this definition.

“Underground storage tank professional” or *“UST professional”* means an individual licensed by the department under 567—Chapter 134, Part C. The licensing program includes underground storage tank system installation, installation inspection, UST system testing, tank lining, cathodic protection installation/inspection, and UST removal. The license issued will list the type of work the individual is licensed to perform.

“Underground utility vault” means any constructed space accessible for inspection and maintenance associated with subsurface utilities.

“Unreasonable risk to public health and safety or the environment” means the Tier 1 levels for a Tier 1 site assessment, the applicable target level for a Tier 2 site assessment, and the applicable target level for a Tier 3 site assessment.

“Upgrade” means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of product.

“UST system” or *“tank system”* means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.

“Utility envelope” means the backfill and trench used for any subsurface utility line, drainage system and tile line.

“Wastewater treatment tank” means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

“Water line” means a hollow cylinder or tubular conduit that routinely contains and conveys potable water and is constructed of nonearthen materials, including but not limited to asbestos-cement, copper, high-density polyethylene (HDPE), polybutylene, polyethylene, and wood. Such piping includes any elbows, couplings, unions, valves, or other in-line fixtures, as well as the gaskets, which contain and convey potable water.

“Water main pipe” means a main line to the water distribution system with feeder lines or service lines connected to it and which typically is 6 inches or greater in diameter, and includes its gaskets and other appurtenances.

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567—135.3(455B) UST systems—design, construction, installation and notification.

135.3(1) Performance standards for new UST systems. In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, all owners and operators of new UST systems must meet the following requirements. The UST system must be secondarily contained in accordance with subrule 135.3(9).

a. Tanks. Each tank must be properly designed and constructed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

- (1) The tank is constructed of fiberglass-reinforced plastic; or

NOTE: The following codes of practice may be used to comply with subparagraph 135.3(1)“a”(1): Underwriters Laboratories Standard 1316, “Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures” or Underwriters Laboratories of Canada S615, “Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids.”

- (2) The tank is constructed of steel and cathodically protected in the following manner:

1. The tank is coated with a suitable dielectric material;
2. Field-installed cathodic protection systems are designed by a corrosion expert;
3. Impressed current systems are designed to allow determination of current operating status as required in paragraph 135.4(2)“c.” This shall be accomplished by providing the rectifier with ampere and voltage meters that can be read by the owner and operator for comparison to the design standard set by the corrosion expert or a device that can warn the owner and operator when changes in ampere and voltage occur outside the design standard set by the corrosion expert;

4. Cathodic protection systems are operated and maintained in accordance with subrule 135.4(2) or according to guidelines established by the department; and

5. Impressed current systems must be designed not to cause stray current that can damage other underground structures (metal electrical conduits, water lines, gas lines, etc.); or

NOTE: The following codes of practice may be used to comply with subparagraph 135.3(1) “a”(2):

- Steel Tank Institute “Specification STI-P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks”;

- Underwriters Laboratories Standard 1746, “External Corrosion Protection Systems for Steel Underground Storage Tanks”;

- Underwriters Laboratories of Canada S603, “Standard for Steel Underground Tanks for Flammable and Combustible Liquids,” and S603.1, “Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids,” and S631, “Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems”;

- Steel Tank Institute Standard F841, “Standard for Dual Wall Underground Steel Storage Tanks”; or

- NACE International Standard Practice SP 0285, “External Corrosion Control of Underground Storage Systems by Cathodic Protection,” and Underwriters Laboratories Standard 58, “Standard for Steel Underground Tanks for Flammable and Combustible Liquids.”

(3) The tank is constructed of steel and clad or jacketed with a noncorrodible material; or

NOTE: The following industry codes may be used to comply with subparagraph 135.3(1) “a”(3):

- Underwriters Laboratories Standard 1746, “Corrosion Protection Systems for Underground Storage Tanks”;

- Steel Tank Institute ACT-100® Specification F894, “Specification for External Corrosion Protection of FRP Underground Storage Tanks”;

- Steel Tank Institute ACT-100-U® Specification F961, “Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks”; or

- Steel Tank Institute Specification F922, “Steel Tank Institute Specification for Permatank®.”

(4) The tank is constructed of metal without additional corrosion protection measures provided that:

1. The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and

2. Owners and operators maintain records that demonstrate compliance with the requirements of paragraph 135.3(1) “a”(4)“1” for the remaining life of the tank; or

(5) The tank construction and corrosion protection are determined by the department to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than subparagraphs 135.3(1) “a”(1) to (4).

b. Piping. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified in this rule. This includes piping for remote tank fill locations.

All piping must have secondary containment, installed according to manufacturer’s specifications, and be compatible with the product stored and the environment to which it will be exposed. Piping must maintain its original specifications and structural integrity. Piping whose structural integrity has degraded must be replaced. All piping installations must meet National Fire Prevention Association Standard 30 and Standard 30A or the International Fire Code as adopted by the Iowa state fire marshal in 661—Chapter 221, “Flammable and Combustible Liquids.”

(1) The piping is constructed of a noncorrodible material; or

NOTE: The following codes of practice may be used to comply with subparagraph 135.3(1) “b”(1):

- Underwriters Laboratories Standard 971, “Nonmetallic Underground Piping for Flammable Liquids”; or

- Underwriters Laboratories of Canada Standard S6660, “Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids.”

(2) The piping is constructed of steel and cathodically protected in the following manner:

1. The piping is coated with a suitable dielectric material;

2. Field-installed cathodic protection systems are designed by a corrosion expert;

3. Impressed current systems are designed to allow determination of current operating status as required in paragraph 135.4(2) “c”; and

4. Cathodic protection systems are operated and maintained in accordance with subrule 135.4(2) or guidelines established by the department; or

NOTE: The following codes of practice may be used to comply with subparagraph 135.3(1) “b”(2):

- American Petroleum Institute Recommended Practice 1632, “Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems”;

- Underwriters Laboratories Subject 971A, “Outline of Investigation for Metallic Underground Fuel Pipe”;

- Steel Tank Institute Recommended Practice R892, “Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems”;

- NACE International Standard Practice SP 0169, “Control of External Corrosion on Underground or Submerged Metallic Piping Systems”;

- NACE International Standard Practice SP 0285, “External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection”; or

- National Fire Protection Association Standard 30, “Flammable or Combustible Liquids Code.”

(3) The piping is constructed of metal without additional corrosion protection measures provided that:

1. The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life; and

2. Owners and operators maintain records that demonstrate compliance with the requirements of paragraph 135.3(1) “b”(3) “1” for the remaining life of the piping; or

(4) The piping construction and corrosion protection are determined by the department to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in subparagraphs 135.3(1) “b”(1) to (3).

c. *Spill and overfill prevention equipment.*

(1) Except as provided in subparagraph 135.3(1) “b”(2), to prevent spilling and overfilling associated with product transfer to the UST system, owners and operators must use the following spill and overfill prevention equipment:

1. Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill pipe (for example, a spill catchment basin); and

2. Overfill prevention equipment that will:

- Automatically shut off flow into the tank when the tank is no more than 95 percent full; or

- Alert the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank (not allowed for suction product delivery systems, for tanks with stage 1 vapor recovery or when product delivery is by pumping) or triggering a high-level alarm; or

- Restrict flow 30 minutes prior to overfilling, alert the transfer operator with a high-level alarm one minute before overfilling, or automatically shut off the flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

(2) Owners and operators are not required to use the spill and overfill prevention equipment specified in subparagraph 135.3(1) “b”(1) if:

1. Alternative equipment is used that is determined by the department to be no less protective of human health and the environment than the equipment specified in paragraph 135.3(1) “b”(1) “1” or “2”; or

2. The UST system is filled by transfers of no more than 25 gallons at one time.

(3) Flow restrictors used in vent lines may not be used to comply with paragraph 135.3(1) “c”(1) “2” when overfill prevention is installed or replaced.

(4) Spill and overfill prevention equipment must be periodically tested or inspected in accordance with subrule 135.4(12).

(5) Spill prevention equipment must be kept free of any liquid and debris. Any liquid or debris must be removed prior to product delivery.

d. *Installation.* The UST system must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with

the manufacturer's instructions. The UST system installation shall be conducted by an installer licensed by the department under 567—Chapter 134, Part C, and in accordance with 567—subrules 134.24(3) and 134.24(4).

NOTE: Tank and piping system installation practices and procedures described in the following codes may be used to comply with the requirements of paragraph 135.3(1) "d":

- American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System";

- Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or

- National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code," and 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages."

e. Certification of installation. All owners and operators must ensure that the following methods of certification, testing, and inspection are used to demonstrate compliance with paragraph 135.3(1) "d" by providing a certification of compliance on the UST registration form in accordance with subrule 135.3(3).

- (1) The installer is licensed by the department as provided in 567—Chapter 134, Part C; and

- (2) The installation has been inspected by a licensed installation inspector as required by 567—Chapter 134, Part C.

f. Dispenser systems. Each UST system must be equipped with under-dispenser containment (UDC) for any new or replaced dispenser system.

- (1) A dispenser system is considered new when both the dispenser and the equipment needed to connect the dispenser to the underground storage tank system are installed at a location where there previously was no dispenser (new UST system or new dispenser location at an existing UST system). The equipment necessary to connect the dispenser to the underground storage tank system includes check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are underneath the dispenser and connect the dispenser to the underground piping.

- (2) UDC shall be installed whenever an existing dispenser system is removed and replaced with another dispenser and the equipment used to connect the dispenser to the underground storage tank system is replaced. This equipment includes flexible connectors or risers or other transitional components that are beneath the dispenser and connect the dispenser to the piping. UDC is not required when only the emergency shutoff or shear valves or check valves are replaced.

- (3) UDC shall be installed beneath the dispenser whenever ten feet or more of piping is repaired or replaced within ten feet of a dispenser.

- (4) UDC must be liquid-tight on its sides, bottom, and at any penetrations. UDC must allow for visual inspection and access to the components in the containment system or be periodically monitored for leaks from the dispenser system.

135.3(2) Upgrading of existing UST systems. Owners and operators must permanently close any UST system that does not meet the new UST system performance standards or has not been upgraded in accordance with paragraphs 135.3(2) "b" through "d." This subrule does not apply to previously deferred UST systems. Upgrading is no longer allowed for UST systems not upgraded by December 22, 1998.

a. Alternatives allowed. Not later than December 22, 1998, all existing UST systems had to comply with one of the following requirements:

- (1) New UST system performance standards under 135.3(1);

- (2) The upgrading requirements in paragraphs "b" through "d" below; or

- (3) Closure requirements under rule 567—135.15(455B), including applicable requirements for corrective action under rules 567—135.7(455B) to 567—135.12(455B).

Replacement or upgrade of a tank system on a petroleum contaminated site classified as a high or low risk in accordance with rule 567—135.12(455B) shall be a double wall tank or a tank equipped with a secondary containment system with monitoring of the space between the primary and secondary containment structures in accordance with paragraph 135.5(4) "g."

b. Tank upgrading requirements. Steel tanks had to be upgraded to meet one of the following requirements in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory:

- (1) *Interior lining.* Tanks upgraded by internal lining must meet the following:
1. The lining was installed in accordance with the requirements of subrule 135.4(4), and
 2. Within ten years after lining, and every five years thereafter, the lined tank is internally inspected and found to be structurally sound with the lining still performing in accordance with original design specifications.
 3. If the internal lining is no longer performing in accordance with original design specifications and cannot be repaired in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory, the lined tank must be permanently closed in accordance with rule 567—135.15(455B).

(2) *Cathodic protection.* Tanks upgraded by cathodic protection meet the requirements of paragraphs 135.3(1) “a”(2) “2,” “3,” and “4” and the integrity of the tank was ensured using one of the following methods:

1. The tank was internally inspected and assessed to ensure that the tank was structurally sound and free of corrosion holes prior to installing the cathodic protection system; or
2. The tank had been installed for less than ten years and is monitored monthly for releases in accordance with 135.5(4) “d” through “i”; or
3. The tank had been installed for less than ten years and was assessed for corrosion holes by conducting two tightness tests that meet the requirements of paragraph 135.5(4) “c.” The first tightness test must have been conducted prior to installing the cathodic protection system. The second tightness test must have been conducted between three and six months following the first operation of the cathodic protection system; or
4. The tank was assessed for corrosion holes by a method that is determined by the department to prevent releases in a manner that is no less protective of human health and the environment than paragraphs 135.3(2) “b”(2) “1” to “3.”

(3) *Internal lining combined with cathodic protection.* Tanks upgraded by both internal lining and cathodic protection must have met the following:

1. The lining was installed in accordance with the requirements of subrule 135.4(4); and
2. The cathodic protection system was installed within six months of lining installation and meets the requirements of paragraphs 135.3(1) “a”(2) “2,” “3,” and “4.”

NOTE regarding paragraph 135.3(2) “b”: The following historical codes of practice were listed as options for complying with paragraph 135.3(2) “b”:

- American Petroleum Institute Publication 1631, “Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks”;
- National Leak Prevention Association Standard 631, “Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection”;
- National Association of Corrosion Engineers Standard RP-02-85, “Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems”; and
- American Petroleum Institute Publication 1632, “Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems.”

NOTE regarding paragraph 135.3(2) “b”(1) “2”: The following codes of practice may be used to comply with the periodic lining inspection requirement of this subrule:

- American Petroleum Institute Recommended Practice 1631, “Interior Lining and Periodic Inspection of Underground Storage Tanks”;
- National Leak Prevention Association Standard 631, Chapter B, “Future Internal Inspection Requirements for Lined Tanks”;
- Ken Wilcox Associates Recommended Practice, “Recommended Practice for Inspecting Buried Lined Steel Tanks Using a Video Camera”; or
- Underwriters Laboratories (UL) 1856 Underground Fuel Tank Internal Retrofit Systems.

c. *Piping upgrading requirements.* Metal piping that routinely contains regulated substances and is in contact with the ground must be cathodically protected in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and must meet the requirements of paragraphs 135.3(1) “b”(2) “2,” “3,” and “4.”

NOTE: The codes of practice listed in the note following subparagraph 135.3(1)“b”(2) may be used to comply with this requirement.

d. Spill and overfill prevention equipment. To prevent spilling and overfilling associated with product transfer to the UST system, all existing UST systems must comply with UST system spill and overfill prevention equipment requirements specified in paragraph 135.3(1)“c.”

135.3(3) Registration and notification requirements.

a. Except as provided in paragraph 135.3(3)“b,” the owner of an underground storage tank existing on or before July 1, 1985, shall complete and submit to the department a copy of the registration form provided by the department.

b. The owner of an underground storage tank system taken out of operation between January 1, 1974, and July 1, 1985, shall complete and submit to the department a copy of the registration form provided by the department unless the owner knows the tank has been removed from the ground. For purposes of this subrule, “owner” means the person who owned the tank immediately before the discontinuation of the tank’s use.

c. An owner or operator who brings into use an underground storage tank system after July 1, 1985, shall complete and submit to the department a copy of the registration form provided by the department within 30 days of the final installation inspection required in 567—paragraph 134.27(2)“c” by a licensed installation inspector. The owner or operator shall not allow the deposit of any regulated substance into the tank without prior approval of the department or until the permanent registration tag and annual tank tag have been attached to the tank fill pipe and the tank system is covered by an approved financial responsibility mechanism in accordance with 567—Chapter 136.

d. All owners and operators of new UST systems must provide UST system details and a site diagram, and certify in the registration form compliance with the following requirements:

- (1) Installation of tanks and piping under paragraph 135.3(1)“e”;
- (2) Cathodic protection of steel tanks and piping under paragraphs 135.3(1)“a” and “b”;
- (3) Financial responsibility under 567—Chapter 136;
- (4) Release detection methods under subrules 135.5(2) and 135.5(3);
- (5) Class A, B and C operator certification under subrule 135.4(6);
- (6) NESHAP Stage 1 vapor recovery.

e. All owners and operators of new UST systems must ensure that the licensed installer certifies in the registration form that the methods used to install the tanks and piping comply with the requirements in paragraph 135.3(1)“d.”

f. Exemption from reporting requirement. Paragraphs 135.3(1)“a” to “c” do not apply to an underground storage tank for which notice was given pursuant to Section 103, Subsection c, of the Comprehensive Environmental Response, Compensation, and Liabilities Act of 1980. (42 U.S.C. Subsection 9603(c))

g. Reporting fee. The registration form submitted by the owner to the department under paragraphs 135.3(1)“a” to “c” shall be accompanied by a fee of \$10 for each tank included in the form.

h. Notification requirement for installing a tank. A person installing an underground storage tank and the owner or operator of the underground storage tank must notify the department of their intent to install the tank 30 days prior to installation. Notification shall be on a form provided by the department.

i. Notification requirements for a person who acquires, sells, installs, modifies or repairs a UST system.

(1) A person, company or lending institution that assumes ownership or operation of a regulated underground storage tank must submit notification to the department on a form provided by the department within 30 days of acquisition and prior to tank operation. The owner must include copies of training certificates for the Class A and Class B operators (135.4(6)) and proof of financial responsibility required in 567—Chapter 136. The new owner is responsible for any current and back tank management fees that have not been previously paid.

(2) A person who sells, installs, modifies, or repairs a tank used or intended to be used in Iowa shall notify, in writing, the purchaser and the owner or operator of the tank of the obligations specified in paragraphs 135.3(3)“c” and “j” and the financial assurance requirements in 567—Chapter 136. The

notification must include the prohibition on depositing a regulated substance into tanks which have not been registered and issued tags by the department, or tanks which do not have financial assurance as required in 567—Chapter 136. A standard notification form supplied by the department may be used to satisfy this requirement.

j. It is unlawful for a person to deposit or accept a regulated substance in an underground storage tank that has not been registered and issued permanent or annual tank management tags in accordance with rule 567—135.3(455B). It is unlawful for a person to deposit or accept a regulated substance into an underground storage tank if the person has received notice from the department that the underground storage tank is subject to a delivery prohibition or if there is a “red tag” attached to the UST fill pipe or fill pipe cap as provided in subrule 135.3(8).

(1) The department may provide written authorization to receive a regulated substance when there is a delay in receiving tank tags or at new tank installations to allow for testing the tank system.

(2) The department may provide known depositors of regulated substances lists of underground storage tank sites that have been issued tank tags, those that have not been issued tank tags, and those subject to a delivery prohibition pursuant to subrule 135.3(8). These lists do not remove the requirement for depositors to verify that current tank tags are affixed to the fill pipe prior to delivering product. Regulated substances cannot be delivered to underground storage tanks without current tank tags or those displaying a delivery prohibition “red tag” as provided in subrule 135.3(8).

(3) A person shall not accept or deposit a regulated substance in an underground storage tank after receiving written or oral notice from the department that the tank is not covered by an approved form of financial responsibility in accordance with 567—Chapter 136.

k. If an owner or operator fails to register an underground storage tank within 30 days after installation pursuant to paragraph 135.3(3) “c,” the owner or operator shall pay an additional \$250 per tank late fee upon registration of the tank. The imposition of this fee does not preclude the department from assessing an additional administrative penalty in accordance with Iowa Code section 455B.476.

135.3(4) *Farm and residential tanks.*

a. The owner or operator of a farm or residential tank of 1100 gallons or less capacity used for storing motor fuel for noncommercial purposes is subject to the requirements of this subrule.

b. Farm and residential tanks, installed before July 1, 1987, are required to be registered with the department.

c. Farm and residential tanks installed on or after July 1, 1987, must be in compliance with all the underground storage tank regulations.

135.3(5) *Registration tags and annual management fee.*

a. Tanks of 1100 gallons or less capacity that have registered with the department will be issued a permanent registration tag.

b. The owner or operator of tanks over 1,100-gallon capacity must submit a tank management fee form and fee payment of \$65 per tank by January 15 of each year.

(1) An additional \$250 per tank late fee must be paid if the tank management fee is not paid by March 1.

(2) The owner or operator must submit written proof that the tanks are covered by an approved form of financial responsibility in accordance with 567—Chapter 136.

(3) Upon proper payment of the fee and acceptable proof of financial responsibility, and a determination there are no outstanding compliance violations, a one-year renewal tag will be issued for the period from April 1 to March 31.

(4) If there are outstanding compliance violations, the annual tank tags may be withheld until the violations are corrected.

(5) The department shall refund a tank management fee if the tank is permanently closed prior to April 1 for that year.

c. The owner or operator shall affix the tag to the fill pipe of the underground storage tank where it will be readily visible.

d. A person who conveys or deposits a regulated substance shall inspect the underground storage tank to determine the existence or absence of a permanent registration tag, a current annual renewal tag, or

a delivery prohibition “red tag” as provided in subrule 135.3(8). If a current annual renewal tag, or a silver permanent tag for regulated tanks less than 1,100 gallons is not affixed to the fill pipe or fill pipe cap or if a delivery prohibition “red tag” is displayed, the person shall not deposit the substance in the tank.

e. The owner or operator must return the tank tags upon request of the department for failure to meet the requirements of rules 567—135.3(455B) to 567—135.5(455B) or the financial responsibility rules in 567—Chapter 136 after permanent tank closure or when tanks are temporarily closed for over 12 months, or when the tank system is suspected to be leaking and the responsible party fails to respond as required in subrule 135.8(1). The department will not return the tags until the tank system is in full compliance with the technical requirements of this chapter and financial responsibility requirements of 567—Chapter 136.

135.3(6) *Previously unregistered petroleum underground storage tanks.* A petroleum underground storage tank required to be registered under subrules 135.3(3) and 135.3(4), which has not been registered shall be registered under the following conditions:

- a. The tank registration fee under paragraph 135.3(3) “g” shall accompany the registration.
- b. The storage tank management fee and any late fees under subrule 135.3(5) and paragraph 135.3(3) “k” shall be paid for past years in which the tank should have been registered.
- c. The department may waive the late fee(s).

135.3(7) *Exemption certificates from the environmental charge on petroleum diminution.* Rescinded IAB 5/19/21, effective 6/23/21.

135.3(8) *Delivery prohibition process.*

a. *Identifying sites subject to delivery response prohibition action.*

(1) Annual renewal tag and tank management fee process. Owners and operators shall certify to the following on a form prepared by the department when applying for annual tank tags pursuant to subrule 135.3(5):

1. Installation and performance of an approved UST and piping release detection method as provided in rule 567—135.5(455B), including an annual line tightness test and a line leak detector test if applicable.
2. Installation of an approved overfill and spill protection system as provided in paragraph 135.3(1) “c.”
3. Installation of an approved corrosion protection system as provided in paragraphs 135.3(1) “a” and “b.”
4. If the UST system has been out of operation for more than three months, that the UST system has been temporarily closed in accordance with rule 567—135.15(455B) and a certification of temporary closure has been submitted to the department.

5. If the UST system has been removed or filled in place within the last 12 months, the date of removal or filling in place and whether a closure report has been submitted as provided in rule 567—135.15(455B).

(2) Sites with provisional status. If the UST system has been classified as operating under provisional status as provided in paragraph 135.3(8) “c,” owners and operators when applying for annual tank tags pursuant to subrule 135.3(5) must certify on a form prepared by the department that the owners and operators are in compliance with an approved provisional status remedial plan as provided in paragraph 135.3(8) “c.”

(3) Compliance inspections. The department may initiate a delivery prohibition response action based on: (1) a finding resulting from a third-party compliance inspection conducted pursuant to rule 567—135.20(455B); (2) a department investigation and inspection conducted pursuant to Iowa Code section 455B.475; or (3) review of a UST system check or other documentation submitted in response to a suspected release under rule 567—135.6(455B) or in response to a confirmed release under rule 567—135.7(455B).

b. *Delivery prohibition eligibility criteria.* A delivery prohibition response action may be initiated upon a finding that the UST system is out of compliance with department rules and meets the eligibility criteria as specified below. Reinstatement criteria define the standards and process for owners and operators to document that they have taken corrective action sufficient to authorize resumption of fuel to the USTs. Prior to initiation of the delivery prohibition, owners and operators are afforded a minimum level of procedural due process such as prior notice and the opportunity to present facts to dispute the finding.

Where notice and the opportunity to take corrective action prior to initiation of a delivery prohibition response action are required, notice by the department or by a certified compliance inspector as provided in rule 567—135.20(455B) shall be sufficient.

If the department finds that any one of the following criteria has been satisfied, the department may initiate a delivery prohibition response action following the notice procedures outlined in paragraph “e” of this subrule. After initiation of the delivery prohibition response action, the department will offer the owner or operator an opportunity to establish reinstatement criteria by written documentation and, if requested, an in-person meeting.

(1) An approved release detection method for USTs or UST piping is not installed, such as automatic tank gauging, groundwater monitoring wells and line leak detectors, and there is no record that an approved method such as inventory control, statistical inventory reconciliation, or interstitial space monitoring has been employed during the previous three months. If the owner or operator claims to have documentation that an approved release detection method has been conducted, the owner or operator will be given two business days to produce the documentation.

REINSTATEMENT CRITERIA: The owner or operator must submit results of a passing UST system precision tightness test at the 0.1 gallon-per-hour leak rate in paragraphs 135.5(4) “c” and 135.5(5) “b.” The owner or operator must also document installation and operation of an approved release detection system. This may include proof that a contract has been signed with a qualified statistical inventory reconciliation provider or that a qualified inventory control method has been implemented and training has been provided to onsite supervisory personnel.

(2) No documentation of a required annual line tightness test or line leak detector test has been provided, and the owner or operator has failed to conduct the required testing within 14 days of written notice by the department or a certified compliance inspector as provided in rule 567—135.20(455B).

REINSTATEMENT CRITERIA: The owner or operator must provide documentation of a passing line precision tightness test at the 0.1 gallon-per-hour leak rate in paragraph 135.5(5) “b” and a line leak detector test as provided in paragraph 135.5(5) “a.”

(3) Overfill and spill protection is not installed.

REINSTATEMENT CRITERION: The owner or operator must provide documentation that overfill and spill protection equipment has been installed.

(4) A corrosion protection system is not installed or there is no record that an impressed current corrosion protection system has been in operation for the prior six months.

REINSTATEMENT CRITERIA: A manned entry tank integrity inspection must be completed prior to installation of a corrosion protection system, and the owner or operator must submit results of a passing UST system precision tightness test at the 0.1 gallon-per-hour leak rate in paragraphs 135.5(4) “c” and 135.5(5) “b.” A corrosion protection analysis must be completed and approved by the department.

(5) The owner or operator has failed to provide proof of financial responsibility in accordance with 567—Chapter 136.

REINSTATEMENT CRITERION: The owner or operator must submit acceptable proof of financial responsibility in accordance with 567—Chapter 136.

(6) A qualified UST system release detection method is installed and is being used but the documentation or the absence of documentation is sufficient to question the reliability of the release detection over the past 12-month period. The owner or operator shall be notified of the deficiencies, shall be given at least two business days to produce documentation of compliance and, if necessary, shall be required to conduct a leak detection system analysis and a system tightness test within 14 days. If the owner or operator fails to produce documentation of compliance or to conduct the system analysis and the UST system precision tightness test at the 0.1 gallon-per-hour leak rate in paragraphs 135.5(4) “c” and 135.5(5) “b,” the department may initiate a delivery prohibition response action. Notice by the department or a compliance inspector as provided in rule 567—135.20(455B) shall be sufficient to initiate a delivery prohibition response action.

REINSTATEMENT CRITERIA: The owner or operator must submit documentation that the leak detection method analysis sufficiently documents compliance and explains the reasons for the accuracy and

reliability concerns. If necessary, the owner or operator must submit passing results of a UST system precision tightness test at the 0.1 gallon-per-hour leak rate in paragraphs 135.5(4) “c” and 135.5(5) “b.”

(7) The owner or operator has failed to document completion of a three-year corrosion protection test or to repair defective corrosion protection equipment within 30 days after notice of the violation by the department or a certified compliance inspector as provided in rule 567—135.20(455B).

REINSTATEMENT CRITERION: The owner or operator must submit documentation of a three-year corrosion protection test as provided in rule 567—135.3(455B).

(8) The owner or operator has failed to complete a compliance inspection required by rule 567—135.20(455B) within 60 days after written notice of the violation by the department.

REINSTATEMENT CRITERION: The owner or operator must submit a compliance inspection report as provided in rule 567—135.20(455B).

(9) The owner or operator has failed to take necessary abatement action in response to a confirmed release as provided in subrules 135.7(2) and 135.7(3).

REINSTATEMENT CRITERION: The owner or operator must document compliance with the abatement provisions in subrules 135.7(2) and 135.7(3).

(10) The owner or operator has failed to undertake and document release investigation and confirmation steps within seven days in response to a suspected release as provided in paragraph 135.6(3) “a.”

REINSTATEMENT CRITERION: The owner or operator must document release confirmation and system check as provided in paragraph 135.6(3) “a.”

(11) The owner or operator has failed to provide documentation of Class A or B operator training.

REINSTATEMENT CRITERION: The owner or operator must submit a copy of the certificates of training for Class A and B operators.

(12) The owner or operator has failed to install required secondary containment.

REINSTATEMENT CRITERION: The owner or operator must document secondary containment has been installed as provided in subrule 135.3(9).

(13) The owner or operator has failed to pay the annual tank management fee.

REINSTATEMENT CRITERION: The owner or operator must pay the current and any previous unpaid tank management fees in addition to any late fees as provided in paragraph 135.3(5) “b.”

(14) When tanks are no longer in use or in temporary closure.

REINSTATEMENT CRITERION: The owner or operator must provide a completed Return to Service form along with required documents.

c. Provisional status. The department may classify a UST system as operating under a provisional status when the department documents a pattern of UST operation and maintenance violations under rules 567—135.3(455B) through 567—135.5(455B) and suspected release and confirmed release response actions under rules 567—135.6(455B) and 567—135.7(455B). The department shall provide the owner or operator with a notice specifying the basis for the proposed classification and a proposed remedial action plan. The objective of the remedial action plan is to provide the owner and operator an opportunity to undertake certain remedial actions sufficient to establish a reasonable likelihood that future regulatory compliance will be achieved.

The remedial action plan may include but is not limited to provisions for owner/operator training, development of a facility-specific compliance manual, more frequent third-party compliance inspections than otherwise required under rule 567—135.20(455B), monthly reporting, and retention of a third-party compliance manager/consultant. If the owner or operator and the department cannot reach agreement on a remedial action plan, the department may initiate enforcement action by issuance of an administrative order pursuant to 567—Chapter 10. This provision does not grant the owner or operator an entitlement to this procedure, and the department reserves all discretion to undertake an enforcement action and assess penalties as provided in Iowa Code sections 455B.476 and 455B.477.

d. Administrative orders. The department may impose a delivery prohibition as a remedy for violations of the operation and maintenance provisions in rules 567—135.3(455B) through 567—135.5(455B) and the suspected and confirmed release response actions in rules 567—135.6(455B)

and 567—135.7(455B). This remedy may be in addition to the assessment of penalties as provided in Iowa Code section 455B.476 and other appropriate injunctive relief necessary to correct violations.

e. Due process prior to initiation of a delivery prohibition response action.

(1) Prior to imposing a delivery prohibition response action under paragraph 135.3(8)“b” above, the department will provide notice to the owner or operator or, if notice to the owner or operator cannot be confirmed, to a person in charge at the UST facility of the basis for the finding and the intent to initiate a delivery prohibition response action. Notice may be by verbal contact, by facsimile, or by regular or certified mail to the UST facility address or the owner’s or operator’s last-known address. The owner and operator will be given a minimum of one business day to provide documentation that the finding is inaccurate or that reinstatement criteria in subparagraphs 135.3(8)“b”(1) through (5) have been satisfied. Additional days and the opportunity for a telephone or in-person conference may be provided the owner and operator to contest the factual basis for a finding under subparagraphs 135.3(8)“b”(6) through (14). Additional procedural due process may be afforded the owner and operator on a case-by-case basis sufficient to satisfy Constitutional due process standards.

If insufficient information is submitted to change the finding, the department will notify the owner or operator and a person in charge at the UST facility of the final decision to impose the delivery prohibition response action.

(2) Provisional status. Upon a finding that an owner or operator under provisional status has failed to comply with the terms of a remedial action plan as provided above, the department may initiate a delivery prohibition response action by giving actual notice to the owner or operator of the basis for the finding of noncompliance and the department’s intent to initiate a delivery prohibition response action. The delivery prohibition response action shall not be imposed without providing the owner or operator the opportunity for an evidentiary hearing consistent with the provisions for suspension and revocation of licenses under 567—Chapter 7.

f. Delivery prohibition procedure. Upon oral or written notice that the delivery prohibition response action has been imposed, the owner or operator and any person in charge of the UST facility shall be notified that they are not authorized to receive any further delivery of regulated substances until conditions for reinstatement of eligibility are satisfied. Owners and operators are required to provide the department with names and contact information for all persons who convey or deposit regulated substances to the USTs. The department will attempt to notify known persons who convey or deposit regulated substances to the USTs that they are not authorized to deliver to the USTs until further notice by the department as provided in paragraph 135.3(3)“j” and subrule 135.3(5).

The department shall visit the site and affix a “red tag” to the fill pipes or fill pipe caps of all affected USTs. It is unlawful for any person to deposit or accept a regulated substance into a UST that has a “red tag” affixed to the fill pipe or fill pipe cap. The department may allow the owner and operator to dispense and sell the remainder of existing fuel unless the department determines there is an immediate risk of a release or other risk to human health, safety or the environment. The department shall confirm in writing the basis for the delivery prohibition response action, contacts made prior to the action, and steps the owner or operator must take to reinstate fuel delivery.

135.3(9) Secondary containment requirements for UST system installations. All new and replacement underground storage tank systems and appurtenances used for the storage and dispensing of petroleum products shall have secondary containment in accordance with this subrule. The secondary containment provision includes the installation of containment sumps.

a. Tanks and piping installed or replaced after November 28, 2007, must have secondary containment that is designed, installed, and maintained according to the performance standards in subrule 135.3(1) and paragraph 135.5(3)“b.”

(1) The secondary containment may be manufactured as an integral part of the primary containment or constructed as a separate containment system.

(2) At a minimum, the secondary containment must:

1. Contain regulated substances leaked from the UST system until detected and removed.
2. Prevent the release of regulated substances into the environment at any time during the operational life of the underground storage tank system.

3. Be checked for evidence of a release from the tank at least every 30 days as provided in paragraph 135.5(2)“a.”

b. Testing and inspection. Containment sumps shall be liquid-tight and must be inspected and tested in accordance with the following:

(1) Inspections for secondary containment sumps (spill catchment basins, turbine sumps, transition or intermediate sumps, and under-dispenser containment).

1. Inspections for secondary containment sumps shall consist of visual inspection by an Iowa-licensed installer or Iowa-certified compliance inspector every two years.

2. Containment sumps must be intact (no cracks or perforations) and liquid-tight, including sides and bottom.

3. Containment sumps must be maintained and kept free of debris, liquid, and ice at all times.

4. Regulated substances leaked or spilled into any containment sumps shall be immediately removed.

(2) Secondary containment sumps used for interstitial monitoring of piping shall be tested upon installation and periodically in accordance with subrule 135.4(12).

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.4(455B) General operating requirements.

135.4(1) *Spill and overfill control.*

a. Owners and operators must ensure that releases due to spilling or overfilling do not occur. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

NOTE: The transfer procedures described in National Fire Protection Association Standard 385, “Standard for Tank Vehicles for Flammable and Combustible Liquids,” or American Petroleum Institute Recommended Practice 1007, “Loading and Unloading of MC 306/DOT 406 Cargo Tank Motor Vehicles,” may be used to comply with paragraph 135.4(1)“a.” Further guidance on spill and overfill prevention appears in American Petroleum Institute, “Recommended Practice 1621 for Bulk Liquid Stock Control at Retail Outlets.”

b. The owner and operator must report, investigate, and clean up any spills and overfills in accordance with 135.6(4).

135.4(2) *Operation and maintenance of corrosion protection.* All owners and operators of metal UST systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented until the UST system is permanently closed or undergoes a change in service in accordance with subrule 135.15(2):

a. All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.

b. All UST systems equipped with cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:

(1) *Frequency.* All cathodic protection systems must be tested within six months of installation and at least every three years thereafter or according to another reasonable time frame established by the department; and

(2) *Inspection criteria.* The criteria that are used to determine that cathodic protection is adequate as required by this subrule must be in accordance with a code of practice developed by a nationally recognized association.

NOTE: The following codes of practice may be used to comply with subparagraph 135.4(2)“b”(2).

- NACE International Test Method TM 0101, “Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems”;

- NACE International Test Method TM0497, “Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems”;

- Steel Tank Institute Recommended Practice R051, “Cathodic Protection Testing Procedures for STI-P3® USTs”;

- NACE International Standard Practice SP 0285, “External Control of Underground Storage Tank Systems by Cathodic Protection”; or
- NACE International Standard Practice SP 0169, “Control of External Corrosion on Underground or Submerged Metallic Piping Systems.”

c. UST systems with impressed current cathodic protection systems must also be inspected every 60 days to ensure the equipment is running properly.

d. For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained (in accordance with 135.4(5)) to demonstrate compliance with the performance standards in this subrule. These records must provide the following:

- (1) The results of the last three inspections required in paragraph “c”; and
- (2) The results of testing from the last two inspections required in paragraph “b.”

e. When an impressed current cathodic protection system is failing cathodic protection for the time periods given below, owners and operators must take the following actions:

(1) For impressed current cathodic protection systems that have been inoperative for 0 to 90 days after failing a corrosion protection test or after discovering the system is not operating, all of the following must be completed:

1. Power must be restored to an inoperative corrosion protection system. A damaged or failed corrosion protection system must be repaired by a cathodic protection tester. A corrosion expert must approve any modifications to the system that are outside of the original design.
2. The corrosion protection system must be retested within six months of repair.
3. A copy of the test and any repairs must be kept as part of the cathodic protection records.
4. A copy of the new design standards must be kept as part of the cathodic protection records.

(2) For impressed current corrosion protection systems that have been inoperative for 90 to 365 days or repaired 90 to 365 days after failing a corrosion protection test, all of the following must be completed:

1. Notify the department.
2. Power must be restored to an inoperative corrosion protection system.
3. The corrosion protection system must be repaired, tested and returned to service under the supervision of a corrosion expert.
4. A precision tightness test must be conducted on the entire UST system.
5. The corrosion protection system must be retested within six months of the repair or power being restored.

6. A copy of the test and any repairs must be kept as part of the cathodic protection records.
7. A copy of the new design standards must be kept as part of the cathodic protection records.

8. If determined the tank is not suitable for corrosion protection, the tank must be permanently closed in accordance with subrule 135.15(2).

(3) If the impressed current corrosion protection system has been inoperative for more than 365 days or was not repaired for more than 365 days after failing a corrosion protection test, all of the following must be completed:

1. Notify the department.
2. Immediately empty and stop using the tank system.

3. An internal inspection of the steel tank must be conducted according to a national standard (e.g., API 1631). If the UST fails the internal inspection, the UST owner must permanently close the tank in accordance with subrule 135.15(2).

4. All metal piping and buried metal components (e.g., flex connectors, couplings) that routinely contain product must be inspected by a UST professional or cathodic protection tester. If the metallic components have no visible corrosion and have passed a line tightness test (unless the piping is exempt from leak detection, e.g., Safe or European Suction) then the cathodic protection system may be repaired or replaced under the supervision of a corrosion expert. Metallic components that show visible corrosion must be replaced.

5. A precision test must be conducted on the entire UST system following repair or replacement of the cathodic protection system.

6. The corrosion protection system must be retested within six months of repair.

7. A copy of the tests and any repairs must be kept as part of the cathodic protection records.
8. A copy of the new design standards must be kept as part of the cathodic protection records.
- (4) If the impressed current cathodic protection system has been inoperable for more than 365 days and cannot or will not be brought back into immediate use, the tank system must be permanently closed in accordance with rule 567—135.15(2).

135.4(3) *Compatibility.* Owners and operators must use a UST system made of or lined with materials that are compatible with the substance stored in the UST system.

a. Owners and operators must notify the department at least 30 days prior to switching to a regulated substance containing greater than 10 percent ethanol, greater than 20 percent biodiesel, or any other regulated substance identified by the department.

b. Owners and operators must have a UST installer licensed under 567—Chapter 134, Part C, submit the department's checklist for equipment compatibility for the UST system to the department at least 30 days prior to switching to a regulated substance containing greater than 10 percent ethanol or greater than 20 percent biodiesel, or any other regulated substance identified by the department.

c. A retail dealer, as defined in Iowa Code section 214A.1, must show compliance with the requirements of Iowa Code sections 455G.32 and 455G.33, if applicable, by submitting and maintaining the applicable reporting and record-keeping documentation listed in subparagraphs 135.4(5)“a”(10), 135.4(5)“a”(11), 135.4(5)“b”(12), and 135.4(5)“b”(13).

NOTE: Owners and operators storing alcohol blends may use the following codes to comply with the requirements of subrule 135.4(3): American Petroleum Institute Recommended Practice 1626, “Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations Filling Stations.”

135.4(4) *Repairs and replacement.* Owners and operators of UST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs must meet the following requirements:

a. Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory.

NOTE: The following codes and standards may be used to comply with paragraph 135.4(4)“a”:

- National Fire Protection Association Standard 30, “Flammable and Combustible Liquids Code”;
- International Fire Code;
- American Petroleum Institute Recommended Practice 2200, “Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines”;
- American Petroleum Institute Recommended Practice 1631, “Interior Lining and Periodic Inspection of Underground Storage Tanks”;
- National Fire Protection Association Standard 326, “Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair”;
- National Leak Prevention Association Standard 631, Chapter A, “Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks”;
- Steel Tank Institute Recommended Practice R972, “Recommended Practice for the Addition of Supplemental Anodes to STI-P3® Tanks”;
- NACE International Standard Practice SP 0285, “External Control of Underground Storage Tank Systems by Cathodic Protection”; or
- Fiberglass Tank and Pipe Institute Recommended Practice T-95-02, “Remanufacturing of Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks.”

b. Repairs to fiberglass-reinforced plastic tanks may be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory.

*c. *Piping and fittings.**

(1) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced. Noncorrodible pipes and fittings may be repaired in accordance with the manufacturer's specifications.

(2) Any replacement of ten feet or more of piping shall have secondary containment.

(3) If 50 percent or more of any piping run is removed, the entire piping run must be removed and replaced with secondarily contained piping and interstitial monitoring.

(4) All piping replacements requiring secondary containment shall be constructed with transition or intermediate containment sumps.

d. Repairs to secondary containment areas of tanks and piping used for interstitial monitoring and to containment sumps used for interstitial monitoring of piping must have the secondary containment tested for tightness according to the manufacturer's instructions, a code of practice developed by a nationally recognized association or independent testing laboratory, or according to requirements established by the department within 30 days following the date of completion of the repair. All other repairs to tanks and piping must be tightness tested in accordance with paragraphs 135.5(4) "c" and 135.5(5) "b" within 30 days following the date of the completion of the repair except as provided in subparagraphs (1) to (3) below:

(1) The repaired tank is internally inspected in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory; or

(2) The repaired portion of the UST system is monitored monthly for releases in accordance with a method specified in paragraphs 135.5(4) "d" through "i"; or

(3) Another test method is used that is determined by the department to be no less protective of human health and the environment than those listed above.

NOTE regarding paragraph 135.4(4) "d": The following codes of practice may be used to comply with paragraph 135.4(4) "d":

- Steel Tank Institute Recommended Practice R012, "Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Wall Steel Tanks"; or

- Fiberglass Tank and Pipe Institute Protocol, "Field Test Protocol for Testing the Annular Space of Installed Underground Fiberglass Double and Triple-Wall Tanks with Dry Annular Space."

- Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities."

e. Within six months following the repair of any cathodically protected UST system, the cathodic protection system must be tested in accordance with paragraphs 135.4(2) "b" and "c" to ensure that it is operating properly.

f. Within 30 days following any repair to spill or overfill prevention equipment, the repaired spill or overfill prevention equipment must be tested or inspected, as appropriate, in accordance with subrule 135.4(1) to ensure it is operating properly.

g. Installation of any new or replacement turbine pumps involving the direct connection to the tank shall have secondary containment.

h. UST system owners and operators must maintain records of each repair until the UST system is permanently closed or undergoes a change-in-service pursuant to subrule 135.15(2).

i. Repairs or replacements to a UST system must be conducted by an Iowa-licensed UST professional whose license is issued for that specific work.

135.4(5) Reporting and record keeping. Owners and operators of UST systems must cooperate fully with inspections, monitoring and testing conducted by the department, as well as requests for document submission, testing, and monitoring by the owner or operator pursuant to Section 9005 of Subtitle I of the Solid Waste Disposal Act, as amended.

a. Reporting. Owners and operators must submit the following information to the department:

(1) Notification for all UST systems (135.3(3)), which includes certification of installation for new UST systems (135.3(1) "e");

(2) Notification of equipment replacement or addition of new equipment;

(3) Reports of all releases including suspected releases (135.6(1)), spills and overfills (135.6(4)), and confirmed releases (135.7(2));

(4) Corrective actions planned or taken including initial abatement measures (135.7(3)), initial site characterization (567—135.9(455B)), free product removal (135.7(5)), investigation of soil and groundwater cleanup and corrective action plan (567—135.8(455B) to 567—135.12(455B));

(5) A notification before permanent closure or change-in-service (135.15(2));

(6) Notification of any change in ownership;

- (7) Notification of any change in Class A or Class B operators;
- (8) Notification of any loss of financial responsibility (i.e., insurance);
- (9) Notification prior to UST systems switching to certain regulated substances;
- (10) Documentation establishing compatibility and capability as required in Iowa Code section 455G.32, if applicable;

(11) Documentation establishing compatibility and capability as required in Iowa Code section 455G.33, if applicable.

b. Record keeping. Owners and operators must maintain the following information:

(1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used (135.3(1) "a"(4); 135.3(1) "b"(3)).

(2) Documentation of operation of corrosion protection equipment (135.4(2));

(3) Documentation of UST system repairs (135.4(4) "h");

(4) Documentation of compliance with release detection requirements (135.5(6));

(5) Results of the site investigation conducted at permanent closure (135.15(3));

(6) Cathodic protection system testing results (135.4(2));

(7) Class A, B and C operator training certificates (135.4(6));

(8) Secondary containment test results (135.3(9));

(9) Documentation of periodic walkthrough inspections (135.4(13));

(10) Documentation of compatibility for UST systems (135.4(3));

(11) Documentation of compliance for spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping (135.4(12));

(12) Documentation establishing compatibility and capability as required in Iowa Code section 455G.32, if applicable;

(13) Documentation establishing compatibility and capability as required in Iowa Code section 455G.33, if applicable.

c. Availability and maintenance of records. Owners and operators must keep the records required either:

(1) At the UST site and immediately available for inspection by the department; or

(2) At a readily available alternative site and be provided for inspection to the department within two business days of department request.

NOTE: In the case of permanent closure records required under subrule 135.15(5), owners and operators are also provided with the additional alternative of mailing closure records to the department if they cannot be kept at the site or an alternative site as indicated above.

135.4(6) Training required for UST operators.

a. An owner or operator shall designate Class A, Class B, and Class C operators for each underground storage tank system or facility that has underground storage tanks regulated by the department, except for unstaffed facilities, which may designate only Class A and Class B operators.

b. A facility may not operate unless operators have been designated and trained as required in this rule, or unless otherwise agreed upon by the department based on a finding of good cause for failure to meet this requirement and a plan for designation and training at the earliest practicable date.

c. Trained operators must be readily available to respond to suspected or confirmed releases, equipment shut-offs or failures, and other unusual operating conditions.

d. A Class A or Class B operator should be immediately available for telephone consultation with the Class C operator when a facility is in operation. Class A or Class B operators should be able to be on site at the storage tank facility within four hours.

e. For staffed facilities, a Class C operator must be on site whenever the UST facility is in operation.

f. For unstaffed facilities, a Class B operator must be geographically located such that the person can be on site within two hours of being contacted by the public, the owner or operator of the facility, or the department. Emergency contact information and emergency procedures must be prominently displayed at the site. An unstaffed facility shall have an emergency shutoff device as provided in 135.5(1) and a sign posted in a conspicuous place that includes the name and telephone number of the facility owner, an

emergency response telephone number to contact the Class B operator, and information on local emergency responders.

g. Designated operators must successfully complete required training under subrule 135.4(9).

h. A person may be designated for more than one class of operator.

i. When a facility is found to be out of compliance, the department may require that the designated UST system Class A, B, or C operator be retrained under a plan approved by the department. The retraining must occur within 30 days from departmental notice for Class A and Class B operators and within 15 days for Class C operators.

135.4(7) UST operator responsibilities.

a. Class A operator.

(1) Class A operators have the primary responsibility to operate, maintain, and have knowledge of the regulatory requirements for the underground storage tank system and facility. The Class A operator's responsibilities include managing resources and personnel to achieve and maintain compliance with regulatory requirements under this chapter in the following ways:

1. Class A operators assist the owner by ensuring that underground storage tank systems are properly installed and expeditiously repaired and inspected; financial responsibility is maintained; and records of system installation, modification, inspection and repair are retained and made available to the department and certified compliance inspectors. The Class A operator shall properly respond to and report emergencies caused by releases or spills from UST systems, ensure that the annual tank management fees are paid, and ensure that Class B and Class C operators are properly trained.

2. Class A operators shall be familiar with training requirements for each class of operator and may provide required training for Class C operators.

3. Class A operators shall provide site drawings that indicate equipment locations for Class B and Class C operators.

(2) Department-licensed installers, installation inspectors, and department-certified compliance inspectors may perform Class A operator duties when employed or contracted by the tank owner to perform these functions so long as they are properly trained and designated as Class A operators pursuant to subrules 135.4(9) through 135.4(11). Class A operators who are also certified compliance inspectors under 567—Chapter 134, Part B, may perform in-house facility inspections of the UST system, but shall not perform department-mandated compliance inspections pursuant to rule 567—135.20(455B). Compliance inspections of a UST facility required by rule 567—135.20(455B) must be completed by a third-party compliance inspector certified under 567—Chapter 134, Part B.

(3) When there is a change in ownership or operator status, the new owner or operator is responsible for designating a Class A operator prior to bringing the UST system into operation. The Class A operator is responsible for ensuring that all necessary documentation for change of ownership is completed and submitted to the department and that all compliance requirements of this chapter are satisfied prior to bringing the UST system into operation. The compliance requirements may be provided to the owner or operator using the department's checklist.

If the UST system was temporarily closed, the designated Class A operator must ensure the department's checklist for returning a UST into service is followed, all compliance requirements of this chapter have been met, and the necessary documentation is submitted to the department.

(4) When there is a change in UST ownership, property ownership or operator status, the designated Class A operator for the current owner and operator is responsible for notifying the department when the change is final and, if possible, prior to the new owner or operator taking possession of the site.

b. Class B operator.

(1) A Class B operator is knowledgeable of the applicable underground storage tank regulatory requirements and standards and implements them in the field or at the tank facility. A Class B operator oversees and implements the day-to-day aspects of operation, maintenance, and record keeping for the underground storage tanks at facilities within four hours of travel time from the Class B operator's principal place of business. A Class B operator's responsibilities include, but are not limited to:

1. Performing mandated system tests at required intervals and making sure spill prevention, overfill control equipment, and corrosion protection equipment are properly functioning.

2. Assisting the owner by ensuring that release detection equipment is operational, release detection monitoring and tests are performed at the proper intervals, and release detection records are retained and made available to the department and compliance inspectors.

3. Making sure record-keeping and reporting requirements are met and that relevant equipment manufacturers' or third-party performance standards are available and followed.

4. Properly responding to, investigating, and reporting emergencies caused by releases or spills from USTs.

5. Performing UST release detection in accordance with rule 567—135.5(455B).

6. Monitoring the status of UST release detection.

7. Meeting spill prevention, overfill prevention, and corrosion protection requirements.

8. Reporting suspected and confirmed releases and taking release prevention and response actions according to the requirements of rule 567—135.6(455B).

9. Training and documenting Class C operators to make sure at least one Class C operator is on site during operating hours. Class B operators shall be familiar with Class C operator responsibilities and may provide training for Class C operators.

(2) Department-licensed installers, installation inspectors, and department-certified compliance inspectors may perform Class B operator duties when employed or contracted by the tank owner to perform these functions so long as they are properly trained and designated as Class B operators under subrules 135.4(9) through 135.4(11). Class B operators who are also certified compliance inspectors under 567—Chapter 134, Part B, may perform in-house facility inspections of the UST system, but cannot perform department-mandated compliance inspections pursuant to rule 567—135.20(455B). Compliance inspections of a UST facility pursuant to rule 567—135.20(455B) must be completed by a third-party compliance inspector certified under 567—Chapter 134, Part B.

(3) The owner or operator of a site undergoing a change in ownership shall designate a Class B operator prior to bringing the UST system into operation. The Class B operator must conduct an inspection using the department's inspection checklist and submit the completed checklist along with the change of ownership form prior to operation. If a UST system was temporarily closed, the Class B operator shall ensure that the department's checklist for returning a UST to service is followed and that the necessary documentation is submitted to the department prior to operation of the UST system.

c. Class C operator. A Class C operator is an on-site employee who typically controls or monitors the dispensing or sale of regulated substances and is the first to respond to events indicating emergency conditions. A Class C operator must be present at the facility at all times during normal operating hours. A Class C operator monitors product transfer operations to ensure that spills and overfills do not occur. The Class C operator must know how to properly respond to spills, overfills and alarms when they do occur. In the event of a spill, overfill or alarm, a Class C operator shall notify the Class A and Class B operators, as well as the department and appropriate local emergency authorities as required by rule.

(1) Written basic operating instructions, emergency contact names and telephone numbers, and basic procedures specific to the facility shall be provided to all Class C operators and readily available on site.

(2) There may be more than one Class C operator at a storage tank facility, but not all employees of a facility need be Class C operators.

135.4(8) *UST operator training course requirements.* Individuals must attend a department-approved training course covering material designated for each operator class. Individuals must attend every session of the training, take the examination, and attend examination review.

a. Class A operators. To be certified as a Class A operator, the applicant must successfully complete a department-approved training course that covers underground storage tank system requirements as outlined in 567—Chapters 134 to 136. The course must also provide a general overview of the department's UST program, purpose, groundwater protection goals, public safety and administrative requirements. The training must include, but is not limited to, the following:

(1) Components and materials of underground storage tank systems.

(2) A general discussion of the content of PEI/RP900-08, Recommended Practices for the Inspection and Maintenance of UST Systems, and PEI/RP500, Recommended Practices for Inspection and Maintenance of Motor Fuel Dispensing Equipment.

(3) Spill and overfill prevention, to include the American Petroleum Institute (API) Publication RP1621, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets," and National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code."

(4) Ensuring product delivery to the correct tank by using color-symbol codes in the API Standard RP1637, "Using the API Color-Symbol System to Mark Equipment and Vehicles for Product Identification at Service Stations and Distribution Terminals."

(5) Proper fuel ordering and delivery, including procedures in API RP1007, "Loading and Unloading of MC/DOT 406 Cargo Tank Motor Vehicles."

(6) Release detection methods and related reporting requirements.

(7) Corrosion protection and inspection requirements, including the requirement to have a department-licensed cathodic protection tester.

(8) Discussion of the benefits of monthly or frequent inspections and content and use of inspection checklists. Training materials for operators shall include the department's "Iowa UST Operator Inspection Checklist" or a checklist template similar to the department's document.

(9) Requirement and content of third-party compliance inspections.

(10) How to properly respond to an emergency, including hazardous conditions.

(11) Product and equipment compatibility, including the department's ethanol compatibility guidance and certification.

(12) Financial responsibility, including detailed explanation of liability, notice and claim procedures, and the six-month window to check for and report a release prior to insurance termination to maintain coverage for corrective action.

(13) Notification of installation and storage tank registration requirements.

(14) Requirement to use department-licensed companies and individuals for UST installation, testing, lining, and removal.

(15) Temporary and permanent closure procedures and requirements.

(16) NESHAP vapor recovery requirements.

(17) Conditions under which the department may stop fuel delivery and take enforcement action.

(18) Ensuring that annual tank management fees are paid.

(19) Ensuring that suspected and confirmed releases are investigated and reported according to subrule 135.6(1).

b. Class B operators. To be certified as a Class B operator, the individual must successfully complete a department-approved training course that provides in-depth understanding of UST system regulations applicable to this class. Training must also provide a general overview of the department's UST program, purpose, groundwater protection goals, public safety and administrative requirements. Training shall cover the operation and maintenance requirements set forth in this chapter, including, but not limited to, the following:

(1) A general discussion of the content of PEI/RP900-08, Recommended Practices for the Inspection and Maintenance of UST Systems, and PEI/RP500, Recommended Practices for Inspection and Maintenance of Motor Fuel Dispensing Equipment.

(2) Components and materials of underground storage tank systems.

(3) Spill and overfill prevention.

(4) Ensuring product delivery to the correct tank by using color-symbol codes in the API Standard RP1637.

(5) Proper fuel ordering and delivery, including procedures from API RP1007.

(6) Methods of release detection and related reporting requirements.

(7) Corrosion protection and related testing.

(8) Requirements of 30-day and annual walkthrough inspections. Training materials for operators shall include the department's "Iowa UST Operator Inspection Checklist" or a checklist template similar to the department's document.

(9) Requirement and content of third-party compliance inspections.

(10) Emergency response, reporting and investigating releases.

(11) Product and equipment compatibility, including the department's ethanol compatibility guidance and certification.

(12) Financial responsibility, including detailed explanation of liability, notice and claim procedures, and the six-month window to check for and report a release prior to insurance termination to maintain coverage for corrective action.

(13) Notification of installation and storage tank registration requirements.

(14) Requirement to use department-licensed companies and individuals for UST installation, testing, lining, and removal.

(15) Reporting and record-keeping requirements.

(16) Overview of Class C operator training requirements.

(17) NESHAP vapor recovery requirements.

(18) Conditions under which the department may stop fuel delivery and take enforcement action.

(19) Requirements for facilities that operate unstaffed at any time.

c. Class C operators. To be certified as a Class C operator, an individual must complete a department-approved training course. A Class A or Class B operator who has completed a department-approved training course may provide the Class C training. Class C operator training must include at a minimum:

(1) A general overview of the department's UST program and purpose;

(2) Groundwater protection goals;

(3) Public safety;

(4) UST system overview;

(5) Administrative requirements; and

(6) Action to be taken in response to an emergency condition due to a spill or release from a UST system.

Training must include written procedures for the Class C operator, including notification instructions necessary in the event of emergency conditions. The written instructions and procedures must be readily available on site. A Class A or Class B operator may provide additional on-site Class C training specific to the operator's UST system.

135.4(9) Examination and review requirement. Class A and Class B operators must complete the department-approved training course and take an examination to verify their understanding and knowledge. The examination may include both written and practical (hands-on) testing activities. The trainer must follow up the examination with a review of missed test questions with the class or individual to ensure understanding of problem areas. Upon successful completion of the training course, the applicant will receive a certificate verifying the applicant's status as a Class A, Class B, or Class C operator.

a. Reciprocity. The department may waive the training course for operators upon a showing of successful completion of a training course and examination approved by another state or regulatory agency that the department determines are substantially equivalent to the UST requirements contained in this chapter.

b. Transferability to another UST site. Class A and Class B operators may transfer to other UST facilities in Iowa provided the operator is properly designated by the facility owner as a Class A or Class B operator according to 567—subrule 135.4(11). Class A and Class B operators transferring from other states shall seek prior approval of training qualifications, unless the department has preapproved the out-of-state program as substantially equivalent to the requirements of this chapter.

135.4(10) Timing of UST operator training.

a. An owner shall ensure that Class A, Class B, and Class C operators are trained by approved training providers before an operator assumes duties of that class of operator.

b. When a Class A or Class B operator is replaced, a new operator must be trained prior to assuming duties for that class of operator. A copy of the certificate of training must be submitted to the department within 30 days of assuming duties.

c. Class C operators must be trained before assuming the duties of a Class C operator. Written basic operating instructions, emergency contact names and telephone numbers, and basic procedures specific to the facility shall be provided to all Class C operators and readily available on site. A Class C operator may

be briefed on these procedures concurrent with annual safety training required under Occupational Safety and Health Administration regulations, 29 CFR, Part 1910.

135.4(11) *Documentation of operator training.*

a. The owner of an underground storage tank facility shall maintain a list of designated operators. The list shall be made available to the department in accordance with subrule 135.4(5). The list shall represent the current Class A, Class B and Class C operators for the UST facility and must include:

(1) The name of each operator and the operator's class(es); contact information for Class A and Class B operators; the date each operator successfully completed initial training and refresher training, if any; the name of the company providing the training; and the name of the trainer.

(2) For all classes of operators, the site(s) for which an operator is responsible if more than one site.

b. A copy of the certificates of training for Class A and Class B operators shall be on file and readily available for inspection in accordance with subrule 135.4(5). Records verifying completion of training or retraining of Class A, Class B, and Class C operators must identify name of trainee, date trained, operator training class completed, and list the name of the trainer or examiner and the training company name, address, and telephone number. Owners and operators must maintain these records for as long as Class A, Class B, and Class C operators are designated.

c. A copy of the certificates of training for Class B and Class C operators shall be available at each facility for which the operator is responsible.

d. Class A and Class B operator contact information, including names and telephone numbers and any emergency information, shall be conspicuously posted at unstaffed facilities near the dispensers and the station building.

135.4(12) *Periodic testing of spill prevention equipment and containment sumps used for interstitial monitoring of piping and periodic inspection of overfill prevention equipment.*

a. Owners and operators of UST systems with spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping must meet these requirements to ensure the equipment is operating properly and will prevent releases to the environment:

(1) Spill prevention equipment (such as a catchment basin, spill bucket, or other spill containment device) and containment sumps used for interstitial monitoring of piping must prevent releases to the environment by meeting one of the following:

1. The equipment is double walled and the integrity of both walls is periodically monitored at a frequency of not less than the frequency of the walkthrough inspections described in subrule 135.4(13). If owners and operators discontinue periodic monitoring of this equipment, they must begin meeting paragraph 135.4(12) "a"(1)"2" and conduct a test within 30 days of discontinuing periodic monitoring of this equipment; or

2. The spill prevention equipment and containment sumps used for interstitial monitoring of piping are tested at least once every three years to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the following criteria:

- Requirements developed by the manufacturer (Note: Owners and operators may use this option only if the manufacturer has developed requirements); or

- A code of practice developed by a nationally recognized association or independent testing laboratory; or

- Requirements determined by the department to be no less protective of human health and the environment than the requirements listed in this subrule.

(2) Overfill prevention equipment must be inspected at least once every three years. At a minimum, the inspection must ensure that overfill prevention equipment is set to activate at the correct level specified in paragraph 135.3(1) "c" and will activate when regulated substance reaches that level. Inspections must be conducted in accordance with one of the following criteria:

1. Requirements developed by the manufacturer (Note: Owners and operators may use this option only if the manufacturer has developed requirements); or

2. A code of practice developed by a nationally recognized association or independent testing laboratory; or

3. Requirements determined by the department to be no less protective of human health and the environment than the requirements listed in this subrule.

b. Owners and operators must begin meeting these requirements as follows:

(1) For UST systems in use on or before June 23, 2021, the initial spill prevention equipment test and overfill prevention equipment inspection must be conducted not later than October 13, 2021.

(2) For UST systems brought into use after June 23, 2021, these requirements apply at installation.

c. Owners and operators must maintain records as follows for spill prevention equipment and overfill prevention equipment:

(1) All records of testing or inspection must be maintained for three years; and

(2) For spill prevention equipment and containment sumps used for interstitial monitoring of piping not tested every three years, documentation showing that the prevention equipment is double-walled and the integrity of both walls is periodically monitored must be maintained for as long as the equipment is periodically monitored.

NOTE: The following code of practice may be used to comply with this section: Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities."

135.4(13) *Periodic operation and maintenance walkthrough inspections.* Conduct inspections to properly operate and maintain UST systems.

a. Conduct a walkthrough inspection every 30 days that, at a minimum, checks the following equipment as specified below (Exception: spill prevention equipment at UST systems receiving deliveries at intervals greater than every 30 days may be checked prior to each delivery):

(1) Spill prevention equipment: visually check for damage; remove liquid or debris; check for and remove obstructions in the fill pipe; check the fill cap to make sure it attaches securely on the fill pipe and gasket is in good condition; and, for double-walled spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area, and

(2) Release detection equipment: check to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present, and ensure records of release detection testing are reviewed and current.

b. Conduct a walkthrough inspection annually, at a minimum, checking the following equipment as specified below:

(1) Containment sumps: visually check for damage, leaks to the containment area, or releases to the environment; remove liquid (in contained sumps) or debris; and, for double-walled sumps with interstitial monitoring, check for a leak in the interstitial area, and

(2) Handheld release detection equipment: check devices such as tank gauge sticks or groundwater bailers for operability and serviceability;

c. Conduct operation and maintenance walkthrough inspections according to a standard code of practice developed by a nationally recognized association or independent testing laboratory that checks equipment comparable to paragraphs 135.4(13) "a" and "b"; or

NOTE regarding paragraph 135.4(13) "c": the following code of practice may be used to comply with paragraph 135.4(13) "c": Petroleum Equipment Institute Recommended Practice RP 900, "Recommended Practices for the Inspection and Maintenance of UST Systems."

d. Conduct operation and maintenance walkthrough inspections developed by the department that checks equipment comparable to paragraphs 135.4(13) "a" and "b."

e. Owners and operators must maintain records (in accordance with subrule 135.4(5)) of operation and maintenance walkthrough inspections for 12 consecutive months. Records must include a list of each area checked, whether each area checked was acceptable or needed action taken, a description of actions taken to correct an issue, and delivery records if spill prevention equipment is checked less frequently than every 30 days due to infrequent deliveries.

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567—135.5(455B) Release detection.

135.5(1) *General requirements for all UST systems.*

a. Owners and operators of UST systems must provide a method, or combination of methods, of release detection that:

(1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;

(2) Is installed and calibrated in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability or running condition; and

(3) Beginning October 13, 2021, is operated and maintained, and electronic and mechanical components are tested for proper operation, in accordance with one of the following:

1. Manufacturer's instructions;

2. A code of practice developed by a nationally recognized association or independent testing laboratory; or

3. Requirements determined by the department to be no less protective of human health and the environment than the two options listed above.

(4) A test of the proper operation must be performed at least annually and, at a minimum, as applicable to the facility, cover the following components and criteria:

1. Automatic tank gauge and other controllers: test alarm; verify system configuration; test battery backup;

2. Probes and sensors: inspect for residual buildup; ensure floats move freely; ensure shaft is not damaged; ensure cables are free of kinks and breaks; test alarm operability or running condition and communication with controller;

3. Automatic line leak detector: test operation to meet criteria in paragraph 135.5(5)"*a*" by simulating a leak;

4. Vacuum pumps and pressure gauges: ensure proper communication with sensors and controller; and

5. Handheld electronic sampling equipment associated with groundwater and vapor monitoring: ensure proper operation.

NOTE regarding subparagraphs 135.5(1)"*a*"(3) and (4): The following code of practice may be used to comply with subparagraphs 135.5(1)"*a*"(3) and (4): Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities."

(5) Meets the performance requirements in subrule 135.5(4) or 135.5(5), with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, methods conducted in accordance with paragraphs 135.5(4)"*b*," "*c*," and "*d*" and paragraphs 135.5(5)"*a*" and "*b*" must be capable of detecting the leak rate or quantity specified for that method with a probability of detection of 0.95 and a probability of false alarm of 0.05.

b. When a release detection method operated in accordance with the performance standards in subrule 135.5(4) or 135.5(5) indicates a release may have occurred, owners and operators must notify the department in accordance with rule 567—135.6(455B).

c. When an owner and operator continually show the inability to conduct leak detection with the method being used, the department may require the owner and operator to find an alternative leak detection method. If the owner and operator cannot demonstrate compliance with leak detection, delivery prohibition in accordance with subrule 135.3(8) may be enforced.

d. Any UST system that cannot apply a method of release detection that complies with the requirements of this rule must complete the closure procedures in rule 567—135.15(455B). For previously deferred UST systems described in rules 567—135.1(455B) and 567—135.21(455B), this requirement applies after the effective dates described in subrule 135.1(3) and paragraph 135.21(1)"*a*."

e. Any UST facility that uses pressurized piping and dispenses product in the absence of a Class A, B, or C operator shall comply with the following requirements:

(1) Employ automatic line leak detectors that do one or more of the following:

1. Shut down the submersible pump when a leak is detected.

2. Restrict the flow of product when a leak is detected.

3. Trigger an audible or visual alarm when a leak is detected.

(2) At facilities implementing 135.5(1)“e”(1)“2” or “3,” the facility’s operator shall be notified or shall conduct a visit through one of the following methods:

1. Notification of the Class B operator by immediate electronic communication.
2. Signage directing the customer to contact the Class B operator or a designated contact person. The sign must be immediately visible to the customer and state that slow flow or an audible or visual alarm is an indication of a possible release. The sign must provide a 24-hour telephone number of the Class B operator or designee and direct the customer to stop dispensing product.
3. Daily visit to the site by a Class A, B, or C operator or designee. Visits shall include observation of every automatic line leak detector for shutdown, alarm, or restricted flow conditions. Methods of observing for restricted flow conditions may include dispensing product into a proper container or personal vehicle, observing a customer dispense product into a vehicle, or another method approved by the department. Owners and operators shall maintain an onsite log of site visits to demonstrate compliance with this provision. The log shall include the name of the observer and method used to observe the status of the automatic line leak detectors.

(3) All UST facilities subject to 135.5(1)“e” must comply with its provisions by July 1, 2014.

135.5(2) Requirements for petroleum UST systems. Owners and operators of petroleum UST systems must provide release detection for tanks and piping as follows:

a. Tanks. Tanks must be monitored at least every 30 days for releases using one of the methods listed in paragraphs 135.5(4)“d” to “i” except that:

(1) Tanks installed after November 28, 2007, must use interstitial monitoring of the secondary containment as the primary leak detection method in accordance with paragraph 135.5(4)“g.”

(2) Tanks installed on or before November 28, 2007, with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in paragraph 135.5(4)“b” may use manual tank gauging (conducted in accordance with paragraph 135.5(4)“b”).

b. Piping. Underground piping that routinely contains regulated substances must be monitored for releases in a manner that meets one of the following requirements:

(1) *Pressurized piping.* Underground piping that conveys regulated substances under pressure must:

1. Be equipped with an automatic line leak detector conducted in accordance with paragraph 135.5(5)“a”; and
2. Have an annual line tightness test conducted in accordance with paragraph 135.5(5)“b” or have monthly monitoring conducted in accordance with paragraph 135.5(5)“c.” Piping installed after November 28, 2007, must use interstitial monitoring of the piping secondary containment in accordance with paragraph 135.5(5)“d.”

(2) *Suction piping.* Underground piping that conveys regulated substances under suction must either have a line tightness test conducted at least every three years and in accordance with paragraph 135.5(5)“b,” or use a monthly monitoring method conducted in accordance with paragraph 135.5(5)“c.” Remote fill is considered suction piping. No release detection is required for suction piping that is designed and constructed to meet the following standards:

1. The below-grade piping operates at less than atmospheric pressure;
2. The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;
3. Only one check valve is included in each suction line;
4. The check valve is located directly below and as close as practical to the suction pump; and
5. A method is provided that allows compliance with “2” through “4” to be readily determined.

(3) Piping installed or replaced must meet one of the following:

1. Pressurized piping must be monitored for releases at least every 30 days in accordance with paragraph 135.5(5)“d” and be equipped with an automatic line leak detector.
2. Suction piping must be monitored for releases at least every 30 days. No release detection is required for suction piping that meets paragraphs 135.5“b”(2)“1” through 135.5“b”(2)“5.”

135.5(3) Requirements for hazardous substance UST systems. Owners and operators of hazardous substance UST systems must have containment that meets the following requirements and monitor these systems pursuant to paragraph 135.5(4)“g” at least every 30 days:

- a. Secondary containment systems must be designed, constructed and installed to:
 - (1) Contain regulated substances leaked from the primary containment until they are detected and removed;
 - (2) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and
 - (3) Be checked for evidence of a release at least every 30 days.
 - b. Double-walled tanks must be designed, constructed, and installed to:
 - (1) Contain a leak from any portion of the inner tank within the outer wall; and
 - (2) Detect the failure of the inner wall.
 - c. External liners (including vaults) must be designed, constructed, and installed to:
 - (1) Contain 100 percent of the capacity of the largest tank within its boundary;
 - (2) Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances; and
 - (3) Surround the tank completely (i.e., it is capable of preventing lateral as well as vertical migration of regulated substances).
 - d. Underground piping must be equipped with secondary containment that satisfies the requirements of this subrule (e.g., trench liners, jacketing of double-walled pipe). In addition, underground piping that conveys regulated substances under pressure must be equipped with an automatic line leak detector in accordance with paragraph 135.5(5)“a”;
 - e. For hazardous substance UST systems installed on or before November 28, 2007, other methods of release detection may be used if owners and operators:
 - (1) Demonstrate to the department that an alternate method can detect a release of the stored substance as effectively as any of the methods allowed in paragraphs 135.5(4)“b” to “i” can detect a release;
 - (2) Provide information to the department on effective corrective action technologies, health risks, and chemical and physical properties of the stored substance, and the characteristics of the UST site; and
 - (3) Obtain approval from the department to use the alternate release detection method before the installation and operation of the new UST system.
- 135.5(4) *Methods of release detection for tanks.*** Each method of release detection for tanks used to meet the requirements of 135.5(2) must be conducted in accordance with the following:
- a. *Inventory control.* Product inventory control (or another test of equivalent performance) must be conducted monthly to detect a release of at least 1.0 percent of flow-through plus 130 gallons on a monthly basis in the following manner:
 - (1) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;
 - (2) The equipment used is capable of measuring the level of product over the full range of the tank’s height to the nearest 1/8 of an inch;
 - (3) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;
 - (4) Deliveries are made through a drop tube that extends to within 1 foot of the tank bottom;
 - (5) Product dispensing is metered and recorded within the local standards for meter calibration or an accuracy of 6 cubic inches for every 5 gallons of product withdrawn; and
 - (6) The measurement of any water level in the bottom of the tank is made to the nearest 1/8 of an inch at least once a month.
- NOTE: Practices described in the American Petroleum Institute Recommended Practice 1621, “Recommended Practice for Bulk Liquid Stock Control at Retail Outlets,” may be used, where applicable, as guidance in meeting the requirements of subparagraphs 135.5(4)“a”(1) to 135.5(4)“a”(6).
- b. *Manual tank gauging.* Manual tank gauging must meet the following requirements:
 - (1) Tank liquid level measurements are taken at the beginning and end of the test period during which no liquid is added to or removed from the tank;
 - (2) Level measurements are based on an average of two consecutive stick readings at both the beginning and ending of the period;

(3) The equipment is capable of measuring the level of product over the full range of the tank's height to the nearest 1/8 of an inch;

(4) A release is suspected and subject to the requirements of rule 567—135.6(455B) if the variation between the beginning and ending measurements exceeds the weekly or monthly standards in the following table. Immediately contact the department if these standards are exceeded.

Nominal Tank Capacity	Minimum Duration of Test	Weekly Standard (one test)	Monthly Standard (four-test average)
550 gallons or less	36 hours	10 gallons	5 gallons
551-1,000 gallons (when tank diameter is 64 inches)	44 hours	9 gallons	4 gallons
551-1,000 gallons (when tank diameter is 48 inches)	58 hours	12 gallons	6 gallons
551-1,000 gallons (also requires annual tank tightness testing)	36 hours	13 gallons	7 gallons
1,001-2,000 gallons (also requires annual tank tightness test)	36 hours	26 gallons	13 gallons

(5) Only those tanks of 550 gallons or less nominal capacity or tanks of 551 to 1,000 gallons nominal capacity with diameters of 64 inches or 48 inches may use this as the sole method of release detection. Other tanks of 551 to 2,000 gallons may use this method in place of inventory control in paragraph 135.5(4)“a.” Tanks of greater than 2,000 gallons nominal capacity may not use this method to meet the requirements of this rule.

c. Tank tightness testing. Tank tightness testing (or another test of equivalent performance) must be capable of detecting a 0.1 gallon-per-hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

The tank tightness test procedure must be certified by a third party and meet US EPA testing procedures. The testing procedures are found in *Standard Test Procedures for Evaluating Leak Detection Methods: Volumetric Tank Tightness Testing Methods* (EPA /530/UST-90/004) March 1990 or as revised by EPA or *Non-Volumetric Tank Tightness Testing Methods* (EPA /530/UST-90/005) March 1990 or as revised by EPA.

d. Automatic tank gauging. Equipment for automatic tank gauging that tests for the loss of product and conducts inventory control must meet the following requirements:

(1) The automatic product level monitor test can detect a 0.2 gallon-per-hour leak rate from any portion of the tank that routinely contains product;

(2) The automatic tank gauging equipment must meet the inventory control (or other test of equivalent performance) requirements of paragraph 135.5(4)“a”;

(3) The leak test must be performed according to manufacturer specifications;

(4) The automatic tank gauging equipment must be certified by a third party and meet US EPA testing procedures in *Standard Test Procedures for Evaluating Leak Detection Methods: Automatic Tank Gauging Systems* (ATGS) (EPA /530/UST-90/006) March 1990 or as revised by US EPA; and

(5) The test must be performed with the system operating in one of the following modes:

1. In-tank static testing conducted at least once every 30 days; or

2. Continuous in-tank leak detection operating on an uninterrupted basis or operating within a process that allows the system to gather incremental measurements to determine the leak status of the tank at least once every 30 days.

e. Vapor monitoring. Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

(1) The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;

(2) The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;

(3) The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than 30 days;

(4) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;

(5) The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system;

(6) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in subparagraphs 135.5(4)“e”(1) through (4) and to establish the number and positioning of monitoring wells that will detect releases within the excavation zone from any portion of the tank that routinely contains product;

(7) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering; and

(8) The vapor product detector must be certified by a third party and meet US EPA testing procedures in *Standard Test Procedures for Evaluating Leak Detection Methods: Vapor-Phase Out-of-Tank Product Detectors* (EPA/530/UST-90/008) March 1990 or as revised by US EPA.

f. Groundwater monitoring. Testing or monitoring for liquids on the groundwater must meet the following requirements:

(1) The regulated substance stored is immiscible in water and has a specific gravity of less than 1;

(2) Groundwater is never more than 20 feet from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);

(3) The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions;

(4) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;

(5) Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible;

(6) The continuous monitoring devices or manual methods used can detect the presence of at least 1/8 of an inch of free product on top of the groundwater in the monitoring wells;

(7) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in subparagraphs 135.5(4)“f”(1) through (5) and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and

(8) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

g. Interstitial monitoring. Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

(1) For secondary containment systems, the sampling or testing method must be able to detect a leak through the inner wall in any portion of the tank that routinely contains product:

1. Continuously, by means of an automatic leak sensing device that signals to the operator the presence of any regulated substance in the interstitial space; or

2. Monthly, by means of a procedure capable of detecting the presence of any regulated substance in the interstitial space.

3. The interstitial space shall be maintained and kept free of liquid, debris or anything that could interfere with leak detection capabilities.

(2) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a leak between the UST system and the secondary barrier:

1. The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^{-6} cm/sec for the regulated substance stored) to direct a leak to the monitoring point and permit its detection;

2. The barrier is compatible with the regulated substance stored so that a leak from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected;

3. For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;

4. The groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than 30 days;

5. The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a 25-year flood plain, unless the barrier and monitoring designs are for use under such conditions; and

6. Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

- (3) For tanks with an internally fitted liner, an automated device can detect a leak between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

h. Statistical inventory reconciliation. Release detection methods based on the application of statistical principles to inventory data that test for the loss of product must meet the following requirements:

- (1) Use a leak threshold that does not exceed one-half the minimum detectable leak rate;

- (2) The statistical test must be able to detect at least a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product; and

- (3) The report by the SIR company must be a quantitative result with a calculated leak rate and include the leak threshold (leak rate at which a leak is declared), the calculated leak rate (leak rate calculated from the inventory records) and minimum detectable leak rate (minimum leak rate that can be determined from the inventory records).

1. A “pass” means that the calculated leak rate for the data set is less than the leak threshold and the minimum detectable leak rate is less than or equal to the certified performance standard;

2. A “fail” means the calculated leak rate for the data set is equal to or greater than the leak threshold;

3. An “inconclusive” means the minimum detectable leak rate exceeds the certified performance standard and the calculated leak rate is less than the leak threshold. If for any other reason the test result is not a “pass” or “fail,” the result is “inconclusive”;

- (4) Owners and operators must notify the department in accordance with rule 567—135.6(455B) when a monthly SIR report of “fail” occurs or two consecutive inconclusive results occur.

- (5) Owners and operators must assure the SIR analytical results are complete and available to the department upon request.

- (6) The statistical inventory reconciliation method must be certified by a third party and meet US EPA testing procedures in *Standard Test Procedures for Evaluating Release Detection Methods: Statistical Inventory Reconciliation* (EPA 510-B-19-004) May 2019 or as revised by EPA.

i. Other methods. Any other type of release detection method, or combination of methods, can be used if:

- (1) It can detect a 0.2 gallon-per-hour leak rate or a release of 150 gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; or

- (2) The department may approve another method if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in paragraphs “c” to “h.” In comparing methods, the department shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator must comply with any conditions imposed by the department on its use to ensure the protection of human health and the environment.

135.5(5) Methods of release detection for piping. Each method of release detection for piping used to meet the requirements of 135.5(2) must be conducted in accordance with the following:

a. Automatic line leak detectors. Methods which alert the operator to the presence of a leak in pressurized piping by restricting or shutting off the flow of regulated substances through piping or

triggering an audible or visual alarm may be used only if they detect leaks of 3 gallons per hour at 10 pounds per square inch line pressure within one hour. An annual test of the operation of the leak detector must be conducted in accordance with paragraph 135.5(1)“a.”

b. *Line tightness testing.* A periodic test of piping may be conducted only if it can detect a 0.1 gallon-per-hour leak rate at one and one-half times the operating pressure. The line leak detection method must be certified by a third party and meet US EPA testing procedures in *Standard Test Procedures for Evaluating Release Detection Methods: Pipeline Release Detection* (EPA 510-B-19-005) May 2019 or as revised by EPA.

c. *Applicable tank methods.* Except as described in paragraph 135.5(2)“a,” any of the methods in paragraphs 135.5(4)“e” through “i” may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

d. *Interstitial monitoring of secondary containment.* Interstitial monitoring may be used for any piping with secondary containment designed for and capable of interstitial monitoring.

(1) Leak detection shall be conducted:

1. Continuously, by means of an automatic leak sensing device that signals to the operator the presence of any regulated substance in the interstitial space or containment sump; or

2. Monthly, by means of a procedure capable of detecting the presence of any regulated substance in the interstitial space or containment sump, such as visual inspection.

(2) The interstitial space or sump shall be maintained and kept free of water, debris or anything that could interfere with leak detection capabilities.

(3) At least every two years, any sump shall be visually inspected for integrity of sides and floor and tightness of piping penetration seals. Any automatic sensing device shall be tested for proper function.

135.5(6) *Release detection record keeping.* All UST system owners and operators must maintain records in accordance with 135.4(5) demonstrating compliance with all applicable requirements of this rule. These records must include the following:

a. All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for five years, or for another reasonable period of time determined by the department, from the date of installation. Records of site assessments required for vapor monitoring under subparagraph 135.5(4)“e”(6) and groundwater monitoring under subparagraph 135.5(4)“f”(7) must be maintained for as long as the methods are used. Records of site assessments must be signed by a professional engineer or professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the department;

b. The results of any sampling, testing, or monitoring must be maintained for at least one year, or for another reasonable period of time determined by the department, except as follows:

(1) The results of tank tightness testing conducted in accordance with paragraph 135.5(4)“c” must be retained until the next test is conducted; and

(2) The results of annual operation tests conducted in accordance with subparagraphs 135.5(1)“a”(3) and (4), must be maintained for three years. At a minimum, the results must list each component tested, indicate whether each component tested meets criteria in subparagraphs 135.5(1)“a”(3) and (4), or needs to have action taken, and describe any action taken to correct an issue; and

(3) The results of tank tightness testing, line tightness testing, and vapor monitoring using a tracer compound placed in the tank system conducted in accordance with paragraph 135.21(2)“f” must be retained until the next test is conducted; and

c. Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least one year after the servicing work is completed, or for another reasonable time period determined by the department. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five years from the date of installation.

[ARC 8469B, IAB 1/13/10, effective 2/17/10 (See Delay note at end of chapter); ARC 0559C, IAB 1/9/13, effective 12/19/12; ARC 1100C, IAB 10/16/13, effective 11/20/13; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.6(455B) Release reporting, investigation, and confirmation.

135.6(1) *Reporting of suspected releases.* Owners and operators of UST systems must report to the department within 24 hours, or within 6 hours in accordance with 567—Chapter 131 if a hazardous condition exists as defined in 567—131.1(455B), or another reasonable time period specified by the department, and follow the procedures in 135.8(1) for any of the following conditions:

a. The discovery by owners and operators or others of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water);

b. Unusual operating conditions observed by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, an unexplained presence of water in the tank, or liquid in the interstitial space of secondarily contained systems), unless:

(1) The system equipment or component is found not to be releasing regulated substances to the environment;

(2) Any defective system equipment or component is immediately repaired or replaced; and

(3) For secondarily contained systems, except as provided for in paragraph 135.5(4)“g”(2)“4,” any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed.

c. Monitoring results, including investigation of an alarm, from a release detection method required under subrules 135.5(2) and 135.5(3) that indicate a release may have occurred unless:

(1) The monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result; or

(2) The leak is contained in the secondary containment and:

1. Except as provided for in paragraph 135.5(4)“g”(2)“4,” any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed; and

2. Any defective system equipment or component is immediately repaired or replaced;

(3) In the case of inventory control, a second month of data does not confirm the initial result or the investigation determines no release has occurred; or

(4) The alarm was investigated and determined to be a non-release event (for example, from a power surge or caused by filling the tank during release detection testing).

135.6(2) *Investigation due to off-site impacts.* When required by the department, owners and operators of UST systems must follow the procedures in 135.6(3) to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the department or brought to its attention by another party.

135.6(3) *Release investigation and confirmation steps.* Owners and operators must immediately investigate and confirm all suspected releases of regulated substances requiring reporting under 135.6(1) within seven days, or another reasonable time period specified by the department, using either the following steps or another procedure approved by the department:

a. System test. Owners and operators must conduct tests (according to the requirements for tightness testing in paragraphs 135.5(4)“c” and 135.5(5)“b”) or, as appropriate, secondary containment testing described in paragraph 135.4(4).

(1) The test must determine whether:

1. A leak exists in that portion of the tank that routinely contains product, or the attached delivery piping; or

2. A breach of either wall of the secondary containment has occurred.

(2) If the system test confirms a leak into the interstice or a release, owners and operators must repair, replace, upgrade, or close the UST system. In addition, owners and operators must begin corrective action in accordance with rule 567—135.9(455B) if the test results for the system, tank, or delivery piping indicate a release exists.

(3) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate a release exists and if environmental contamination is not the basis for suspecting a release.

(4) Owners and operators must conduct a site check as described in paragraph 135.6(3) “b” if the test results for the system, tank, and delivery piping do not indicate a release exists but environmental contamination is the basis for suspecting a release.

b. Site check. A certified groundwater professional must conduct a site check in accordance with the tank closure in place procedures as provided in 135.15(3) or they may conduct a Tier 1 assessment in accordance with subrule 135.9(3). Under either procedure, the certified groundwater professional must follow the policies and procedures applicable to sites where bedrock is encountered before groundwater as provided in 135.8(5) to avoid creating a preferential pathway for soil or groundwater contamination to reach a bedrock aquifer. The certified groundwater professional must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, the certified groundwater professional must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth of groundwater, and other factors appropriate for identifying the presence and source of the release.

(1) If the test results of the site check indicate action levels in 567—135.14(455B) have been exceeded, owners and operators must begin corrective action in accordance with rules 567—135.7(455B) to 567—135.12(455B).

(2) If the test results for the excavation zone or the UST site do not indicate a release has occurred, further investigation is not required.

135.6(4) Reporting and cleanup of spills and overfills.

a. Reportable releases. Owners and operators of UST systems must contain and immediately clean up a spill, overfill or any aboveground release, and report to the department within 24 hours, or within 6 hours in accordance with 567—Chapter 131 if a hazardous condition exists as defined in rule 567—131.1(455B) and begin corrective action in accordance with rules 567—135.7(455B) to 567—135.12(455B) in the following cases:

(1) Spill, overfill or any aboveground release of petroleum that results in a release to the environment that exceeds 25 gallons, causes a sheen on nearby surface water, impacts adjacent property, or contaminates groundwater; and

(2) Spill, overfill or any aboveground release of a hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR 302).

b. Nonreportable releases. Owners and operators of UST systems must contain and immediately clean up a spill, overfill or any aboveground release of petroleum that is less than 25 gallons and a spill, overfill or any aboveground release of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within 24 hours, owners and operators must immediately notify the department.

NOTE: Any spill or overfill that results in a hazardous condition as defined in rule 567—131.1(455B) must be reported within 6 hours. This includes the transporter of the product. A release of a hazardous substance equal to or in excess of its reportable quantity must also be reported immediately (rather than within 24 hours) to the National Response Center under Sections 102 and 103 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and to appropriate state and local authorities under Title III of the Superfund Amendments and Reauthorization Act of 1986.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.7(455B) Release response and corrective action for UST systems containing petroleum or hazardous substances.

135.7(1) General. Owners and operators of petroleum or hazardous substance UST systems must, in response to a confirmed release from the UST system, comply with the requirements of this rule except for USTs excluded under 135.1(3) “b” and UST systems subject to RCRA Subtitle C corrective action requirements under Section 3004(u) of the Resource Conservation and Recovery Act, as amended.

135.7(2) Initial response. Upon confirmation of a release in accordance with 135.6(3) or after a release from the UST system is identified in any other manner, owners and operators must perform the following initial response actions within 24 hours of a release or within another reasonable period of time specified by the department:

a. Report the release to the department (e.g., by telephone or electronic mail);

b. Take immediate action to prevent any further release of the regulated substance into the environment; and

c. Identify and mitigate fire, explosion, and vapor hazards.

135.7(3) *Initial abatement measures.*

a. Unless directed to do otherwise by the department, owners and operators must perform the following abatement measures:

(1) Remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment;

(2) Visually inspect any aboveground releases or exposed below-ground releases and prevent further migration of the released substance into surrounding soils and groundwater;

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements);

(4) Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities. If these remedies include treatment or disposal of soils, the owner and operator must comply with applicable state and local requirements;

(5) Rescinded IAB 7/17/96, effective 8/15/96.

(6) Investigate to determine the possible presence of free product, and begin free product removal as soon as practicable and in accordance with 135.7(5).

b. Within 20 days after release confirmation, or within another reasonable period of time determined by the department, owners and operators must submit a report to the department summarizing the initial abatement steps taken under paragraph “*a*” and any resulting information or data.

135.7(4) *Initial site characterization.* Rescinded IAB 7/17/96, effective 8/15/96.

135.7(5) *Free product assessment and removal.* The free product assessment and removal requirements in this chapter are primarily concerned with a regulated substance that is present as a light nonaqueous phase liquid (LNAPL) in a monitoring well, boring, excavation, or other location at a thickness of more than 0.01 ft. At sites where investigations under subparagraph 135.7(3) “*a*”(6) indicate 0.01 ft. or more of free product, owners and operators must immediately initiate a free product recovery assessment and submit a report in accordance with paragraph 135.7(5) “*d*” and initiate interim free product removal while continuing, as necessary, any actions initiated under subrules 135.7(2) and 135.7(3), or preparing for actions required under rules 567—135.8(455B) to 567—135.12(455B). Owners and operators must immediately begin interim free product removal by bailing or by installation and maintenance of passive skimming equipment until an alternative removal method is required by or approved by the department. A certified groundwater professional must initially determine the frequency of bailing and proper installation and maintenance of the skimming equipment based on a determination of the recharge rate of the free product. The department may approve implementation of this interim removal process by persons not certified as groundwater professionals. For approval a certified groundwater professional must submit (1) sufficient documentation establishing that the bailing or skimming system has been adequately designed and tested, and (2) a written plan for regular maintenance, reporting and supervision by a certified groundwater professional. Interim free product recovery reports must be submitted to the department on a monthly basis and on forms provided by the department. In meeting the requirements of this subrule, owners and operators must:

a. Conduct free product removal at a frequency determined by the recharge rate of the product and in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery by-products in compliance with applicable local, state and federal regulations. Unless approved by the department, free product assessment and recovery activities must be conducted by a certified groundwater professional. Owners and operators must report the results of free product removal activities on forms designated by the department;

b. Use abatement of free product migration as a minimum objective for the design of the free product removal system. Free product recovery systems must be designed to remove free product to the maximum extent practicable;

c. Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

d. Free product recovery assessment and report. Unless directed to do otherwise by the department, prepare and submit to the department, within 45 days after confirming a release, a free product recovery assessment report and a proposal for subsequent free product removal activities. The free product recovery assessment report and removal proposal must contain at least the following information:

(1) The name of the person(s) responsible for implementing the free product removal measures;

(2) The estimated quantity, type and thickness of free product observed or measured in monitoring wells, boreholes, and excavations, the recharge rate in all affected monitoring wells and a detailed description of the procedures used to determine the recharge rate;

(3) A detailed justification for the free product removal technology proposed for the site. Base the justification narrative on professional judgment considering the characteristics of the free product plume (i.e., estimated volume, type of product, thickness, extent), an assessment of cost effectiveness based on recovery costs compared to alternative methods, site hydrology and geology, when the release event occurred, testing conducted to verify design assumptions and the potential for petroleum vapors or explosive conditions to occur in enclosed spaces. Proposals for removal systems other than hand bailing or passive skimming systems must be completed and submitted on a format consistent with the department's corrective action design report.

(4) A schematic and narrative description of the free product recovery system used;

(5) Whether any discharge will take place on site or off site during the recovery operation and where this discharge will be located;

(6) A schematic and narrative description of the treatment system, and the effluent quality expected from any discharge;

(7) The steps that have been or are being taken to obtain necessary permits for any discharge;

(8) The disposition of the recovered free product;

(9) Free product plume definition and map. The extent of free product must be assessed. If monitoring wells are used to define the free product plume, the number and location of wells and separation distance between the wells used to define the plume must be based on the receptors present and the site hydrology and geology. A minimum of five monitoring wells are required to construct the plume map. The boundary of the plume may be determined by half the distance between wells with free product and wells with no free product. If the groundwater professional can adequately define the plume using other technology as approved by the department, fewer than five wells may be used to define the boundary of the plume;

(10) The estimated volume of free product present, how the volume was calculated, recoverable volume and estimated recovery time; and

(11) Identification of all water lines, regardless of construction material, within the area of free product. A water line shall be considered within the area of free product if it is located within the boundary of the free product plume as defined by wells unless it can be demonstrated that no LNAPL exists within 10 feet (horizontally or vertically) of the water line and the LNAPL is not migrating nor is likely to migrate. Water lines within the area of free product must be relocated unless there is no other option and the department has approved an alternate plan of construction. See paragraph 135.12(3) "c."

e. The department will review the free product assessment report; and, if approved, the owner or operator must implement the installation of the approved recovery system within 60 days or other time period approved by the department.

f. Termination of free product recovery activities. Owners and operators may propose to the department to terminate free product recovery activities when significant amounts of hydrocarbons are not being recovered. The department will consider proposals to terminate free product recovery when the amount of product collected from a monitoring well is equal to or less than 0.1 gallon each month for a year unless another plan is approved by the department. When free product activities have been terminated, owners and operators must inspect the monitoring wells monthly for at least a year unless another schedule is approved by the department. The department must be notified and may require that free product recovery

activities be reinitiated if during the monthly well inspections it is determined the product thickness in a monitoring well exceeds 0.02 ft. The monthly well inspection records must be kept available for review by the department.

g. Unless directed to do otherwise by the department, prepare and submit to the department within 180 days after confirming a release, a Tier 2 site cleanup report.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.8(455B) Risk-based corrective action.

135.8(1) General. The objective of risk-based corrective action is to effectively evaluate the risks posed by contamination to human health, safety and the environment using a progressively more site-specific, three-tiered approach to site assessment and data analysis. Based on the tiered assessment, a corrective action response is determined sufficient to remove or minimize risks to acceptable levels. Corrective action response includes a broad range of options including reduction of contaminant concentrations through active or passive methods, monitoring of contamination, use of technological controls or institutional controls.

a. *Tier 1.* The purpose of a Tier 1 assessment is to identify whether a site poses an unreasonable risk to public health and safety or the environment based on limited site data. The objective is to determine maximum concentrations of chemicals of concern at the source of a release(s) in soil and groundwater. The Tier 1 assessment assumes worst-case scenarios in which actual or potential receptors could be exposed to these chemicals at maximum concentrations through certain soil and groundwater pathways. The point of exposure is assumed to be the source showing maximum concentrations. Risk-based screening levels (Tier 1 levels) contained in the Tier 1 Look-Up Table have been derived from models which use conservative assumptions to predict exposure to actual and potential receptors. (These models and default assumptions are contained in Appendix A.) If Tier 1 levels are not exceeded for a pathway, that pathway may not require further assessment. If the maximum concentrations exceed a Tier 1 level, the options are to conduct a more extensive Tier 2 assessment, apply an institutional control, or in limited circumstances excavate contaminated soil to below Tier 1 levels. If all pathways clear the Tier 1 levels, it is possible for the site to obtain a no action required classification.

b. *Tier 2.* The purpose of a Tier 2 assessment is to use site-specific data to assess the risk from chemicals of concern to existing receptors and potential receptors using fate and transport models in accordance with 567—135.10(455B). See 135.10(2)“a.”

c. *Tier 3.* Where site conditions may not be adequately addressed by Tier 2 procedures, a Tier 3 assessment may provide more accurate risk assessment. The purpose of Tier 3 is to identify reasonable exposure levels of chemicals of concern and to assess the risk of exposure to existing and potential receptors based on additional site assessment information, probabilistic evaluations, or sophisticated chemical fate and transport models in accordance with 567—135.11(455B).

d. *Notification.* Whenever the department requires a tiered site assessment and a public water supply well is within 2,500 feet of a leaking underground storage tank site, the department will notify the public water supply operator.

e. *Pathway reevaluation.* Prior to issuance of a no further action certificate in accordance with 135.12(10) and Iowa Code section 455B.474(1)“h”(3), if it is determined that the conditions for an individual pathway that has been classified as “no action required” no longer exist, or the site presents an unreasonable risk to a public water supply well and the model used to obtain the pathway clearance underpredicts the actual contaminant plume, the individual pathway shall be further assessed consistent with the risk-based corrective action provisions in rules 567—135.8(455B) through 567—135.12(455B).

135.8(2) Certified groundwater professional. All assessment, corrective action, data analysis and report development required under rules 567—135.6(455B) to 567—135.12(455B) must be conducted by or under the supervision of a certified groundwater professional in accordance with these rules and department guidance as specified.

135.8(3) Chemicals of concern. Soil and groundwater samples from releases of petroleum regulated substances must always be analyzed for the presence of benzene, ethylbenzene, toluene, and xylenes. In addition, if the release is suspected to include any petroleum regulated substance other than gasoline or gasoline blends, or if the source of the release is unknown, the samples must be tested for the presence of

Total Extractable Hydrocarbons (TEH). Appendices A and B and department Tier 2 guidance define a method for converting TEH values to a default concentration for naphthalene, benzo(a)pyrene, benz(a)anthracene and chrysene and conversion back to a representative TEH value. These default values must be used in order to apply Tier 2 modeling to these constituents in the absence of accurate laboratory analysis.

135.8(4) Boring depth for sampling. When drilling for the placement of groundwater monitoring wells, if groundwater is encountered, drilling must continue to the maximum of 10 feet below the first encountered groundwater or to the bottom of soil contamination as estimated by field screening. If groundwater is not encountered, drilling must continue to the deeper of 10 feet below the soil contamination as estimated by field screening or 75 feet from the ground surface.

135.8(5) Bedrock aquifer assessment. Prior to conducting any groundwater drilling, a groundwater professional must determine if there is a potential to encounter bedrock before groundwater. These potential areas include (1) areas where karst features or outcrops exist in the vicinity and (2) areas with bedrock less than 50 feet from the surface as illustrated in Tier 1 and Tier 2 guidance. The purpose of this determination is to prevent drilling through contaminated subsurface areas thereby creating a preferential pathway to a bedrock aquifer. If the first encountered groundwater is above bedrock but near the bedrock surface or fluctuates above and below bedrock, the groundwater professional should evaluate the subsurface geology and aquifer characteristics to determine the potential for creating a preferential pathway. If it is determined that the aquifer acts like a nongranular aquifer as provided in 135.10(3) “a” or bedrock is encountered before groundwater, the groundwater professional must conduct a Tier 2 assessment for all pathways under 567—135.10(455B), including the specified bedrock procedures under 135.10(3).

If the first encountered groundwater is above bedrock with sufficient separation and aquifer characteristics to establish that it acts as a granular aquifer, site assessment may proceed under the site check procedure in 567—135.6(455B), the Tier 1 procedure in 567—135.9(455B) or the Tier 2 procedure in 567—135.10(455B) as would be customary regardless of the bedrock designation. However, even under this condition, drilling through bedrock should be avoided in contaminated areas.

[ARC 7621B, IAB 3/11/09, effective 4/15/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.9(455B) Tier 1 site assessment policy and procedure.

135.9(1) General. The main objective of a Tier 1 site assessment is to reasonably determine the highest concentrations of chemicals of concern which would be associated with any suspected or confirmed release and an accurate identification of applicable receptors. The potential source of a release, nature of the substance released, site stratigraphy, depth to groundwater, and other appropriate factors must be considered when selecting the sample types, sample locations, and measurements methods. The placement and depth of borings and the construction of monitoring wells must be sufficient to determine the sources of all releases, the vertical extent of contamination, an accurate description of site stratigraphy, and a reliable determination of groundwater flow direction.

a. Pathway assessment. The pathways to be evaluated at Tier 1 are the groundwater ingestion pathway, soil leaching to groundwater pathway, groundwater vapor to enclosed space pathway, soil vapor to enclosed space pathway, soil to water line pathway, groundwater to water line pathway and the surface water pathway. Assessment requires a determination of whether a pathway is complete, an evaluation of actual and potential receptors, and a determination of whether conditions are satisfied for obtaining no further action clearance for individual pathways or for obtaining a complete site classification of “no action required.” A pathway is considered complete if a chemical of concern has a route which could be followed to reach an actual or potential receptor.

b. Pathway clearance. If contaminant concentrations for an individual pathway do not exceed the applicable Tier 1 levels or if a pathway is incomplete, no further action is required to evaluate the pathway unless otherwise specified in these rules. If the contaminant concentrations for a pathway exceed the applicable Tier 1 level(s) in the “Iowa Tier 1 Look-up Table,” the response is to conduct further assessment under Tier 2 or Tier 3 unless an effective institutional control is approved. In limited circumstances excavation of contaminated soils may be used as an option to obtain pathway clearance. If further site assessment indicates site data exceeds an applicable Tier 1 level(s) for a previously cleared pathway or the

conditions justifying a determination of pathway incompleteness change, that pathway must be reevaluated as part of a Tier 2 or Tier 3 assessment.

c. Chemical group clearance. If concentrations for all chemicals of concern within a designated group of chemicals are below the Tier 1 levels, no further action is required as to the group of chemicals unless otherwise specified in these rules. Group one consists of benzene, ethylbenzene, toluene, and xylenes (BTEX). Group two consists of naphthalene, benzo(a)pyrene, benz(a)anthracene and chrysene; TEH default values are incorporated into the Iowa Tier 1 Look-Up Table and Appendix A for group two chemicals.

d. Site classification. A site can be classified as no action required only after all pathways have met the conditions for pathway clearance as provided in this rule.

e. Groundwater sampling procedure. Groundwater sampling and field screening must be conducted in accordance with department Tier 1 guidance. A minimum of three properly constructed groundwater monitoring wells must be installed, subject to the limitations on maximum drilling depths, for the purpose of identifying maximum concentrations of groundwater contamination, suspected sources of releases, and groundwater flow direction.

(1) Field screening must be used to locate suspected releases and to determine locations with the greatest concentrations of contamination. Field screening is required as per department guidance at each former and current tank basin, each former and current pump island, along the piping, and at any other areas of actual or suspected releases. In placing monitoring wells, the following must be considered: field screening data, available current and historical information regarding the releases, tank and piping layout, site conditions, and drilling data available from sites in the vicinity. At least one well must be placed at each suspected source of release which shall include at a minimum: the pump island with the greatest field screening level, each current and former underground storage tank basin, and if field screening shows greater levels than at the pump islands or tank basins, at other suspected sources of releases. As a general rule, wells should be installed outside of the tank basin through native soils but as close to the tank basin as feasible. A well must be installed in a presumed downgradient direction and within 30 feet of the sample with the greatest field screening level. Three of the wells must be placed in a triangular arrangement to determine groundwater flow direction.

(2) Where the circumstances which prompt a Tier 1 assessment identify a discrete source and cause of a release, and the groundwater professional is able to rule out other suspected sources or contributing sources such as pump islands, piping runs and tank basins, the application of field screening and groundwater well placement may be limited to the known source.

f. Soil sampling procedure. The objective of soil sampling is to identify the maximum concentrations of soil contamination in the vadose and saturated zones and to identify sources of releases. The same principles stated above apply to soil sampling. Soil samples must be taken from borings with the greatest field screening levels even if the boring will not be converted to a monitoring well. At a minimum, soil and groundwater samples must be collected for analysis from all borings which are converted to monitoring wells.

Iowa Tier 1 Look-Up Table

Media	Exposure Pathway	Receptor	Group 1				Group 2: TEH	
			Benzene	Toluene	Ethylbenzene	Xylenes	Diesel*	Waste Oil
Groundwater (µg/L)	Groundwater Ingestion	Actual	5	1,000	700	10,000	1,200	400
		Potential	290	7,300	3,700	73,000	75,000	40,000
	Groundwater Vapor to Enclosed Space	All	1,540	20,190	46,000	NA	2,200,000	NA
	Groundwater to Water Line	PVC or Gasketed Mains	7,500	6,250	40,000	48,000	75,000	40,000
		PVC or Gasketed Service Lines	3,750	3,120	20,000	24,000	75,000	40,000
		PE/PB/AC Mains or Service Lines	200	3,120	3,400	19,000	75,000	40,000
	Surface Water	All	290	1,000	3,700	73,000	75,000	40,000
Soil (mg/kg)	Soil Leaching to Groundwater	All	0.54	42	15	NA	3,800	NA
	Soil Vapor to Enclosed Space	All	1.16	48	79	NA	47,500	NA
	Soil to Water Line	All	2.0	3.2	45	52	10,500	NA

NA: Not applicable. There are no limits for the chemical for the pathway, because for groundwater pathways the concentration for the designated risk would be greater than the solubility of the pure chemical in water, and for soil pathways the concentration for the designated risk would be greater than the soil concentration if pure chemical were present in the soil.

TEH: Total Extractable Hydrocarbons. The TEH value is based on risks from naphthalene, benzo(a)pyrene, benz(a)anthracene, and chrysene. Refer to Appendix B for further details.

Diesel*: Standards in the Diesel column apply to all low volatile petroleum hydrocarbons except waste oil.

135.9(2) Conditions requiring Tier 1 site assessment. Unless owners and operators choose to conduct a Tier 2 assessment, the presence of bedrock requires a Tier 2 assessment as provided in 135.8(5), or these rules otherwise require preparation of a Tier 2 site assessment, a Tier 1 site assessment must be completed in response to release confirmation as provided in rule 567—135.6(455B), or tank closure investigation under 567—135.15(455B), or other reliable laboratory analysis which confirms the presence of contamination above the action levels in 567—135.14(455B).

135.9(3) Tier 1 assessment report. Unless directed to do otherwise by the department or the owners or operators choose to prepare a Tier 2 site cleanup report, owners and operators must assemble information about the site and the nature of the release in accordance with the department Tier 1 guidance, including information gained while confirming the release under 567—135.6(455B), tank closure under 567—135.15(455B) or completing the initial abatement measures in 135.7(1) and 135.7(2). This information must include, but is not necessarily limited to, the following:

- Data on the nature and estimated quantity of release.
- Results of any release investigation and confirmation actions required by subrule 135.6(3).
- Results of the free product investigations required under 135.7(3)“a”(6), to be used by owners and operators to determine whether free product must be recovered under 135.7(5).
- Chronology of property ownership and underground storage tank ownership, identification of the person(s) having control of, or having responsibility for the daily operation of the underground storage tanks and the operational history of the underground storage tank system. The operational history shall include, but is not limited to, a description of or suspected known subsurface or aboveground releases, past remediation or other corrective action, type of petroleum product stored, recent tank and piping tightness test results, any underground storage tank system repairs, upgrades or replacements and the underground storage tank and piping leak detection method being utilized. The operational history shall confirm that

current release detection methods and record keeping comply with the requirements of 567—135.5(455B), that all release detection records have been reviewed and report any evidence that a release detection standard has been exceeded as provided in 135.5(4) and 135.5(5).

e. Appropriate diagrams of the site and the underground storage tank system and surrounding land use, identifying site boundaries and existing structures and uses such as residential properties, schools, hospitals, child care facilities and a general description of relevant land use restrictions and known future land use.

f. Current proof of financial responsibility as required by 567—136.19(455B) and 567—136.20(455B) and the status of coverage for corrective action under any applicable financial assurance mechanism or other financial assistance program.

g. A receptor survey including but not limited to the following: existing buildings, enclosed spaces (basements, crawl spaces, utility vaults, etc.), conduits (gravity drain lines, sanitary and storm sewer mains and service lines), water lines and other utilities within 500 feet of the source. For conduits and enclosed spaces, there must be a description of construction material, conduit backfill material, slope of conduit and trenches (include flow direction of sewers), burial depth of utilities or subsurface enclosed spaces, and the relationship to groundwater elevations.

h. An explosive vapor survey of enclosed spaces where there may be the potential for buildup of explosive vapors. The groundwater professional must provide a specific justification for not conducting an explosive vapor survey.

i. A survey of all surface water bodies within 200 feet of the source.

j. A survey of all active, abandoned and plugged groundwater wells within 1,000 feet of the source with a description of construction and present or future use.

k. Accurate and legible site maps showing the location of all groundwater monitoring wells, soil borings, field screening locations and screening values, and monitoring well and soil boring construction logs.

l. A tabulation of all laboratory analytical results for chemicals of concern and copies of the laboratory analytical reports.

m. Results of hydraulic conductivity testing and description of the procedures utilized.

n. A Tier 1 site assessment in accordance with the department's Tier 1 guidance. The Tier 1 report shall be submitted on forms and in a format prescribed by this guidance.

135.9(4) *Groundwater ingestion pathway assessment.* The groundwater ingestion pathway addresses the potential for human ingestion of petroleum-regulated substances from existing groundwater wells or potential drinking water wells.

a. Pathway completeness. This pathway is considered complete if: (1) there is a drinking or non-drinking water well within 1,000 feet of the source(s) exhibiting the maximum concentrations of the chemicals of concern; or (2) the first encountered groundwater is a protected groundwater source.

b. Receptor evaluation. A drinking or non-drinking water well within 1,000 feet of the source(s) is an actual receptor. The Tier 1 levels for actual receptors apply to drinking water wells and the Tier 1 levels for potential receptors apply to non-drinking water wells. Potential receptor points of exposure exist if the first encountered groundwater is a protected groundwater source but no actual receptors presently exist within 1,000 feet of the source.

c. Pathway clearance. If the pathway is incomplete, no further action is required for this pathway. If the Tier 1 level for actual or potential receptors is not exceeded, no further action is required for this pathway. Groundwater wells that are actual or potential receptors may be plugged in accordance with 567—Chapter 39 and 567—Chapter 49 and may result in no further action clearance if the groundwater is not a protected groundwater source and the pathway is thereby incomplete.

d. Corrective action response. If maximum concentrations exceed the applicable Tier 1 levels for either actual or potential receptors, a Tier 2 assessment must be conducted unless effective institutional controls are implemented as provided below. Technological controls are not acceptable at Tier 1 for this pathway. Abandonment and plugging of drinking and non-drinking water wells in accordance with 567—Chapters 39 and 49 is an acceptable corrective action response.

e. Use of institutional controls. To apply an effective institutional control, if drinking or non-drinking water wells are present within 1,000 feet of the source, and the applicable Tier 1 level is exceeded, the well(s) for which there is an exceedence must be properly plugged. If the groundwater is a protected groundwater source and the maximum concentrations do not exceed the Tier 1 level for potential receptors but do exceed the Tier 1 level for actual receptors, the owner or operator must provide notification of site conditions on a department form to the department water supply section, or if a county has delegated authority, then the designated county authority responsible for issuing private water supply construction permits or regulating non-public water well construction as provided in 567—Chapters 38 and 49.

If the groundwater is a protected source and the maximum concentrations exceed the Tier 1 level for potential receptors, the owner or operator must (1) implement an institutional control prohibiting the use of the groundwater for installation of drinking and non-drinking water wells within 1,000 feet of the source; and (2) provide notification as provided above. If an effective institutional control is not feasible, a Tier 2 assessment must be performed for this pathway in accordance with rule 567—135.10(455B).

f. Receptor evaluation for public water supply wells. Rescinded IAB 3/11/09, effective 4/15/09.

135.9(5) Soil leaching to groundwater pathway assessment. This pathway addresses the potential for soil contamination to leach to groundwater creating a risk of human exposure through the groundwater ingestion pathway.

a. Pathway completeness. If the groundwater ingestion pathway is complete, the soil leaching to groundwater pathway is considered complete.

b. Receptor evaluation. There is a single receptor type for this pathway and one applicable Tier 1 level.

c. Pathway clearance. If the pathway is incomplete or the pathway is complete and the maximum concentrations of chemicals of concern do not exceed the Tier 1 levels, no further action is required for assessment of this pathway.

d. Corrective action response. If the Tier 1 levels are exceeded for this pathway, a Tier 2 assessment must be conducted or alternatively, institutional controls or soil excavation may be undertaken in accordance with 135.9(7)“h.”

e. Use of institutional controls. Institutional controls must satisfy the conditions applicable to the groundwater ingestion pathway as provided in 135.9(4)“e.”

135.9(6) Groundwater vapor to enclosed space pathway assessment. This pathway addresses the potential for vapors from contaminated groundwater to migrate to enclosed spaces where humans could inhale chemicals of concern at unacceptable levels. This pathway assessment assumes the health-based Tier 1 levels will adequately protect against any associated short- and long-term explosive risks.

a. Pathway completeness. This pathway is always considered complete for purposes of Tier 1 and must be evaluated.

b. Explosive vapor survey. An explosive vapor survey must be conducted in accordance with procedures outlined in the department Tier 1 guidance. If potentially explosive levels are detected, the groundwater professional must notify the owner or operator with instructions to report the condition in accordance with 567—Chapter 131. The owner or operator must begin immediate response and abatement procedures in accordance with 567—135.7(455B) and 567—Chapter 133.

c. Receptor evaluation. For purposes of Tier 1, there is one receptor type for this pathway and the Tier 1 level applies regardless of the existence of actual or potential receptors.

d. Pathway clearance. No further action is required for this pathway, if the maximum groundwater concentrations do not exceed the Tier 1 levels for this pathway.

e. Corrective action response. If the maximum concentrations exceed the Tier 1 levels for this pathway, a Tier 2 assessment of this pathway must be conducted unless institutional controls are implemented. Technological controls are not acceptable at Tier 1 for this pathway.

f. Use of institutional controls. An institutional control must be effective to prohibit the placement of enclosed space receptors within 500 feet of the source.

135.9(7) Soil vapor to enclosed space pathway assessment. This pathway addresses the potential for vapors from contaminated soils to migrate to enclosed spaces where humans could inhale chemicals of

concern at unacceptable levels. This pathway assessment assumes health-based screening levels at Tier 1 will adequately protect against short- and long-term explosive risks.

a. *Pathway completeness.* This pathway is always considered complete for purposes of Tier 1 and must be evaluated.

b. *Explosive vapor survey.* An explosive vapor survey must be conducted in accordance with procedures outlined in the department Tier 1 guidance. If potentially explosive levels are detected, the groundwater professional must notify the owner or operator with instructions to report the condition in accordance with 567—Chapter 131. The owner or operator must begin immediate response and abatement procedures in accordance with 567—135.7(455B) and 567—Chapter 133.

c. *Receptor evaluation.* For purposes of Tier 1, there is one receptor type for this pathway, and the Tier 1 level applies regardless of existing or potential receptors.

d. *Pathway clearance.* No further action is required for this pathway, if the maximum soil concentrations do not exceed the Tier 1 levels for this pathway. If the Tier 1 levels are exceeded, soil gas measurements may be taken in accordance with the Tier 2 guidance at the area(s) of maximum concentration. Subject to confirmation sampling, if the soil gas measurements do not exceed the target levels in 135.10(7)“f,” no further action is required for this pathway. If the Tier 1 level is not exceeded but the soil gas measurement exceeds the target level, further action is required for the pathway.

e. *Soil gas samples.* To establish that the soil gas measurement is representative of the highest expected levels, a groundwater professional must obtain two soil gas samples taken at least two weeks apart. One of the samples should be collected beneath the frost line depth during a seasonal period of lowest groundwater elevation.

f. *Corrective action response.* If the maximum concentrations exceed the Tier 1 levels and the soil gas measurements exceed target levels for this pathway, or if no soil gas measurement was taken, a Tier 2 assessment of this pathway must be conducted unless institutional controls are implemented or soil excavation is conducted as provided below. Technological controls are not acceptable at Tier 1 for this pathway.

g. *Use of institutional controls.* An institutional control must be effective to eliminate the placement of enclosed space receptors within 500 feet of the source.

h. *Soil excavation.* Excavation of contaminated soils for the purpose of removing soils contaminated above the Tier 1 levels is permissible as an alternative to conducting a Tier 2 assessment. Adequate field screening methods must be used to identify maximum concentrations during excavation. At a minimum, one soil sample must be taken for field screening every 100 square feet of the base and each sidewall. Soil samples must be taken for laboratory analysis at least every 400 square feet of the base and each sidewall of the excavated area to confirm that remaining concentrations are below Tier 1 levels. If the base or a sidewall of the excavation is less than 400 square feet, a minimum of one sample must be analyzed for each sidewall and the base.

135.9(8) *Groundwater to water line pathway assessment.* This pathway addresses the potential for creating a drinking water ingestion risk due to contact with water lines and causing infusion to the drinking water.

a. *Pathway completeness and receptor evaluation.*

(1) Actual receptors. This pathway is considered complete for an actual receptor if there is an existing water line within 200 feet of the source and the first encountered groundwater is less than 20 feet below ground surface.

(2) Potential receptors. This pathway is considered complete for a potential receptor if the first encountered groundwater is less than 20 feet below ground surface.

b. *Pathway clearance.* If the pathway is not complete, no further action is required for this pathway. If the pathway is complete and the maximum concentrations of all chemicals of concern do not exceed the Tier 1 levels for this pathway, no further action is required for this pathway.

c. *Utility company notification.* The utility company which supplies water service to the area must be notified of all actual and potential water line impacts as soon as knowledge of a potential risk is determined.

d. *Corrective action response.*

(1) For actual receptors, if the Tier 1 levels are exceeded for this pathway, all water lines within 200 feet must be replaced with water line materials and gasket materials of appropriate construction in accordance with current department standards set forth in 567—Chapter 43 and with no less than nitrile or FKM gaskets or as otherwise approved by the department, or the water lines must be relocated beyond the 200-foot distance from the source. A Tier 2 assessment must be conducted for this pathway if lines are not replaced or relocated.

(2) For potential receptors, upon utility company notification, no further action will be required for this pathway.

135.9(9) *Soil to water line pathway assessment.* This pathway addresses the potential for creating a drinking water ingestion risk due to contact with water lines and infusion into the drinking water.

a. Pathway completeness and receptor evaluation.

(1) Actual receptors. This pathway is considered complete for an actual receptor if a water line exists within 200 feet of the source.

(2) Potential receptors. This pathway is always considered complete for potential receptors.

b. Pathway clearance. If the pathway is not complete for actual receptors, no further action is required for this pathway. If the pathway is complete for actual receptors and the maximum concentrations of all chemicals of concern do not exceed Tier 1 levels for this pathway, no further action is required. For potential receptors, upon utility company notification, no further action will be required for this pathway for potential receptors.

c. Utility company notification. The utility company which supplies water service to the area must be notified of all actual and potential water line impacts as soon as knowledge of a potential risk is determined.

d. Corrective action response. For actual receptors, if the Tier 1 levels are exceeded for this pathway, all water lines within 200 feet must be replaced with water line materials and gasket materials of appropriate construction in accordance with current department standards set forth in 567—Chapter 43 and with no less than nitrile or FKM gaskets or as otherwise approved by the department, or the water lines must be relocated beyond the 200-foot distance from the source. Excavation of soils to below Tier 1 levels may be undertaken in accordance with 135.9(7)“h.” If none of these options is implemented, a Tier 2 assessment must be conducted for this pathway.

135.9(10) *Surface water pathway assessment.* This pathway addresses the potential for contaminated groundwater to impact surface water bodies creating risks to human health and aquatic life.

a. Pathway completeness. This pathway is considered complete if a surface water body is present within 200 feet of the source. For purposes of Tier 1, surface water bodies include both general use segments and designated use segments as provided in 567—subrule 61.3(1).

b. Receptor evaluation. The Tier 1 levels for this pathway only apply to designated use segments of surface water bodies as provided in 567—subrules 61.3(1) and 61.3(5). The point of compliance is the source with the highest concentrations of chemicals of concern. General use segments of surface water bodies as provided in 567—paragraph 61.3(1)“a” are only subject to the visual inspection criteria.

c. Visual inspection requirements. A visual inspection of all surface water bodies within 200 feet of the source must be conducted to determine if there is evidence of a sheen on the water or there is evidence of petroleum residue along the bank. If a sheen or residue is evident or has been reported to be present, the groundwater professional must make a sufficient investigation to reasonably determine its source. If in the opinion of the groundwater professional, the sheen is not associated with the underground storage tank site, the professional must report and reasonably justify this opinion. If in the opinion of the groundwater professional the sheen is not a petroleum-regulated substance, a sample must be laboratory tested in accordance with 567—135.16(455B) to confirm it is not a petroleum-regulated substance.

d. Pathway clearance. If the pathway is not complete or it is complete and the maximum concentrations of all chemicals of concern at the point of compliance do not exceed the Tier 1 levels and there is no petroleum sheen or residue attributable to the site, no further action is required for assessment of this pathway.

e. Corrective action response. If a Tier 1 level is exceeded for any chemical of concern for a designated use segment within 200 feet of the source, or the groundwater professional determines the

presence of a petroleum-regulated substance sheen or residue, a Tier 2 assessment of this pathway must be conducted.

135.9(11) *Tier 1 submission and review procedures.*

a. Within 90 calendar days of release confirmation or another reasonable period of time determined by the department, owners and operators must submit to the department a Tier 1 report in a format prescribed by the department and in accordance with these rules and the department Tier 1 guidance.

b. If the owner or operator elects to prepare a Tier 2 site cleanup report instead of a Tier 1 assessment, the department must be notified in writing prior to the expiration of the Tier 1 submission deadline. The Tier 2 site cleanup report must be submitted to the department in accordance with rule 567—135.10(455B) within 180 calendar days of release confirmation or another reasonable period of time determined by the department.

c. Tier 1 report completeness and accuracy. A Tier 1 report is considered to be complete if it contains all the information and data required by this rule and the department Tier 1 guidance. The report is accurate if the information and data is reasonably reliable based first on application of the standards in these rules and department guidance and second, generally accepted industry standards.

d. The certified groundwater professional shall include the following certification with the Tier 1 site assessment report:

I, _____, Groundwater Professional Certification No. _____, am familiar with all applicable requirements of Iowa Code section 455B.474 and all rules and procedures adopted thereunder including, but not limited to, 567—Chapter 135 and the Department of Natural Resources Tier 1 guidance. Based on my knowledge of those documents and information I have prepared and reviewed regarding this site, UST Registration No. _____, LUST No. _____ I certify that this document is complete and accurate as provided in 567 IAC 135.9(11)“c” and meets the applicable requirements of the Tier 1 site assessment.

Signature:

Date:

e. Upon receipt of the groundwater professional’s certified Tier 1 report, the groundwater professional’s proposed site classification for the site shall be determinative unless, within 90 days of receipt, the department identifies material information in the report that is inaccurate or incomplete. Material information may be data found to be inaccurate or incomplete or a report that lacks information which, if correct and complete, would result in a different site classification than proposed by the certified groundwater professional. If the department determines that the site cleanup report is inaccurate or incomplete, the department shall notify the groundwater professional of the inaccurate or incomplete information within 90 days of receipt of the report and shall work with the groundwater professional and the party responsible for cleanup to obtain correct information or additional information necessary to appropriately classify the site. If the groundwater professional recommends proceeding to Tier 2, or a Tier 2 site cleanup report is required pursuant to 135.7(5)“g,” 135.8(5), or 567—135.9(455B), the groundwater professional’s site classification and pathway classification recommendations shall not be considered determinative until the Tier 2 report is submitted for review as provided in 135.10(11).

f. If a “no action required” site classification is proposed, the department shall review the report in accordance with 135.12(6) and the review standards in paragraph 135.9(11)“e.”

135.9(12) *Tier 1 site classification and corrective action response.*

a. No action required site classification. At Tier 1, a site is only eligible for a “no action required” classification. To be classified as no action required, each pathway must meet the requirements for pathway clearance as specified in this rule. If the department determines a no action required site classification is appropriate, a no further action certificate will be issued as provided in 135.12(10).

b. Where an individual pathway or a chemical group meets the requirements for clearance but the site is not entitled to a no action required classification, only those pathways and chemical groups which do not meet the no further action requirements must be evaluated as part of a Tier 2 assessment as provided in rule 567—135.10(455B).

c. Compliance monitoring and confirmation sampling. Compliance monitoring is not an acceptable corrective action at Tier 1. Except for soil gas sampling under 135.9(7), confirmation sampling to verify a

sample does not exceed a Tier 1 level is not required. However, the department retains the authority to require confirmation sampling from existing groundwater monitoring wells if a no action required classification is being proposed at Tier 1 and the department has a reasonable basis to question the representative validity of the samples based on, for example, the seasonal bias of the sampling, evidence of multiple sources of releases, marginal groundwater monitoring well locations and analytical variability.

d. Expedited corrective action. Expedited corrective action is permissible in accordance with 135.12(11).

[ARC 7621B, IAB 3/11/09, effective 4/15/09; ARC 9011B, IAB 8/25/10, effective 9/29/10; ARC 9331B, IAB 1/12/11, effective 2/16/11; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.10(455B) Tier 2 site assessment policy and procedure.

135.10(1) General conditions. A Tier 2 site assessment must be conducted and a site cleanup report submitted for all sites which have not obtained a no action required site classification and for all pathways and chemicals of concern groups that have not obtained no further action clearance as provided in 567—135.9(455B). If in the course of conducting a Tier 2 assessment, data indicates the conditions for pathway clearance under Tier 1 no longer exist, the pathway shall be further assessed under this rule. The Tier 2 assessment and report must be completed whenever free product is discovered as provided in 567—135.7(455B). If the owner or operator elects to complete the Tier 2 site assessment without doing a Tier 1 assessment, all the Tier 1 requirements as provided in 567—135.9(455B) must be met in addition to requirements under this rule.

a. Guidance. The Tier 2 site assessment shall be conducted in accordance with the department's "Tier 2 Site Assessment Guidance" and these rules. The site cleanup report shall be submitted on forms and in a format prescribed by this guidance. The Tier 2 data analysis shall be performed by using computer software or online application developed by the department.

b. Classification. At Tier 2, individual pathways may be classified as high risk or low risk or no action required and separate classification criteria may apply to actual and potential receptors for any pathway. A single pathway may have multiple classifications based on actual or potential receptor evaluations. A pathway must meet both the criteria for actual and potential receptors for the pathway to obtain a classification of no action required. Sites may have multiple pathway classifications. For a site to obtain a no action required classification, all pathways must meet the individual pathway criteria for no action required classification.

c. Public right-of-way. As a general rule, public right-of-way will not be considered an area of potential receptor exposure except for potential sanitary sewer evaluation under the soil and groundwater vapor pathways, subrules 135.10(6) and 135.10(7).

135.10(2) General Tier 2 assessment procedures.

a. Objectives. The objective of a Tier 2 assessment is to collect site-specific data and with the use of Tier 2 modeling determine what actual or potential receptors could be impacted by chemicals of concern and what concentrations at the source are predicted to achieve protection of these receptors. Both Tier 1 and Tier 2 are based on achieving similar levels of protection of human health, safety and the environment.

b. Groundwater modeling. Tier 2 uses fate and transport models to predict the maximum distance groundwater contamination is expected to move and the distribution of concentrations of chemicals of concern within this area. The model is used for two basic purposes. One, it is used to predict at what levels of concentration contamination would be expected to impact actual and potential receptors. Two, it is used to determine a concentration at the source which if achieved, and after dispersion and degradation, would protect actual and potential receptors at the point of exposure. In predicting the transport of contaminants, the models assume the contaminant plume is at "steady state" such that concentrations throughout the plume have reached a maximum level and are steady or decreasing. The Tier 2 models are only designed to predict transport in a direct line between the source and downgradient to a receptor. In order to more reasonably define a modeled plume in all directions, paragraph "i" defines a method of decreasing modeled concentrations as a percentage of their distance in degrees from the downgradient direction.

c. Soil vapor models. The soil vapor models are vertical transport models and do not use modeling to predict soil contaminant transport horizontally to receptors.

d. *Soil leaching to groundwater modeling.* The soil leaching to groundwater model is a model that predicts the maximum concentrations of chemicals of concern that would be expected in groundwater due to vertical leaching from the area of maximum soil concentrations and then incorporates the groundwater transport models to predict contaminant transport through groundwater pathways.

e. *Modeling default parameters.* The Tier 2 model formulas and applicable parameters are designated in Appendix B and must be followed unless otherwise specified in these rules. Unless otherwise specified, target levels at a point of exposure may be the Tier 1 level(s) or may be determined using site-specific parameters. The target level at a point of exposure is calculated using the Tier 1 formulas in Appendix A and either site-specific measurements or the default values for those parameters identified as “optional” and “site-specific” in Appendix B.

f. *Source width.* The source width and source length are variables used in modeling and must be determined by the following criteria and as specified in the department’s Tier 2 guidance. The following are not to be used as criteria for defining the extent of the contaminant plumes.

(1) Source width (equals S_w in models) for groundwater transport modeling. The sum of group one chemical (benzene, toluene, ethylbenzene, xylenes or “BTEX”) concentrations for each groundwater sample is determined and the location of the sample with the maximum total BTEX is identified. Linear interpolation is used to estimate the area where groundwater concentrations would be expected to exceed 50 percent of the maximum BTEX value, and this area is considered for the source width measurement. The same procedure is used to determine source width for group two chemicals, using TEH in groundwater. The width of the groundwater contamination perpendicular to estimated groundwater flow direction (S_w) is determined, and the larger of either group one or group two chemicals is used in the groundwater transport model.

(2) Source width (S_w) and source length (equals W in models) for soil leaching to groundwater transport modeling. Both the source width perpendicular to the estimated groundwater flow direction (S_w) and the source length parallel to the estimated groundwater flow direction (W) are used in the soil leaching to groundwater model. The sum of BTEX concentrations for each soil sample is determined and the location of the sample with the maximum total BTEX is identified. Concentrations from both the vadose zone and the saturated zone must be considered when determining the maximum. Linear interpolation is used to estimate the area where soil concentrations would be expected to exceed 50 percent of the maximum BTEX value, and this area is considered for the source width and source length measurements. The same procedure is used to determine source width for group 2 chemicals, using TEH in soil. Source width and source length measurements for BTEX in groundwater are also taken following the same linear interpolation criteria in “f”(1) above. The source width value used in the model is the greatest of either the soil source width measurements or the groundwater source width measurement. The source length value used in the model is the greatest of either of the soil source length measurements or the groundwater length measurement.

g. *Modeled simulation line.* The simulation line represents the predicted maximum extent of groundwater contamination and distribution of contaminant concentrations between the source(s) and actual or potential receptor locations. The model calculates the simulation line using maximum concentrations at the source(s) and predicting the amount of dispersion and degradation. Modeled data in the simulation line are compared with actual contaminant concentrations to verify the predictive validity of the model and to make risk classification decisions.

h. *Modeled site-specific target level (SSTL) line.* The modeled SSTL line represents acceptable levels of contaminant concentrations at points between and including the source(s) and an applicable point(s) of exposure or other point(s) of compliance (ex. a potential receptor point of exposure). The SSTL line is calculated by assuming an applicable target level concentration at the point(s) of exposure or point(s) of compliance and modeling back to the source to determine the maximum concentrations at the source (SSTL) that must be achieved to meet the target level at the point of exposure or compliance. Comparison of contaminant concentrations from actual samples to this SSTL line is used to determine a risk classification and determine appropriate corrective action response.

i. *Crossgradient and upgradient modeling.* In determining the SSTL line and the simulation line in directions other than downgradient, the modeled contaminant concentrations are applied to reduced

distances, as specified in the “Tier 2 Guidance.” The modeled results are applied to 100 percent of the distance within an angle of 30 degrees on either side of the range of downgradient directions, as specified in Tier 2 guidance. The modeled results are applied to 20 percent of the distance in the upgradient direction and directly proportional distances between these two outer limits. If the groundwater gradient is less than 0.005 or the groundwater contaminant plume shows no definitive direction or shows directional reversals, the modeled concentrations are applied to 100 percent of the distance in all directions from the source. As the downgradient velocity increases, the upgradient modeled distance is reduced to less than 20 percent of the downgradient modeled distance.

j. Plume definition. The purpose of plume definition at Tier 2 is to obtain sufficient data to determine the impact on actual and potential receptors, to determine and confirm the highest levels of contamination, to verify the validity of the models, and to determine groundwater flow direction. The number and location of borings and monitoring wells and the specificity of plume definition will depend on the pathway or pathways being assessed and the actual or potential receptors of concern. Unless otherwise specified, groundwater and soil contamination shall be defined to Tier 1 levels for the applicable pathways. Linear interpolation between two known concentrations must be used to delineate plume extent. Samples with no concentrations detected shall be considered one-half the detection limit for interpolation purposes.

k. Pathway completeness. Unless a pathway has obtained clearance under Tier 1, each pathway must be evaluated at Tier 2. Pathways are generally considered complete (unless otherwise specified) and receptors affected if actual receptors or potential receptor points of exposure exist within the modeled contaminant plume using the modeled simulation line calculated to the applicable target level at a point of exposure. If the actual contaminant plume exceeds the modeled plume, the pathway is complete and must be evaluated if actual or potential points of exposure exist within a distance extending 10 percent beyond the edge of the defined plume.

l. Points of exposure and compliance. For actual receptors, the point(s) of exposure is the receptor. For potential receptors, the potential receptor point(s) of exposure is determined by using actual plume definition or the modeled simulation line to determine all points which exceed the target level(s) for potential receptors. The potential receptor point(s) of exposure is the location(s) closest to the source where a receptor could reasonably exist and which is not subject to an institutional control; for example, the source is the potential receptor point of exposure if not subject to an institutional control or an adjoining property boundary line if that property is not subject to an institutional control. At Tier 2, the point(s) of exposure or potential receptor point(s) of exposure is a point of compliance unless otherwise specified. Other points of compliance are specified by rules and will generally include all points along the SSTL line for purposes of pathway and site classification and corrective action response.

135.10(3) Bedrock assessment.

a. General. As provided in 135.8(5), if bedrock is encountered before groundwater, special assessment procedures under this subrule apply. The Tier 2 assessment procedures apply to the extent they are not inconsistent with this subrule. The objectives of these special procedures are to avoid creating a preferential pathway for contamination through a confining layer to a bedrock aquifer; to avoid creating a preferential pathway to a fractured system, and to determine whether groundwater transport modeling can be used and, if not, what alternative procedures are required. The owner or operator may choose to conduct a Tier 3 assessment under 567—135.11(455B) as an alternative to proceeding under this subrule. For sites where bedrock is encountered before groundwater, there are three general categories of site conditions which determine the assessment procedures that apply:

(1) Nongranular bedrock. Nongranular bedrock is bedrock which is determined to not act as a granular aquifer as provided in subparagraph (2). Nongranular bedrock generally has some type of fractured system where groundwater transport modeling cannot be applied and which makes it difficult to define the extent of contamination.

(2) Granular bedrock. Granular bedrock is bedrock which is determined to act as a granular aquifer and for which monitoring wells do not exist at the source. For purposes of this rule, a granular aquifer is one that shows no extraordinary variations or inconsistencies in groundwater elevations across the site, groundwater flow, hydraulic conductivities, or total dissolved solid concentrations among monitoring wells. Although the extent of contamination can be defined in granular bedrock, groundwater transport modeling

cannot be used because monitoring wells shall not be installed at the source if soil contamination is present. If soil contamination above a Tier 1 level is not identified or an overexcavation of contaminated soil has successfully removed all soil contamination greater than a Tier 1 level, then monitoring wells can be installed in the source area and the site can be evaluated as exempt granular bedrock.

(3) *Exempt granular bedrock.* Exempt granular bedrock is bedrock which is determined to act as a granular aquifer as provided in subparagraph (2) and for which monitoring wells exist at the source as of August 15, 1996. Sites in exempt granular bedrock shall be evaluated using regular Tier 1 and Tier 2 procedures in this rule.

NOTE: Nongranular bedrock is subject to special bedrock assessment procedures even if groundwater monitoring wells exist at the source, because the flow is not predictable by the Tier 2 model.

b. Exempt soil pathways. The soil vapor to enclosed space pathway and the soil to water lines pathway shall be assessed under the regular Tier 2 procedures in subrules 135.10(7) and 135.10(9) respectively. In all cases, the assessment must comply with the policy of avoiding a preferential pathway to groundwater consistent with subrule 135.8(5) and this subrule.

c. Soil and groundwater assessment. The vertical and horizontal extent of soil contamination shall first be defined to Tier 1 levels for the soil leaching to groundwater pathway without drilling into bedrock. A minimum of three groundwater monitoring wells shall be located and installed between 50 to 100 feet beyond the soil contamination Tier 1 levels to avoid creating a preferential pathway. Analytical data as normally required by these rules and guidance must be obtained.

d. Soil contamination remediation. For all sites where soil contamination exceeds the soil leaching to groundwater Tier 1 levels, soil excavation or other active soil remediation technology must be conducted in accordance with department guidance to reduce concentrations to below this Tier 1 level. Soil remediation monitoring must be conducted in accordance with 567—135.12(455B).

e. Groundwater plume definition. If it is determined the groundwater acts in a manner consistent with a granular aquifer as provided in subparagraph “a”(2) and guidance but does not meet the criteria for exemption under subparagraph “a”(3), the plume must be defined. The policy of avoiding the creation of a preferential pathway to the bedrock aquifer in accordance with 135.8(5) must be followed.

f. Soil leaching to groundwater ingestion pathway. Under this subrule, the soil leaching to groundwater pathway only need be evaluated in combination with the groundwater ingestion pathway. Because of the policies requiring soil remediation to the soil leaching to groundwater Tier 1 levels under paragraphs “d” and “k,” the soil leaching pathway target levels applicable to other groundwater transport pathways and other soil pathways would not be exceeded. If a soil leaching to groundwater Tier 1 level is exceeded, the pathway is high risk.

g. Special procedures for the groundwater ingestion pathway.

(1) A protected groundwater source is assumed without measurements of hydraulic conductivity for all sites designated as granular or nongranular bedrock.

(2) Groundwater well receptor evaluation for granular and nongranular bedrock designations. All drinking and non-drinking water wells within 1,000 feet of the source must be identified and tested for chemicals of concern. All public water supply systems within one mile of the source must be identified and raw water tested for chemicals of concern. All area within 1,000 feet of the source is considered a potential receptor point of exposure.

(3) Target levels. The following target levels apply regardless of granular aquifer designation. If drinking water wells are within 1,000 feet of the source, the applicable target level is the groundwater ingestion pathway Tier 1 level for actual receptors. If non-drinking water wells are within 1,000 feet of the source, the applicable target level is the groundwater ingestion pathway Tier 1 level for potential receptors. For potential wells, the applicable target level is the groundwater ingestion pathway Tier 1 level for potential receptors.

(4) Sentry well. If the Tier 1 level for actual receptors is exceeded at sites designated as granular bedrock and the receptor has not yet been impacted, a monitoring well shall be placed between the source and an actual receptor, outside the defined plume and approximately 200 feet from the actual receptor. For alternative well placement, the certified groundwater professional must provide justification and obtain

department approval. This monitoring well is to be used for monitoring potential groundwater contamination of the receptor.

(5) High risk classification. A site where bedrock is encountered before groundwater shall be classified high risk for this pathway if any of the following conditions exist regardless of granular aquifer determination: The target level at any actual receptor is exceeded; drinking water well receptors are present within 1,000 feet and groundwater concentrations in any monitoring well exceed the groundwater ingestion Tier 1 level for actual receptors; non-drinking water wells are within 1,000 feet and groundwater concentrations in any monitoring well exceed the groundwater ingestion pathway Tier 1 level for potential receptors; or for sites designated nongranular bedrock, if groundwater concentrations for chemicals of concern from any public water system well within one mile of the source exceed 40 percent of the Tier 1 level for actual receptors, and groundwater concentrations in any monitoring well exceed the groundwater ingestion Tier 1 level for actual receptors. Corrective action shall be undertaken as provided in paragraph "k."

(6) Low risk classification. Sites without an actual receptor within 1,000 feet shall be classified as low risk for this pathway if no high risk conditions exist, and the Tier 1 level for potential receptors is exceeded. The site is subject to monitoring as provided in paragraph "l." If an actual receptor exists within 1,000 feet, a site designated as granular or nongranular bedrock shall be classified low risk for this pathway when soil contamination has been removed or remediated to below the soil leaching to groundwater Tier 1 levels, and all groundwater monitoring wells are non-detect or below the applicable target level for actual and potential receptors. A site may be reclassified to no action required for this pathway after all monitoring wells meet the exit monitoring criteria as specified in paragraph "l." (NOTE: Exit monitoring is required because groundwater monitoring wells are not located at the source or if they are, the data is highly unreliable given the nature of bedrock.) If actual receptors do not exist or have been properly plugged and concentrations exceed the Tier 1 level for potential receptors, institutional controls and notification to permitting authorities may be employed in accordance with 135.10(4) "i." The institutional control must prohibit use of groundwater for 1,000 feet.

h. Special procedures for the groundwater vapor to enclosed space pathway.

(1) Soil gas plume. Soil gas measurements must be taken regardless of granular aquifer determination and in accordance with Tier 2 guidance to determine a soil gas plume. Soil gas where practical should be measured at the soil-bedrock interface. At a minimum, soil gas must be measured at the suspected area of maximum contamination and near the three monitoring wells with the highest concentrations that exceed the Tier 1 level for the groundwater to enclosed space pathway. Where the plume has been defined, soil gas measurements should be taken near wells exceeding the Tier 1 level. Other soil gas measurements must be taken as needed to define the extent of contamination where soil gas measurements exceed the soil gas vapor target levels.

(2) The soil gas target levels are those defined in 135.10(7) "f."

(3) High risk classification. A site designated as granular or nongranular bedrock shall be classified high risk for this pathway if an actual confined space receptor exists within 50 feet of the soil gas plume based on the soil gas target level as defined in 135.10(6).

(4) Low risk classification. A site designated as granular or nongranular bedrock shall be classified as low risk for this pathway if the soil gas exceeds the vapor target level at any point and no actual confined space receptors exist within 50 feet of the soil gas contaminant plume.

i. Special procedure for the groundwater to water line pathway.

(1) Target level. The applicable target level is the Tier 1 level for the specific type of water line.

(2) High risk classification. A site designated as granular or nongranular bedrock shall be classified high risk for this pathway if the highest groundwater elevation is within three feet of the bottom of a water line as provided in subparagraph 135.10(8) "a"(1), risk classification cannot be determined as provided in rule 567—135.12(455B) due to limitations on placement of monitoring wells, and water lines exist within 200 feet of a monitoring well which exceeds the Tier 1 level.

j. Special procedures for the surface water pathway. Any surface water body within 200 feet of the source must be evaluated under the following for sites designated as granular or nongranular bedrock. The

provisions of 135.10(10) apply to the extent they are not inconsistent with the following, including the visual inspection requirements.

(1) Point of compliance. The monitoring well closest to the surface water body must be used as the point of compliance to evaluate impacts to designated use segments as described in subrule 135.10(10) and for general use segments that fail the visual inspection criteria of paragraph 135.10(10) "b." If the surface water criteria are exceeded for a designated use segment, an allowable discharge concentration must be calculated and met at the point of compliance. For general use segments failing the visual inspection criteria, the acutely toxic target level must be met at the point of compliance.

(2) High risk classification. A site designated as granular or nongranular bedrock shall be classified high risk for this pathway if the surface water body is within 200 feet of the source, risk classification cannot be determined as per 567—135.12(455B) due to limitations on placement of monitoring wells, and the monitoring well closest to the designated use segment exceeds the allowable discharge concentration. A general use segment failing the visual inspection criteria is high risk if, after the sheen is removed, the monitoring well closest to the general use segment exceeds the acutely toxic target level.

(3) Low risk classification. If the allowable discharge concentration is not exceeded at the point of compliance, the site shall be classified as low risk for this pathway and subject to monitoring under paragraph "l." The monitoring well closest to the receptor shall serve as the sentry well for monitoring purposes.

k. High risk corrective action response. Owners and operators have the option to conduct a Tier 3 assessment in accordance with 567—135.11(455B).

(1) Groundwater ingestion pathway. For high risk sites, where soil exceeds the soil leaching to groundwater Tier 1 level for actual receptors, soil excavation or other active remediation of soils must be conducted in accordance with department guidance to reduce soil concentrations to below the soil leaching Tier 1 level. Corrective action other than monitoring of groundwater is required at sites designated as nongranular bedrock if the actual receptor has been or is likely to be impacted. Corrective action other than monitoring of groundwater is required at sites designated as granular bedrock if the actual receptor has been impacted or the sentry well required by subparagraph 135.10(3) "g"(4) has been impacted above Tier 1 levels. Acceptable corrective action for impacted or vulnerable groundwater wells may include active remediation, technological controls, institutional controls, well plugging, relocation, and well reinstallation with construction measures sufficient to prevent contaminant infiltration to the well and to prevent formation of a preferential pathway.

(2) Groundwater ingestion pathway high risk monitoring. For high risk sites designated as nongranular or granular bedrock, if the soil concentrations do not exceed the soil leaching to groundwater Tier 1 levels or have been reduced to this level by corrective action, and corrective action of groundwater is not required as in subparagraph 135.10(3) "k"(1), these sites shall be subject to groundwater monitoring as provided in paragraph 135.10(3) "l." Corrective action other than monitoring of groundwater is required at sites designated as granular bedrock if groundwater concentrations exceed the applicable target level less than 200 feet from an actual receptor. Reevaluation of the potential for impact to actual receptors is required at sites designated as nongranular bedrock if concentrations from monitoring wells increase more than 20 percent of the previous samples.

(3) For water line pathways. For high risk sites, active remediation must be conducted to reduce concentrations below the applicable target levels, or water lines and gaskets must be replaced or relocated, including the use of institutional and technological controls. If lines are polybutylene, polyethylene, or asbestos-cement, the lines must be removed or relocated. All water lines that are replaced must be replaced with water line materials and gasket materials of appropriate construction in accordance with current department standards set forth in 567—Chapter 43 and with no less than nitrile or FKM gaskets or as otherwise approved by the department.

(4) Other pathways. For high risk sites other than groundwater ingestion and water lines, active remediation must be conducted to reduce concentrations below the applicable target levels including the use of institutional and technological controls.

l. Monitoring. For high and low risk sites, annual monitoring at a minimum is required as specified below, and potential receptor status for low risk sites must be confirmed. Annual monitoring may be used to meet the exit requirements for no action required classification in accordance with paragraph “m.”

(1) Groundwater in nongranular bedrock designations. All groundwater monitoring wells must be monitored at least annually.

(2) Groundwater in granular bedrock designations. The following monitoring wells must be monitored at least annually: a well with detected levels of contamination closest to the leading edge of the groundwater plume between the source and the receptor, and a sentry well with concentrations below the applicable target level consistent with subparagraph “g”(4) and paragraph “j.”

(3) Soil gas. For sites where the soil gas target level is exceeded, annual monitoring of soil gas is required at the suspected area of maximum contamination and between the soil gas plume and any actual receptors within 100 feet of the soil gas plume.

m. No action required classification. A site may be given a no action required classification after conducting a Tier 2 assessment as provided in this subrule if maximum soil concentrations do not exceed the Tier 1 levels for the soil leaching pathway, and if groundwater exit monitoring criteria and soil gas confirmation sampling are met as specified below.

(1) Groundwater in nongranular bedrock designations. Exit monitoring requires that samples from all groundwater monitoring wells must not exceed the applicable target levels for annual sampling for three consecutive years. If soil contamination above a Tier 1 level is not identified or if an overexcavation has successfully removed all soil contamination greater than a Tier 1 level and monitoring wells are installed in the source area, exit monitoring criteria are met when two consecutive samples collected at least six months apart from all monitoring wells show concentrations less than the lowest target level.

(2) Groundwater in granular bedrock designations. Exit monitoring must be met in two ways: A monitoring well between the source and the receptor must not exceed applicable target levels for three sampling events, and samples must be separated by at least six months; and the three most recent consecutive groundwater samples from a monitoring well between the source and the receptor with detected levels of contamination must show a steady or declining trend and meet the following criteria: The first of the three samples must be greater than detection limits, concentrations cannot increase more than 20 percent from the first of the three samples to the third sample; concentrations cannot increase more than 20 percent from the previous sample; and samples must be collected at least six months apart.

(3) Soil gas. Confirmation sampling for soil gas must be conducted as specified in 135.12(6) “c.”

n. After receiving a no action required classification, all monitoring wells must be properly plugged in accordance with 567—Chapters 39 and 49.

135.10(4) Groundwater ingestion pathway assessment.

a. Pathway completeness. Unless cleared at Tier 1, this pathway is complete and must be evaluated under any of the following conditions: (1) the first encountered groundwater is a protected groundwater source; or (2) there is a drinking water well or a non-drinking water well within the modeled groundwater plume or the actual plume as provided in 135.10(2) “j” and 135.10(2) “k.”

b. Receptor evaluation. All drinking and non-drinking water wells located within 100 feet of the largest actual plume (defined to the appropriate target level for the receptor type) must be tested, at a minimum, for chemicals of concern as part of the receptor evaluation. Actual plumes refer to groundwater plumes for all chemicals of concern. Untreated or raw water must be collected for analysis unless it is determined to be infeasible or impracticable.

All existing drinking water wells and non-drinking water wells within the modeled plume or the actual plume as provided in paragraph “a” must be evaluated as actual receptors. Potential receptors only exist if the groundwater is a protected groundwater source. Potential receptor points of exposure are those points within the modeled plume or actual plume that exceed the potential point of exposure target level. The point(s) of compliance for actual receptor(s) is the receptor. The point(s) of compliance for potential receptor(s) is the potential receptor point of exposure as provided in 135.10(2) “j” and 135.10(2) “k.”

c. Target levels. For drinking water wells, the target level at the point(s) of exposure is the Tier 1 level for actual receptors. For non-drinking water wells, the target level at the point(s) of exposure is the

Tier 1 levels for potential receptors. For potential receptors, the target level at the potential receptor point(s) of exposure is the Tier 1 level for potential receptors.

d. The soil leaching to groundwater pathway must be evaluated in accordance with 135.9(5) if this pathway is complete.

e. *Modeling.* At Tier 2, the groundwater well located within the modeled plume is assumed to be drawing from the contaminated aquifer, and the groundwater transport model is designed to predict horizontal movement to the well. If the groundwater professional determines that assessment of the vertical movement of contamination is advisable to determine the potential or actual impact to the well source, a Tier 3 assessment of this vertical pathway may be conducted. The groundwater professional shall submit a work plan to the department specifying the assessment methods and objectives for approval in accordance with 567—135.11(455B). Factors which should be addressed include, but are not limited to, well depth and construction, radius of influence, hydrogeologic separation of aquifer, preferential pathways, and differing water quality characteristics.

f. *Public water supply well assessment.* Rescinded IAB 3/11/09, effective 4/15/09.

g. *Plume definition.* The groundwater plume shall be defined to the applicable Tier 1 level for actual receptors except, where there are no actual receptors and the groundwater is a protected groundwater source, the plume shall be defined to the Tier 1 level for potential receptors.

h. *Pathway classification.* This pathway shall be classified as high risk, low risk or no action required in accordance with 567—135.12(455B).

i. *Corrective action response.* Corrective action must be conducted in accordance with 567—135.12(455B). Abandonment and plugging of wells in accordance with 567—Chapters 39 and 49 is an acceptable corrective action response.

j. *Use of institutional controls.* Institutional controls may be used to obtain no action required pathway classification. If the pathway is complete and the concentrations exceed the applicable Tier 1 level(s) for actual receptors, the drinking or non-drinking water well must be properly plugged in accordance with 567—Chapters 39 and 49 and the institutional control must prohibit the use of a protected groundwater source (if one exists) within the actual or modeled plume as provided in paragraphs 135.10(2) “j” and 135.10(2) “k.” If the Tier 1 level is exceeded for potential receptors, the institutional control must prohibit the use of a protected groundwater source within the actual or modeled plume, whichever is greater. If concentrations exceed the Tier 1 level for drinking water wells and the groundwater is a protected groundwater source, the owner or operator must provide notification of the site conditions on a department form to the department water supply section, or if a county has delegated authority, then the designated county authority responsible for issuing private water supply construction permits or regulating non-public water well construction as provided in 567—Chapters 38 and 49.

k. *Notification of well owners.* Upon receipt of a Tier 2 site cleanup report and as soon as practicable, the department shall notify the owner of any public water supply well identified within the Tier 2 site cleanup report that a leaking underground storage tank site is within 2,500 feet and an assessment has been performed.

135.10(5) Soil leaching to groundwater pathway assessment.

a. *General.* The soil leaching to groundwater pathway is evaluated using a one-dimensional model which predicts vertical movement of contamination through soil to groundwater and transported by the groundwater to a receptor. The model is used to predict the maximum concentrations of chemicals of concern that would be present in groundwater beneath a source which is representative of residual soil contamination and maximum soil concentrations. The predicted groundwater concentrations then must be used as a groundwater source concentration to evaluate its impact on other groundwater transport pathways, including the groundwater ingestion pathway, the groundwater vapor pathway, the groundwater water line pathway and the surface water pathway.

b. *Pathway completeness.* This pathway is complete whenever a groundwater transport pathway is complete as provided in this rule.

c. *Plume definition.* The soil plume shall be defined to the Tier 1 levels for the soil leaching to groundwater pathway.

d. Receptor evaluation. Receptors for this pathway are the same as the receptors for each complete groundwater transport pathway.

e. Modeling and target levels. The soil and groundwater parameters shall be measured as provided in 135.10(2).

The soil leaching to groundwater model shall be used to calculate the predicted groundwater source concentration. Each applicable groundwater transport pathway model shall then be used in accordance with the rules for that pathway to predict potential impact to actual receptors, the location of potential receptor points of exposure and the site-specific target level (SSTL) in groundwater at the source. This SSTL then is used to calculate a SSTL for soil at the source. If the soil concentrations exceed the SSTL for soil, corrective action response shall be evaluated.

f. Corrective action response. If the maximum soil concentration at the source exceeds the SSTL for soil for actual or potential receptors, corrective action must be taken in accordance with 567—135.12(455B).

135.10(6) Groundwater vapor to enclosed space pathway assessment.

a. Pathway completeness. Unless cleared at Tier 1, this pathway is always considered complete for purposes of Tier 2.

b. Explosive vapor survey. If an explosive vapor survey has not been conducted as part of a Tier 1 assessment, an explosive vapor survey of enclosed spaces must be conducted during the Tier 2 assessment in accordance with 135.9(6) “b” and procedures outlined in the department’s Tier 1 guidance.

c. Confined space receptor evaluation. Actual and potential receptors are evaluated at Tier 2 for this pathway.

(1) Actual receptors. An existing confined space within the modeled groundwater plume or the actual groundwater plume as provided in 135.10(2) “j” and 135.10(2) “k” is an actual receptor. For the purpose of Tier 2, a confined space is a basement in a building occupied by humans. Buildings constructed with a concrete slab on grade or buildings constructed without a concrete slab, but with a crawl space are not considered confined spaces. Sanitary sewers are considered confined space receptors and preferential pathways if an occupied building exists within 200 feet of where the sewer line crosses over or through actual or modeled groundwater contamination which exceeds the target levels calculated for sewers. The sanitary sewer includes its utility envelope. The point of exposure is the receptor and points of compliance include the locations where target level measurements may be taken as provided in paragraphs “f” and “g.”

(2) Potential receptors. Potential receptors are confined spaces that do not presently exist but could exist in the future. Areas within the actual groundwater plume perimeter or modeled groundwater plume perimeter are considered potential receptor points of exposure. Potential receptors are evaluated and target levels established based on the current zoning as provided in paragraph “f.” The potential receptor point of exposure is a point of compliance.

d. Owners and operators may be required to address vapor inhalation hazards in occupied spaces other than confined spaces as defined in these rules when evidence arises which would give the department a reasonable basis to believe vapor hazards are present or may occur.

e. Plume definition.

(1) The soil plume must be defined in accordance with 135.10(2) “f” for the purposes of estimating source width and source length used in soil leaching to groundwater and groundwater transport models.

(2) The groundwater plume must be defined to the target levels derived from site-specific data as provided in paragraph “f.”

f. Target levels. Target levels can be based on groundwater concentrations, soil gas measurements, and indoor vapor measurements as provided below.

(1) For actual receptors and potential receptors, groundwater modeling as provided in 135.10(2) is used to calculate the groundwater concentration target level at the point of exposure. Default residential exposure factors, default residential building parameters, and a target risk of 10^{-4} are used to determine target levels for actual receptors and potential receptor points of exposure in residential areas and areas with no zoning. Default nonresidential exposure factors, default nonresidential building parameters, and a

target risk of 10^{-4} are used to determine target levels for actual receptors and potential receptor points of exposure in nonresidential areas. Default values are provided in Appendices A and B.

(2) For actual receptors, the indoor vapor target levels are designated in 135.10(7) “f.” For actual and potential receptors, the soil gas target levels are designated in 135.10(7) “f.”

(3) Sanitary sewers are treated as human health receptors, and groundwater concentration target levels at the point of exposure are based on the application of a target risk of 2×10^{-4} for carcinogens and a hazard quotient of 2 for noncarcinogens.

g. *Pathway evaluation and classification.* Upon completion of evaluation of analytical results of appropriate samples and modeled data, the pathway must be classified high risk, low risk or no further action as provided in rule 567—135.12(455B).

(1) Actual receptors. If it can be demonstrated that the groundwater plume has reached steady state concentrations under a confined space, indoor vapor measurements at the point(s) of exposure and soil gas measurements at an alternative point(s) of compliance may be used for the pathway evaluation. When assessing sanitary sewers for pathway clearance, soil gas measurements may be evaluated against the soil gas target levels; however, indoor vapor cannot be used as criteria for pathway clearance. Soil gas measurements shall be taken and analyzed in accordance with 135.16(5) and the department’s Tier 2 guidance, and at locations in the plume where measured groundwater concentrations exceed the levels which are projected by modeling to exist beneath the actual receptor. If measured groundwater concentrations beneath the actual receptor exceed the levels projected from modeling, then the soil gas measurements may be taken either adjacent to the actual receptor in areas expected to exhibit the greatest soil gas measurements or at an alternative point of compliance between the source and receptor where the actual groundwater concentrations exceed the groundwater concentrations which exist beneath the confined space. If the soil gas measurements and confirmation samples taken in accordance with 135.12(6) “c” do not exceed the soil gas target levels, the pathway as to actual receptors shall be classified no action required. If the soil gas target levels are exceeded, either the pathway shall be classified high risk, or indoor vapor measurements may be taken in accordance with the department’s Tier 2 guidance. If indoor vapor measurements and confirmation samples do not exceed the indoor vapor target levels, the pathway as to actual confined space receptors shall be classified no action required. If the Tier 1 indoor vapor target levels are exceeded, the pathway shall be classified high risk.

(2) Potential receptors. If the potential receptor groundwater concentration target level(s) is exceeded at any potential receptor point of exposure based on actual data or modeling, the pathway shall be classified low risk. However, if soil gas measurements taken at the potential receptor point(s) of exposure and alternate point(s) of compliance and confirmation samples do not exceed the target levels in 135.10(7) “f,” the pathway, as to potential receptors, shall be classified no action required. If the target level(s) for potential sanitary sewer receptors is exceeded, the pathway shall be classified as low risk. Where the area of potential receptor exposure includes public right-of-way, the pathway may be classified as no action required if the owner or operator provides sufficient documentation to establish that there are no foreseeable plans for construction of sanitary sewers through the area of potential receptor exposure. The municipal authority must acknowledge consent to the no action required classification whenever target levels are exceeded. If the municipal authority reports that it has confirmed plans for construction of sanitary sewers through the area of potential receptor exposure, the pathway shall be reevaluated as an actual receptor.

h. *Corrective action response.* Unless the pathway is classified as no action required, corrective action for this pathway must be conducted as provided in 567—135.12(455B). Actual receptors are subject to corrective actions which: (1) reduce groundwater concentrations beneath the enclosed space to below the target level; (2) reduce the measured soil gas levels to below the soil gas target levels; (3) reduce the indoor vapor concentrations to below the indoor vapor target level; or (4) reduce the vapor level to below 10 percent of the lower explosive limit (LEL), if applicable. Potential receptors are subject to the monitoring requirements in 135.12(5). Soil vapor monitoring may be conducted in lieu of groundwater monitoring for this pathway. Institutional or technological controls as provided in 567—135.12(455B) may be used.

i. *Municipal authority notification for potential sewer receptors.* The municipal authority responsible for sewer construction must be notified of the environmental conditions whenever target level(s) is

exceeded for potential sanitary sewers. The notification must show the area where groundwater concentrations and soil gas samples exceed target levels. The owner or operator must acknowledge what plans, if any, exist for construction of sanitary sewers through the area of potential receptor exposure.

135.10(7) Soil vapor to enclosed space pathway assessment.

a. Pathway completeness. Unless cleared at Tier 1, this pathway is always considered complete for purposes of Tier 2.

b. Explosive vapor survey. If an explosive vapor survey has not been conducted as part of a Tier 1 assessment, an explosive vapor survey of enclosed spaces must be conducted during the Tier 2 assessment in accordance with 135.9(6) “b” and procedures outlined in the department’s Tier 1 guidance.

c. Confined space receptor evaluation. Actual and potential receptors are evaluated at Tier 2 for this pathway.

(1) Actual receptors. An existing confined space within 50 feet of the edge of the plume is an actual receptor. For the purpose of Tier 2, a confined space is a basement in a building occupied by humans. Buildings constructed with a concrete slab on grade or buildings constructed without a concrete slab, but with a crawl space are not considered receptors. Sanitary sewers are considered confined space receptors and preferential pathways if an occupied building exists within 200 feet of where the sewer line crosses over or through soil contamination which exceeds the target levels calculated for sewers. The sanitary sewer includes its utility envelope. The point of exposure is the receptor and points of compliance include the locations where target level measurements may be taken as provided in paragraphs “f” and “g.”

(2) Potential receptors. Potential receptors are confined spaces that do not presently exist but could exist in the future. Areas where soil concentrations are greater than the Tier 1 level applicable to residential areas or alternative target levels for nonresidential areas as specified in paragraph “f” are considered potential receptor points of exposure. Potential receptors are evaluated and target levels established based on the current zoning. An area with no zoning is considered residential. The potential receptor point of exposure is a point of compliance.

d. Owners and operators may be required to address vapor inhalation hazards in occupied spaces other than confined spaces as defined in these rules when evidence arises which would give the department a reasonable basis to believe vapor hazards are present or may occur.

e. Plume definition. The soil plume must be defined to the Tier 1 level for this pathway unless vapor measurements taken at the area(s) with the maximum levels of soil contamination do not exceed the soil gas target level in 135.10(7) “f.” If soil gas measurements taken from the area(s) of maximum soil concentration do not exceed target levels, confirmation sampling must be conducted in accordance with 135.12(6) “c” prior to proposing a no action pathway classification.

f. Target levels. Target levels can be based on soil concentrations, soil gas measurements, and indoor vapor measurements as provided below:

(1) For actual receptors, the soil concentration target level is the Tier 1 level. For potential receptors, the soil concentration target level for residential areas and areas with no zoning is the Tier 1 level. For areas zoned nonresidential, the target level is calculated using the default nonresidential exposure factors and building parameters from Appendix A and a target risk of 10^{-4} .

(2) The following indoor vapor target levels apply to actual receptors other than sanitary sewers and the soil gas target levels apply to all actual and potential receptors. These levels were derived from the ASTM indoor air inhalation and the soil vapor to enclosed space models designated in Appendix A.

	Indoor Vapor ($\mu\text{g}/\text{m}^3_{\text{air}}$)	Soil Gas ($\mu\text{g}/\text{m}^3$)
Benzene	39.2	600,000
Toluene	555	9,250,000

(3) Sanitary sewers are treated as human health receptors, and soil concentration target levels at the point of exposure are based on application of a target risk of 2×10^{-4} for carcinogens and hazard quotient of 2 for noncarcinogens.

g. Pathway evaluation and classification.

(1) Actual receptors. Confined space receptors may be evaluated using soil gas measurements and indoor vapor measurements. When assessing sanitary sewers for pathway clearance, soil gas measurements

may be evaluated against the soil gas target levels, however, indoor vapor cannot be used as criteria for pathway clearance. Soil gas measurements shall be taken adjacent to the actual receptor or at an alternative point of compliance between the source and receptor such as the property boundary, and in accordance with 135.16(5) and the department's Tier 2 guidance. If the soil gas measurements and confirmation samples taken in accordance with 135.12(6) "c" do not exceed the soil gas target levels, the pathway as to actual receptors shall be classified no action required. If the soil gas target levels are exceeded, either the pathway shall be classified high risk, or indoor vapor measurements may be taken in accordance with the department's Tier 2 guidance. If indoor vapor measurements and confirmation samples do not exceed the indoor vapor target levels, the pathway as to actual receptors shall be classified no action required. If the indoor vapor target levels are exceeded, the pathway shall be classified high risk.

(2) Potential receptors. If the potential receptor target level(s) based on soil concentrations is exceeded at any potential receptor point of exposure, the pathway shall be classified low risk. However, if soil gas measurements taken at the potential receptor point(s) of exposure and alternate point(s) of compliance and confirmation samples do not exceed the target levels in paragraph "f," the pathway shall be classified no action required as to potential receptors. If the target level(s) for potential sanitary sewer receptors is exceeded, the pathway shall be classified as low risk. Where the area of potential receptor exposure includes public right-of-way, the pathway may be classified as no action required if the owner or operator provides sufficient documentation to establish that there are no foreseeable plans for construction of sanitary sewers through the area of potential receptor exposure. The municipal authority must acknowledge consent to the no action required classification whenever target levels are exceeded. If the municipal authority reports that it has confirmed plans for construction of sanitary sewers through the area of potential receptor exposure, the pathway shall be reevaluated as an actual receptor.

h. Corrective action response. Unless the pathway is classified as no action required, corrective action for this pathway must be conducted as provided in 567—135.12(455B) and in accordance with department Tier 2 guidance. Actual receptors are subject to corrective actions which: (1) reduce the indoor vapor concentrations to below the target level; (2) reduce measured soil gas levels to below the soil gas target levels; and (3) if applicable, reduce the vapor level to below 10 percent of the lower explosive limit (LEL). Potential receptors are subject to monitoring requirements as provided in 135.12(5). Soil vapor monitoring may be conducted in lieu of soil monitoring for this pathway. Institutional or technological controls as provided in 567—135.12(455B) may be used.

i. Municipal authority notification for potential sewer receptors. The municipal authority responsible for sewer construction must be notified of the environmental conditions whenever target level(s) is exceeded for potential sanitary sewers. The notification must show the area where soil concentrations and soil gas samples exceed target levels. The owner or operator must acknowledge what plans, if any, exist for construction of sanitary sewers through the area of potential receptor exposure.

135.10(8) *Groundwater to water line pathway assessment.*

a. Pathway completeness and receptor evaluation.

(1) Actual receptors include all water lines where the highest groundwater elevation is higher than three feet below the bottom of the water line at the measured or predicted points of exposure. The highest groundwater elevation is the estimated average of the highest measured groundwater elevations for each year. All water lines must be evaluated for this pathway regardless of distance from the source and regardless of the Tier 1 evaluation, if the lines are in areas with actual data above the applicable Tier 1 level and modeled data above the SSTL line. If actual data exceeds modeled data, then all water lines are considered actual receptors if they are within a distance extending 10 percent beyond the edge of the contaminant plume defined by the actual data.

(2) Potential receptors include all areas where the first encountered groundwater is less than 20 feet deep and where actual data or modeled data are above Tier 1 levels.

(3) The point(s) of exposure is the water line, and the points of compliance are monitoring wells between the source and the water line which would be effective in monitoring whether the line has been or may be impacted by chemicals of concern.

b. Plume definition. If this pathway is complete for an actual receptor, the groundwater plume must be defined to the Tier 1 levels, with an emphasis between the source and any actual water lines. The water inside the water lines shall be analyzed for all chemicals of concern.

c. Target levels. Groundwater modeling as provided in 135.10(2) must be used to calculate the projected concentrations of chemicals of concern and site-specific target levels. The soil leaching to groundwater pathway must be evaluated to ensure contaminated soil will not cause future groundwater concentrations to exceed site-specific target levels. The target level at the point(s) of exposure is the Tier 1 level.

d. Pathway evaluation and classification. Upon completion of evaluation of analytical results of appropriate samples and modeled data, the pathway must be classified high risk, low risk or no further action as provided in rule 567—135.12(455B). The water quality inside the water lines is not a criterion for clearance of this pathway.

e. Utility company notification. The utility company which supplies water service to the area must be notified of all actual and potential water line impacts as soon as knowledge of a potential risk is determined. If the extent of contamination has been defined, this information must be included in utility company notification, and any previous notification made at Tier 1 must be amended to include this information.

f. Corrective action response.

(1) For actual receptors, unless the pathway is classified as no further action, corrective action for this pathway must be conducted as provided in 567—135.12(455B). If the concentrations of chemicals of concern in a water line exceed the Tier 1 levels for actual receptors for the groundwater ingestion pathway, immediate corrective action must be conducted to eliminate exposure to the water, including but not limited to replacement of the line with an approved material.

(2) For potential receptors, upon utility company notification, no further action will be required for this pathway for potential receptors.

135.10(9) Soil to water line pathway assessment.

a. Pathway completeness and receptor evaluation.

(1) Actual receptors include all water lines within ten feet of the soil plume defined to the Tier 1 level. All water lines must be evaluated for this pathway regardless of distance from the source if the lines are in areas where Tier 1 levels are exceeded.

(2) Potential receptors include all areas where Tier 1 levels are exceeded.

b. Plume definition. The extent of soil contamination must be defined to Tier 1 levels for the chemicals of concern.

c. Target level. The point(s) of exposure includes all areas within ten feet of the water line. The target level at the point(s) of exposure is the Tier 1 level.

d. Pathway classification. Upon completion of evaluation of analytical results of appropriate samples, the pathway must be classified high risk, low risk or no further action as provided in rule 567—135.12(455B). Measurements of water quality inside the water lines may be required, but are not allowed as criteria to clear this pathway.

e. Utility company notification. The utility company which supplies water service to the area must be notified of all actual and potential water line impacts as soon as knowledge of the potential risk is determined. If the extent of contamination has been defined, this information must be included in utility company notification, and any previous notification made at Tier 1 must be amended to include this information.

f. Corrective action response.

(1) For actual receptors, unless the pathway is classified as no further action, corrective action for this pathway must be conducted as provided in 567—135.12(455B).

(2) For potential receptors, upon utility company notification, no further action will be required for this pathway for potential receptors.

135.10(10) Surface water pathway assessment.

a. Pathway completeness. Unless maximum concentrations are less than the applicable Tier 1 levels, this pathway is complete and must be evaluated under any of the following conditions: (1) there is a

designated use surface water within the modeled groundwater plume or the actual plume as provided in 135.10(2) “f” and 135.10(2) “g”; or (2) any surface water body which failed the Tier 1 visual inspection as provided in 135.9(10).

b. Visual inspection. A visual inspection must be conducted according to 135.9(10) “c.” If a sheen or residue from a petroleum-regulated substance is present, soil and groundwater sampling must be conducted to identify the source of the release and to define the extent of the contaminant plume to the levels acutely toxic to aquatic life as provided in 567—subrule 61.3(2).

c. Receptor evaluation.

(1) Surface water criteria apply only to designated use segments of surface water bodies as provided in 567—subrules 61.3(1) and 61.3(5). If the surface water body is a designated use segment and if maximum groundwater concentrations exceed applicable surface water criteria, the extent of contamination must be defined as provided in paragraph “d.” The point of compliance for measuring chemicals of concern at the point of exposure is the groundwater adjacent to the surface water body because surface water must be protected for low flow conditions. In-stream measurements of concentrations are not allowed as a basis for no further action.

(2) If the visual inspection indicates the presence of a petroleum sheen in a general use segment within 200 feet of the source, as defined in 567—paragraph 61.3(1) “a,” the segment must be evaluated as an actual receptor. The point of compliance for measuring chemicals of concern at the point of exposure is the groundwater adjacent to the general use segment.

d. Plume definition. The groundwater plume must be defined to the surface water criteria levels for designated use segment receptors and to the acutely toxic levels for general use segment receptors, with an emphasis between the source and the surface water body.

e. Target levels. Determining target levels for this pathway involves a two-step process.

(1) Groundwater modeling as provided in subrule 135.10(2) must be used to calculate the projected concentrations of chemicals of concern at the point of compliance. If the modeled concentrations or field data at the point of compliance exceed surface water criteria for designated use segments, an allowable discharge concentration must be calculated. If the projected concentrations and actual concentrations at the point of compliance do not exceed surface water criteria, no further action is required to assess this pathway.

(2) The department water quality section will calculate the allowable discharge concentration using information provided by the certified groundwater professional on a department form. Required information includes, at a minimum, the site location and a discharge flow rate calculated according to the department’s Tier 2 guidance. The allowable discharge concentration is the target level which must be met adjacent to the surface water body which is the point of compliance.

(3) The target level at the point of exposure/compliance for general use segments subject to evaluation is the acutely toxic levels established by the department under 567—Chapter 61 and 567—subrule 62.8(2). If the modeled concentrations of contaminant concentrations at the point of exposure/compliance exceed the acutely toxic levels, modeling must be used to determine site classifications and corrective action in accordance with rule 567—135.12(455B).

f. Pathway evaluation and classification. Upon completion of evaluation of analytical results of appropriate samples and modeled data, the pathway must be classified high risk, low risk or no further action as provided in rule 567—135.12(455B).

(1) For general use segments, as defined in 567—subrule 61.3(1), if the groundwater professional determines there is no sheen or residue present or if the site is not the source of the sheen or residue or if the sheen does not consist of petroleum-regulated substances, no further action is required for assessment of this pathway. If a petroleum-regulated substance sheen is present, the pathway is high risk and subject to classification in accordance with rule 567—135.12(455B).

(2) For designated use segments, as provided in 567—subrules 61.3(1) and 61.3(5), if projected concentrations of chemicals of concern and actual contaminant concentrations at the point of compliance do not exceed the target level adjacent to the surface water, and the groundwater professional determines there is no sheen or residue present, no further action is required for assessment of this pathway.

g. Corrective action response. Unless the pathway is classified as no further action, corrective action for this pathway must be conducted as provided in 567—135.12(455B). For surface water bodies failing the visual inspection criteria, corrective action must eliminate the sheen and reduce concentrations to below the site specific target level in accordance with 567—135.12(455B).

135.10(11) *Tier 2 submission and review procedures.*

a. Owners and operators must submit a Tier 2 site cleanup report within 180 days of the date the department approves or is deemed to approve a Tier 1 assessment report under 135.9(12). If the owner or operator has elected to conduct a Tier 2 assessment instead of a Tier 1, or a Tier 2 assessment is required due to the presence of free product under 135.7(5), the Tier 2 site cleanup report must be submitted within 180 days of the date the release was confirmed. The department may establish an alternative schedule for submittal.

b. Site cleanup report completeness and accuracy. A Tier 2 site cleanup report is considered to be complete if it contains all the information and data required by this rule and the department's Tier 2 guidance. The report is considered accurate if the information and data are reasonably reliable based first on the standards in these rules and department guidance, and second, on generally accepted industry standards.

c. The certified groundwater professional responsible for completion of the Tier 2 site assessment and preparation of the report must accompany each Tier 2 site cleanup report with a certification as set out below:

I, _____, groundwater professional certification number _____, am familiar with all applicable requirements of Iowa Code section 455B.474 and all rules and procedures adopted thereunder including, but not limited to, the Department of Natural Resources' Tier 2 guidance. Based on my knowledge of those documents and the information I have prepared and reviewed regarding this site, UST registration number _____, LUST No. _____, I certify that this document is complete and accurate as provided in 135.10(11) and meets the applicable requirements of the Tier 2 site cleanup report.

Signature

Date

d. Upon receipt of the groundwater professional's certified Tier 2 report, the groundwater professional's proposed site classification for the site shall be determinative unless, within 90 days of receipt, the department identifies material information in the report that is inaccurate or incomplete. Material information may be data found to be inaccurate or incomplete or a report that lacks information which, if accurate and complete, would result in a different site or pathway classification than proposed by the certified groundwater professional. If the department determines that the site cleanup report is inaccurate or incomplete, the department shall notify the groundwater professional of the inaccurate or incomplete information within 90 days of receipt of the report and shall work with the groundwater professional and the party responsible for cleanup to obtain correct information or additional information necessary to appropriately classify the site. If the groundwater professional recommends proceeding to Tier 3, the groundwater professional's site classification and any pathway classification recommendations subject to or influenced by a Tier 3 assessment shall not be considered determinative until the Tier 3 report is submitted for review as provided in 567—135.11(455B).

e. If a "no action required" site classification is proposed, the department shall review the report in accordance with 135.12(6) and the review standards in paragraph 135.10(11) "d."

f. The department may, in the interest of minimizing environmental or public health risks and promoting a more effective cleanup, require owners and operators to begin cleanup of soil and groundwater before the Tier 2 site cleanup report is approved.

g. Review of the public water supply receptor risk assessment. Rescinded IAB 3/11/09, effective 4/15/09.

[ARC 7621B, IAB 3/11/09, effective 4/15/09; ARC 9011B, IAB 8/25/10, effective 9/29/10; ARC 9331B, IAB 1/12/11, effective 2/16/11; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.11(455B) Tier 3 site assessment policy and procedure.

135.11(1) General. Tier 3 site assessment. Unless specifically limited by rule or an imminent hazard exists, an owner or operator may choose to prepare a Tier 3 site assessment as an alternative to completion of a Tier 2 assessment under 567—135.10(455B) or as an alternative to completion of a corrective action design report under 567—135.12(455B). Prior to conducting a Tier 3 site assessment, a groundwater professional must submit a work plan to the department for approval. The work plan must contain an evaluation of the specific site conditions which justify the use of a Tier 3 assessment, an outline of the proposed Tier 3 assessment procedures and reporting format and a method for determining a risk classification consistent with the policies underlying the risk classification system in 567—135.12(455B). Upon approval, the groundwater professional may implement the assessment plan and submit a report within a reasonable time designated by the department.

135.11(2) Tier 3 site assessment. A Tier 3 assessment may include but is not limited to the use of more site-specific or multidimensional models and assessment data, methods for calibrating Tier 2 models to make them more predictive of actual site conditions, and more extensive assessment of receptor construction and vulnerability to contaminant impacts. If use of Tier 2 models is proposed with substitution of other site-specific data (as opposed to the Tier 2 default parameters), the groundwater professional must adequately justify how site-specific data is to be measured and why it is necessary. The groundwater professional must demonstrate that the proposal has a proven applicability to underground storage tank sites or similar conditions or has a strong theoretical basis for applicability and is not biased toward underestimating assessment results. The Tier 3 assessment report shall make a recommendation for site classification as high risk, low risk or no action required, at least two corrective action response technologies and provide justification consistent with the standards and policies underlying risk classification and corrective action response under 567—135.12(455B) and Iowa Code chapter 455B, Division 4, Part 8.

135.11(3) Review and submittal. The department will review the Tier 3 assessment for compliance with the terms of the approved work plan and based on principles consistent with these rules and Iowa Code chapter 455B, Division IV, Part 8. Upon approval of the Tier 3 assessment, the department may require corrective action in accordance with 567—135.12(455B).

567—135.12(455B) Tier 2 and 3 site classification and corrective action response.

135.12(1) General. 1995 Iowa Code section 455B.474(1) “d”(2) provides that sites shall be classified as high risk, low risk and no action required. Risk classification is accomplished by comparing actual contaminate concentrations to the concentrations that are predicted by the use of models. Concentrations must be compared to the simulation model which uses the maximum concentrations at a source and predicts at what levels actual or potential receptors could be impacted in the future. Concentrations must also be compared to the site-specific target level line which assumes a target level concentration at the point of exposure and is used to predict the reduction in concentration that must be achieved at the source in order to meet the applicable target level at the point of exposure. These models not only predict concentrations at points of exposure or a point of compliance at a source but also predict a distribution of concentrations between the source and the point of exposure which may also be points of compliance. The comparison of contaminate concentrations with these distribution curves primarily is considered for purposes of judging whether the modeled data is reasonably predictive and what measures such as monitoring are prudent to determine the reliability of modeled data and actual contaminate concentrations.

For the soil vapor to enclosed space and soil to water line pathways, there are no horizontal transport models to use for predicting future impacts. Therefore, for these pathways, sites are classified as high risk, low risk or no action required based on specified criteria below and in rule 567—135.10(455B).

135.12(2) High risk classification. Except as provided below, sites shall be classified as high risk if, for any pathway, any actual contaminate concentrations exceed the site-specific target level line at any point for an actual receptor.

a. For the soil vapor to enclosed space and soil to water line pathways, sites shall be classified as high risk if the target levels for actual receptors are exceeded as provided in 135.10(7) and 135.10(9).

b. For the soil vapor or groundwater vapor to enclosed space pathways, sites shall be classified as high risk if the explosivity levels at applicable points of compliance are exceeded as provided in 135.10(6) and 135.10(7).

c. Generally, sites are classified as low risk if only potential receptor points of compliance are exceeded. The following is an exception. For the soil leaching to groundwater ingestion pathway for potential receptor conditions, the site shall be classified as high risk if the groundwater concentration(s) exceeds the groundwater Tier 1 level for potential receptor and the soil concentration exceeds the soil leaching site-specific target level at the source.

135.12(3) *High risk corrective action response.*

a. Objectives. The primary objectives of corrective action in response to a high risk classification are both short-term and long-term. The short-term goal is to eliminate or reduce the risk of exposure at actual receptors which have been or are imminently threatened with exposure above target levels. The longer term goal is to prevent exposure to actual receptors which are not currently impacted or are not imminently threatened with exposure. To achieve these objectives, it is the intent of these rules that concentrations of applicable chemicals of concern be reduced by active remediation to levels below the site-specific target level line at all points between the source(s) and the point(s) of exposure as well as to undertake such interim corrective action as necessary to eliminate or prevent exposure until concentrations below the SSTL line are achieved. If it is shown that concentrations at all applicable points have been reduced to below the SSTL line, the secondary objective is to establish that the actual chemical concentrations can be reasonably relied upon to predict future conditions at points of exposure rather than reliance on the modeled data. Reliance on actual contaminant concentrations is achieved by establishing through monitoring that concentrations within the contaminant plume are steady or declining. Institutional controls and technological controls may be used to sever pathways or control the risk of receptor impacts.

b. For the groundwater to water line and soil to water line receptors, these objectives are achieved by active remediation, replacement or relocation of high risk water line receptors in the actual and modeled plume areas. If water lines and gaskets are replaced in an area of contamination, they must be replaced with water line materials and gasket materials of appropriate construction in accordance with current department standards set forth in 567—Chapter 43 and with no less than nitrile or FKM gaskets or as otherwise approved by the department.

c. In areas of free product, all water lines, regardless of construction material, must be relocated unless there is no other option and the department has approved an alternate plan of construction. Refer to subparagraph 135.7(5) “d” (11). If a service line remains in the area of LNAPL, a backflow preventer shall be installed to prevent impacts to the larger water distribution system.

d. For the soil vapor pathway, these objectives are achieved by active remediation of soil contamination below the target level at the point(s) of exposure or other designated point(s) of compliance using the same measurement methods for receptor evaluation under 135.10(7) and 135.10(9).

e. For a site classified as high risk or reclassified as high risk for the soil leaching to groundwater ingestion pathway, these objectives are achieved by active remediation of soil contamination to reduce the soil concentration to below the site-specific target level at the source.

f. A corrective action design report (CADR) must be submitted by a certified groundwater professional for all high risk sites unless the terms of a corrective action plan are formalized in a memorandum of agreement within a reasonable time frame specified by the department. The CADR must be submitted on a form provided by the department and in accordance with department CADR guidance within 60 days of site classification approval as provided in 135.10(11). The CADR must identify at least two principally applicable corrective action options designed to meet the objectives in 135.12(3), an outline of the projected timetable and critical performance benchmarks, and a specific monitoring proposal designed to verify its effectiveness and must provide sufficient supporting documentation consistent with industry standards that the technology is effective to accomplish site-specific objectives. The CADR must contain an analysis of its cost-effectiveness in relation to other options. The department will review the CADR in accordance with 135.12(9).

g. *Interim monitoring.* From the time a Tier 2 site cleanup report is submitted and until the department determines a site is classified as no action required, interim monitoring is required at least

annually for all sites classified as high risk. Groundwater samples must be taken: (1) from a monitoring well at the maximum source concentration; (2) from a transition well, meaning a monitoring well with detected levels of contamination closest to the leading edge of the groundwater plume as defined to the pathway-specific target level, and between the source(s) and the point(s) of exposure; and (3) from a guard well, meaning a monitoring well between the source(s) and the point(s) of exposure with concentrations below the SSTL line. If a receptor is located within an actual plume contoured to the applicable target level for that receptor, the point of exposure must be monitored. If concentrations at the receptor already exceed the applicable target level for that receptor, corrective actions must be implemented as soon as practicable. Monitoring conducted as part of remediation or as a condition of establishing a no action required classification may be used to the extent it meets these criteria. Soil monitoring is required at least annually for all applicable pathways in accordance with 135.12(5)“d.” All drinking water wells and non-drinking water wells within 100 feet of the largest actual plume (defined to the appropriate target level for the receptor type) must be tested annually for chemicals of concern. Actual plumes refer to groundwater plumes for all chemicals of concern.

h. Remediation monitoring. Remediation monitoring during operation of a remediation system is required at least four times each year to evaluate effectiveness of the system. A remediation monitoring schedule and plan must be specified in the corrective action design report and approved by the department.

i. Technological controls. The purpose of a technological control is to effectively sever a pathway by use of technologies such that an applicable receptor could not be exposed to chemicals of concern above an applicable target risk level. Technological controls are an acceptable corrective action response either alone or in combination with other remediation systems. The purpose of technological controls may be to control plume migration through use of containment technologies, barriers, etc., both as an interim or permanent corrective action response or to permanently sever a pathway to a receptor. Controls may also be appropriate to treat or control contamination at the point of exposure. Any technological control proposed as a permanent corrective action option without meeting the reduction in contaminant concentrations objectives must establish that the pathway to a receptor will be permanently severed or controlled. The effectiveness of a technological control must be monitored under a department approved plan until concentrations fall below the site-specific target level line or its effectiveness as a permanent response is established, and no adverse effects are created.

j. Following completion of corrective action, the site must meet exit monitoring criteria to be reclassified as no action required as specified in 135.12(6)“c.” At any point where an institutional or technological control is implemented and approved by the department, the site may be reclassified as no action required consistent with 135.12(6).

135.12(4) *Low risk classification.* A site shall be classified as low risk if none of the pathways are high risk and if any of the pathways are low risk. A pathway shall be classified low risk if it meets one of the following conditions:

a. For actual and potential receptors, if the modeled data and the actual concentrations are less than the site-specific target level line, and any of the actual concentrations are greater than the simulation line.

b. For potential receptors, if any actual concentrations exceed the site-specific target level line at any point.

c. For the soil leaching to groundwater ingestion pathway where modeling predicts that the Tier 1 levels for potential receptors would be exceeded in groundwater at applicable potential receptor points of compliance and the soil concentration exceeds the soil leaching to groundwater site-specific target level but groundwater concentrations are currently below the Tier 1 level for potential receptors, the site shall be initially classified as low risk and subject to monitoring under subparagraph 135.12(5)“d”(2). If at any time during the three-year monitoring period, groundwater concentrations exceed the Tier 1 level for potential receptors, the site shall be classified as high risk requiring soil remediation in accordance with paragraph 135.12(3)“d.”

135.12(5) *Low risk corrective action response.*

a. Purpose. For sites or pathways classified as low risk, the purpose of monitoring is to determine if concentrations are decreasing such that reclassification to no action required may be appropriate or if the contaminant plume is stable such that reclassification to no action required can be achieved with

implementation of an institutional control in accordance with 135.12(8), or if concentrations are increasing above the site-specific target level line such that reclassification to high risk is appropriate. Monitoring is necessary to evaluate impacts to actual receptors and assess the continued status of potential receptor conditions. Low risk monitoring shall be conducted and reported by a certified groundwater professional.

b. For sites or pathways classified as low risk, provide a best management practices plan. The plan must include maintenance procedures, schedule of activities, prohibition of practices, and other management practices, or a combination thereof, which, after problem assessment, are determined to be the most effective means of monitoring and preventing additional contamination of the groundwater and soil. The plan will also contain a contamination monitoring proposal containing sufficient sampling points to ensure the detection of any significant movement of or increase in contaminant concentration.

c. Groundwater monitoring. For groundwater pathways, samples must be taken at a minimum of once per year: (1) from a monitoring well at the maximum source concentration; (2) a transitional well meaning a well with detected levels of contamination closest to the leading edge of the groundwater plume as defined to the pathway-specific target level and between the source and the receptor; and (3) a guard well meaning a monitoring well between the source and the point of exposure with concentrations below the SSTL line. (NOTE: Monitoring under this provision may be used to satisfy exit monitoring if it otherwise meets the criteria in 135.12(6).)

d. Soil monitoring.

(1) For the soil vapor to enclosed space pathway potential receptors, soil gas samples must be taken at a minimum of once per year in the area(s) of expected maximum vapor concentrations where an institutional control is not in place.

(2) For the soil leaching to groundwater pathway potential receptors, annual groundwater monitoring is required for a minimum of three years as provided in “*c*” above. If groundwater concentrations are below the applicable SSTL line for all three years, no further action is required. If groundwater concentrations exceed the applicable SSTL line in any of the three years, corrective action is required to reduce soil concentrations to below the Tier 1 levels for soil leaching to groundwater. Therefore, annual monitoring of soil is not applicable.

(3) For the soil to water line pathway potential receptors, notification of the utility company is required. Notification will result in reclassification to no action required. Therefore, annual monitoring of soil is not applicable.

e. Receptors must be evaluated at least annually to ensure no actual or modeled data are above the site-specific target level line for any actual receptors. Potential receptor areas of concern must be evaluated at least annually and the presence of no actual receptors confirmed. If actual receptors are present or reasonably expected to be brought into existence, the owner or operator must report this fact to the department as soon as practicable. Annual monitoring which also meets the exit criteria under 135.12(6) may be used for that purpose.

f. The site or pathway must meet exit monitoring criteria to be reclassified as no action required as specified in 135.12(6) “*b*.” If concentrations for actual receptors increase above the site-specific target level line or potential receptor status changes to actual receptor status, the site must be reclassified as high risk and further corrective action required in accordance with 135.12(3).

135.12(6) *No action required classification.* A site shall be classified as no action required if all of the pathways are classified as no action required as provided below:

a. Soil pathways shall be classified as no action required if samples are less than the applicable target levels as defined for each pathway and confirmational sampling requirements have been met.

b. For initial classification, groundwater pathways shall be classified as no action required if the contaminant concentrations are below the site-specific target level line and all concentrations are at or less than the simulation line, and confirmation monitoring has been completed successfully. Confirmation sampling for groundwater is a second sample which confirms the no action required criteria.

c. A groundwater pathway shall be reclassified from high risk to no action required if all contaminant concentrations are below the site-specific target level and if exit monitoring criteria have been met. Exit monitoring criteria means that the three most recent consecutive groundwater samples from all monitoring wells must show a steady or declining trend and the most recent samples are below the site-specific target

level. Other criteria include the following: The first of the three samples for the source well and transition well must be more than detection limits; concentrations cannot increase more than 20 percent from the first of the three samples to the third sample; concentrations cannot increase more than 20 percent of the previous sample; and samples must be separated by at least six months.

d. A low risk site shall be reclassified as “no action required” if contaminant concentrations are below the site-specific target level and if exit monitoring criteria have been met pursuant to paragraph 135.12(6)“c” or if the site has maintained less than the applicable target level for four consecutive sampling events separated by at least six months as defined in the monitoring plan regardless of exit monitoring criteria and guidance.

e. Confirmation sampling for soil gas and indoor vapor. For the enclosed space pathways, confirmation sampling is required to reasonably establish that the soil gas and indoor vapor samples represent the highest expected levels. A groundwater professional must obtain two samples taken at least two weeks apart. One of the samples should be collected beneath the frost line depth during a seasonal period of lowest groundwater elevation.

f. As a condition of obtaining site classification as no action required, all groundwater monitoring wells must be properly plugged in accordance with 567—Chapters 39 and 49 unless the department requires selected wells to be maintained or a written request with justification and a plan for properly maintaining the wells are submitted to the department for approval. Approval to maintain wells shall be deemed granted if not disapproved with reason within 30 days of request.

g. Prior to acceptance of a request to classify the site as no action required, and in the event there is a question of validity of the data or sampling methods, laboratory analysis procedures, indication of plume movement, or the department obtains information about new conditions at the site, the department may conduct or require the owner to conduct confirmation sampling of the soil, groundwater, soil gas, or indoor vapor to confirm that the no action required criteria have been met.

h. The department may waive, at its discretion, the exit monitoring criteria based on a certified groundwater professional’s written justification to support a no action required classification for the site based on a reasoned assessment of data, trends, receptor status, and corrective actions performed. One example is when steady and declining criteria have not been met due solely to variations among a laboratory’s lowest achievable detection limits.

135.12(7) *Reclassification.* Any site or pathway which is classified as high risk may be reclassified to low risk if in the course of corrective action the criteria for low risk classification are established. Any site or pathway which is classified as low risk may be reclassified to high risk if in the course of monitoring the conditions for high risk classification are established. Sites subject to department-approved institutional or technological controls are classified as no action required if all other criteria for no action required classification are satisfied.

135.12(8) *Use of institutional and technological controls.*

a. Purpose. The purpose of an institutional control is to restrict access to or use of property such that an applicable receptor could not be exposed to chemicals of concern for as long as the target level is exceeded at applicable points of exposure and compliance. Institutional controls include:

1. A law of the United States or the state;
2. A regulation issued pursuant to federal or state laws;
3. An ordinance or regulation of a political subdivision in which real estate subject to the institutional control is located;
4. An environmental covenant as provided in 2005 Iowa Code Supplement section 455B.474(1)“f”(4) (f) and in accordance with the provisions of 2005 Iowa Code Supplement chapter 455I and 567—Chapter 14;
5. Any other institutional control the owner or operator can reasonably demonstrate to the department will reduce the risk from a release throughout the period necessary to ensure that no applicable target level is likely to be exceeded.

b. Modification or termination of institutional and technological controls. At a point when the department determines that an institutional or technological control has been removed or is no longer effective for the purpose intended, regardless of the issuance of a no further action certification or previous

site classification, it may require owners and operators to undertake such reevaluation of the site conditions as necessary to determine an appropriate site classification and corrective action response. If the owner or operator is in control of the affected property, the department may require reimplementing of the institutional or technological control or may require a Tier 2 assessment of the affected pathway(s) be conducted to reevaluate the site conditions and determine alternative corrective action response. An owner or operator subject to an institutional or technological control may request modification or termination of the control by conducting a Tier 2 assessment of the affected pathway or conduct such other assessment as required by the department to establish that the control is no longer required given current site conditions.

c. If the owner or operator is not in control of the affected property or cannot obtain control and the party in control refuses to continue implementation of an institutional control, the department may require the owner or operator to take such legal action as available to enforce institution of the control or may require the owner or operator to undertake a Tier 2 assessment to determine site classification and an alternative corrective action response. If a person in control of the affected property appears to be contractually obligated to maintain an institutional or technological control, the department may, but is not required to, attempt enforcement of the contractual obligation as an alternative to requiring corrective action by the owner or operator.

d. If a site is classified no action required, subject to the existence of an institutional control or technological control, the holder of the fee interest in the real estate subject to the institutional control or technological control may request, at any time, that the department terminate the institutional control or technological control requirement. The department shall terminate the requirement for an institutional control if the holder demonstrates by completion of a Tier 2 assessment of the applicable pathway or other assessment as required by the department that the site conditions warranting the control no longer exist and that the site or pathway has met exit criteria for no action required classification under 135.12(6).

135.12(9) *Corrective action design report submission and review procedures.*

a. Owners and operators must submit a corrective action design report (CADR) within 60 days of the date the department approves or is deemed to approve a Tier 2 assessment report under 135.10(11) or a Tier 3 assessment is to be conducted. The department may establish an alternative schedule for submittal. As an alternative to submitting a CADR, owners or operators may participate in a corrective action meeting process to develop a corrective action plan which would be incorporated into a memorandum of agreement or other written agreement approved by the department. Owners or operators shall implement the terms of an approved CADR, memorandum of agreement or other corrective action plan agreement.

b. Corrective action design report completeness and accuracy. A CADR is considered to be complete if it contains all the information and data required by this rule and the department's guidance. The report is considered accurate if the information and data are reasonably reliable based first on the standards in these rules and department guidance, and second, on generally accepted industry standards.

c. The certified groundwater professional responsible for completion of the CADR must provide the following certification with the CADR:

I, _____, groundwater professional certification number _____, am familiar with all applicable requirements of Iowa Code section 455B.474 and all rules and procedures adopted thereunder including, but not limited to, the Department of Natural Resources' guidance and specifications for corrective action design reports. Based on my knowledge of those documents and the information I have prepared and reviewed regarding this site, UST registration number _____, LUST No. _____, I certify that this document is complete and accurate as provided in 135.12(9) and meets the applicable requirements of the corrective action design report, and that the recommended corrective action can reasonably be expected to meet its stated objectives.

Signature

Date

d. Review. A CADR submitted by a groundwater professional shall be accepted by the department and shall be primarily relied upon by the department to determine the corrective action response requirements of the site. However, if within 90 days of receipt of a CADR, the department identifies material information in the CADR that is inaccurate or incomplete, and if based upon information in the report the appropriate corrective action response cannot be reasonably determined by the department based

on industry standards, the department may reject the report and require modifications. If the department does not reject the report within 90 days of receipt, the report shall be deemed approved as submitted unless changes to the report are requested by the groundwater professional. The department shall work with the groundwater professional and the owner or operator to correct any materially inaccurate information or to obtain the additional information necessary to determine the appropriate corrective action response as soon as practicable.

e. Memorandums of agreement. Owners or operators that fail to implement the actions or meet the activity schedule in a memorandum of agreement resulting from a corrective action meeting or other written corrective action plan agreement or that fail to implement the actions or meet the schedule outlined in an approved CADR are subject to legal action.

135.12(10) *Monitoring certificates and no further action certificates.*

a. Monitoring certificate. The department of natural resources will issue a monitoring certificate to the owner or operator of an underground storage tank from which a release has occurred, the current property owner, or other responsible party who has undertaken the corrective action warranting issuance of the certificate. Sites classified as low risk or sites classified as high risk/monitoring shall be eligible for a monitoring certificate. The monitoring certificate will be valid until the site is reclassified to a high risk requiring active remediation or no action required site. A site which has been issued a monitoring certificate shall not be eligible to receive a certificate evidencing completion of remediation until the site is reclassified as no action required. The monitoring certificate will be invalidated and the site reclassified to high risk if it is determined by the department that the owner of the site is not in compliance with the requirements specified in the monitoring certificate.

b. No further action certificate. When the no action required site classification has been determined based on a recommendation of the certified groundwater professional as provided in subrules 135.9(11), 135.10(11) and 135.12(6) (see also Iowa Code section 455B.474(1) “a”(8)(a) and (c)), the department shall issue a no further action certificate.

The department will issue a no further action certificate to an owner or operator of an underground storage tank from which a release has occurred, the current property owner, or other responsible party who has undertaken the corrective action warranting classification of the site as no action required. Prior to the issuance of a no further action certificate, an accurate legal description of the property on which the underground storage tanks are or were formerly located shall be submitted to the department. The following conditions apply:

(1) If free product is present, the department shall not issue a no further action certificate until the department has approved termination of all free product assessment and recovery in accordance with 135.7(5).

(2) The site has been determined by a certified groundwater professional not to present an unreasonable risk to the public health and safety or the environment.

(3) A person issued the certificate or a subsequent purchaser of the site cannot be required to perform further corrective action because action standards are changed at a later date. Action standards refer to applicable standards under this rule.

(4) The certified groundwater professional has certified that all groundwater monitoring wells have been permanently closed in accordance with 135.12(6) “f” with the exception of wells that are allowed to be maintained pursuant to 135.12(6) “f.” Wells not properly maintained shall be referred to the water supply section of the department that enforces 567—Chapter 39 and 567—Chapter 49.

(5) The certificate shall not prevent the department from ordering remediation of a release identified subsequent to the release for which the no further action certificate was issued. The certificate shall not prevent the department from requiring corrective action of a release of a regulated substance from an unregulated tank.

(6) The certificate will not constitute a warranty of any kind to any person as to the condition, marketability or value of the described property.

(7) The certificate shall reflect any institutional control utilized to ensure compliance with any applicable Tier 2 level; and may include a notation that the classification is based on the fact that designated potential receptors are not in existence.

(8) The certificate shall be in a form which is recordable in accordance with Iowa Code section 558.1 et seq., and substantially in the form as provided in Appendix C.

(9) The owner or operator or other persons conducting corrective action shall be responsible for recording the no further action certificate with the county recorder and return a file-stamped copy to the department within 30 days of the issue date. At its discretion, the department may record the no further action certificate with the appropriate county recorder as authorized in Iowa Code section 455B.474(1) "a"(8)(c).

c. The department shall modify any issued no further action certificates containing institutional controls once the owner, operator or their successor or assign has demonstrated that the institutional control is no longer necessary to meet the applicable Tier 2 level as provided in 135.12(10).

135.12(11) Expedited corrective action. An owner, operator or responsible party of a site at which a release of regulated substance is suspected to have occurred may carry out corrective actions at the site so long as the department receives notice of the expedited cleanup activities prior to 30 calendar days of their commencement; the owner, operator, or responsible party complies with the provisions of these rules; and the corrective action does not include active treatment of groundwater other than:

a. As previously approved by the department; or

b. Free product recovery pursuant to subrule 135.7(5).

c. Soil overexcavation. When undertaking overexcavation of contaminated soils, adequate field screening methods must be used to identify maximum concentrations during excavation. At a minimum one soil sample must be taken for field screening every 100 square feet of the base and each sidewall. Soil samples must be taken for laboratory analysis at least every 400 square feet of the base and each sidewall of the excavated area to confirm remaining concentrations are below Tier 1 levels. If the excavation is less than 400 square feet, a minimum of one sample must be analyzed for each sidewall and the base. The owner or operator must maintain adequate records of the excavation area to document compliance with this procedure unless submitted to the department and must provide it to the department upon request.

[ARC 9011B, IAB 8/25/10, effective 9/29/10; ARC 9331B, IAB 1/12/11, effective 2/16/11; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.13(455B) Public participation.

135.13(1) For each confirmed release that is classified as high or low risk, the department must provide notice to the public by means designated to reach those members of the public directly affected by the release and the recommended corrective action response. This notice may include, but is not limited to, public notice in local newspapers, block advertisements, public service announcements, publication in a state register, letters to individual households, or personal contacts by the staff.

135.13(2) The department must ensure site release information and decisions concerning the Tier 1 assessment report, Tier 2 and Tier 3 site cleanup reports are made available to the public for inspection upon request.

135.13(3) Before approving the Tier 2 or Tier 3 site cleanup report, the department may hold a public meeting to consider comments on the proposed corrective action response if there is sufficient public interest, or for any other reason.

135.13(4) The department must give a public notice that complies with subrule 135.13(1) above if the implementation of the approved Tier 2 or Tier 3 site cleanup report does not achieve the established cleanup levels in the report and the termination of that report is under consideration by the department.

567—135.14(455B) Action levels. The following corrective action levels apply to petroleum-regulated substances as regulated by this chapter. These action levels shall be used to determine if further corrective action under rules 567—135.6(455B) through 567—135.12(455B) or rule 567—135.15(455B) is required as the result of tank closure sampling under subrule 135.15(3) or other analytical results submitted to the department. The contaminant concentrations must be determined by laboratory analysis as stated in rule 567—135.16(455B). Final cleanup determination is not limited to these contaminants. The contamination corrective action levels are:

	Soil (mg/kg)	Groundwater (ug/L)
Benzene	0.54	5

Toluene	3.2	1,000
Ethylbenzene	15	700
Xylenes	52	10,000
Total Extractable Hydrocarbons—Diesel	3,800	1,200
Total Extractable Hydrocarbons—Waste Oil		400

[ARC 9011B, IAB 8/25/10, effective 9/29/10; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.15(455B) Out-of-service UST systems, temporary closure, and permanent closure.

135.15(1) Out-of-service UST systems and temporary closure.

a. UST systems not meeting either the performance standards in subrule 135.3(1) for new UST systems or the upgrading requirements in subrule 135.3(2) by December 22, 1998, must be permanently closed according to subrule 135.15(2). The tanks cannot be brought back into use.

b. When a UST system in compliance with new tank standards is out of service for less than three months, owners and operators must:

- (1) Continue operation and maintenance of corrosion protection in accordance with subrule 135.4(2);
- (2) Continue operation and maintenance of any release detection in accordance with rule 567—135.5(455B) unless the system is empty. The UST system is empty when all materials have been removed using commonly employed practices. No more than 2.5 centimeters (1 inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, may remain in the system;
- (3) Comply with rules 567—135.6(455B) to 567—135.12(455B) if a release is suspected or confirmed;
- (4) Maintain financial responsibility (e.g., insurance) in accordance with 567—Chapter 136. If at any time financial responsibility coverage is or will be terminated, a site check for contamination must be completed before coverage is terminated. A site check must use the closure-in-place sampling procedures in paragraphs 135.15(3)“b” and “d” or the Tier 1 site assessment in rule 567—135.9(455B). If the tanks are located in a contaminated area with active monitoring and remediation, the tank owner may request the department waive the site check providing justification.

(5) Continue to pay the tank management fee as required in subrule 135.3(5).

(6) Continue to have compliance inspections conducted as required in rule 567—135.20(455B).

c. When a UST system is out of service for three months or more, an owner must submit a notification of temporary closure form to the department. Owners and operators must complete the requirements in paragraph 135.15(1)“b” for temporary closure and certify the following:

- (1) The UST system is empty of all regulated substances (e.g., receipt of product removal).
- (2) Vent lines are open and functioning.
- (3) All other piping, pumps, accesses, and ancillary equipment are capped and locked.
- (4) The corrosion protection system is being maintained in accordance with subrule 135.4(2). Include documentation that electricity is being maintained to operate the impressed current cathodic protection system if present.

(5) For lined tanks, provide a copy of the last internal inspection.

(6) Provide proof of financial responsibility (e.g., insurance) according to 567—Chapter 136.

d. When a tank system is temporarily closed for more than 12 months, the owner must remain in compliance with the department’s temporary closure requirements in paragraph 135.15(1)“c.” The department may provide an extension to the 12-month temporary closure period. Owners and operators must complete a site check in accordance with paragraph 135.6(3)“b” before such an extension can be applied for.

e. If a tank system is temporarily closed for more than 12 months, but the tank system has not been temporarily closed according to the requirements of paragraph 135.15(1)“c,” or the owner or operator has failed to maintain out-of-service requirements in paragraph 135.15(1)“b,” the UST system must be permanently closed in accordance with subrule 135.15(2).

f. Prior to returning a temporarily closed tank back into service, the owner or operator must complete and submit the department's return-to-service form signed by a licensed installer and provide the following documentation. The tank system cannot be operated or receive fuel until current tank tags have been issued.

- (1) Documentation that the tanks were temporarily closed in accordance with subrule 135.15(1).
- (2) Where applicable, documentation that corrosion protection has been maintained continuously in accordance with subrule 135.4(2). The owner or operator must provide an inspection log of the cathodic protection system and the inspection report of the cathodic protection system completed by an Iowa-licensed corrosion tester.
- (3) For lined tanks, provide a lining and tank integrity inspection report.
- (4) Results of precision tightness tests (0.1 gph) conducted on tanks in accordance with rule 567—135.5(455B).
- (5) Results of precision tightness tests (0.1 gph) conducted on lines in accordance with rule 567—135.5(455B). This includes piping used for remote fill.
- (6) Function test (3.0 gph) results of mechanical or electronic leak detectors conducted in accordance with rule 567—135.5(455B).

NOTE: Function tests are not required on confirmed "safe suction" dispensing lines.

- (7) Tank and piping leak detection is operational and in good condition.
- (8) Secondary containment is installed where necessary in accordance with subrule 135.3(9).
- (9) Spill containment, overfill prevention and all containment sumps are in good condition and operating in accordance with subrule 135.4(1). Tightness tests conducted within the last 12 months must be provided for secondary containment of tanks, piping, sumps, under dispenser containment and spill containment.
- (10) Copy of the financial responsibility (e.g., UST insurance) mechanism in accordance with 567—Chapter 136.
- (11) Certification from an Iowa-licensed installer that the UST system and equipment are installed correctly, are in good operable condition and meet all regulatory requirements for startup and operation.
- (12) Copies of Class A and Class B operator training certificates.
- (13) Change of ownership form (if the UST facility was sold).

135.15(2) Permanent closure and changes-in-service. Permanent closure of an underground storage tank system must be conducted by an Iowa-licensed tank remover. Closure sampling must be conducted by or under the supervision of an Iowa-certified groundwater professional.

a. At least 30 days before beginning either permanent closure or a change-in-service under paragraphs "b" and "c" below, owners and operators must notify the department of their intent to permanently close or make the change-in-service. An owner or operator must seek prior approval to permanently close a tank in a time frame shorter than the 30-day notice. The required assessment of the excavation zone under 135.15(3) must be performed after notifying the department but before completion of the permanent closure or a change-in-service.

b. To permanently close a tank or piping, owners and operators must empty and clean them by removing all liquids and accumulated sludge. All tanks taken out of service permanently must also be removed from the ground, filled with an inert solid material, or closed in place by a method approved by the department. Piping must be removed from the ground or have the ends plugged with an inert solid material.

When permanently closing a tank by filling with inert solid material, the tank may not be filled until a closure report is approved by the department. The tank must be filled within 30 days after department approval. The owner and operator must notify the department within 15 days after filling the tank with inert solid material.

c. Continued use of a UST system to store a nonregulated substance is considered a change-in-service. Before a change-in-service, owners and operators must empty and clean the tank by removing all liquid and accumulated sludge and conduct a site assessment in accordance with 135.15(3).

d. Permanent closure procedures must be followed in the replacement of tanks or piping. Notification must be made using DNR Form 542-1308, "Notification of Tank Closure or Change-in-Service." The form must include the date scheduled for the closure. Oral confirmation of the closure date must be given to the

DNR field office 24 hours prior to the actual closure. The required assessment of the excavation zone under subrule 135.15(3) must be performed after notifying the department but before completion of the permanent closure or change-in-service.

NOTE: The following cleaning and closure procedures may be used to comply with subrule 135.15(2):

- American Petroleum Institute Recommended Practice RP 1604, “Closure of Underground Petroleum Storage Tanks”;
- American Petroleum Institute Standard 2015, “Safe Entry and Cleaning of Petroleum Storage Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning”;
- American Petroleum Institute Recommended Practice 2016, “Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks”;
- American Petroleum Institute Recommended Practice RP 1631, “Interior Lining and Periodic Inspection of Underground Storage Tanks,” may be used as guidance for compliance with this subrule;
- National Fire Protection Association Standard 326, “Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair”; and
- National Institute for Occupational Safety and Health Publication 80-106, “Criteria for a Recommended Standard...Working in Confined Space” may be used as guidance for conducting safe closure procedures at some hazardous substance tanks.

135.15(3) *Assessing the site at closure or change-in-service.*

a. Before permanent closure or a change-in-service is completed, owners or operators must measure for the presence of a release where contamination is most likely to be present at the UST site. This soil and groundwater closure investigation must be conducted or supervised by a groundwater professional certified under 567—Chapter 134, Part A, unless the department in its discretion grants an exemption and provides direct supervision of the closure investigation. In selecting the sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to groundwater, and other factors appropriate for identifying the presence of a release.

At UST sites with a history of petroleum storage, soil and groundwater samples shall in every case be analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) with each compound reported separately in accordance with rule 567—135.16(455B). If there has been a history or suspected history of petroleum storage other than gasoline or gasoline blends (i.e., all grades of diesel fuels, fuel oil, kerosene, oil and mineral spirits), or such storage history is unknown or uncertain, soil and groundwater samples shall also be analyzed for total extractable hydrocarbons in accordance with rule 567—135.16(455B).

All such samples shall be collected separately and shipped to a laboratory certified under 567—Chapter 83 within 72 hours of collection. Samples shall be refrigerated and protected from freezing during shipment to the laboratory.

When a UST is removed from an area of confirmed contamination, the department may waive closure sampling if written documentation is submitted with the closure notification. Documentation should include laboratory analytical reports and a site map showing tank and piping locations along with contamination plume and sampling locations.

b. For all permanent tank and piping closures or changes-in-service, at least one water sample must be taken from the first saturated groundwater zone via a developed monitoring well except as provided in paragraph 135.15(3)“g.” The well must be located downgradient from and as close as possible to the UST system but no farther away than 20 feet from system components. At some tank and piping closures, a minimum of one monitoring well may not be sufficient to represent a release where it is most likely to be present. An additional groundwater monitoring well or wells may be necessary.

If, however, the first saturated groundwater zone is not encountered within 10 feet below the lowest elevation of the tank excavation, the requirement for groundwater sampling shall not apply unless:

(1) Sands or highly permeable soils are encountered within 10 feet below the lowest level of the tank excavation which together with the underlying geology would, in the judgment of the department, pose the reasonable possibility that contamination may have reached groundwaters deeper than 10 feet below the lowest level of the tank excavation. The method of determining highly permeable soil is found in the

departmental guidance documents entitled “Underground Storage Tank Closure Procedures for Tank and Piping Removal” and “Underground Storage Tank Closure for Filling in Place.”

(2) Indications of potential groundwater contamination, including petroleum products in utility lines, petroleum products in private wells, petroleum product vapors in basements or other structures, occur in the area of the tank installation undergoing closure or change-in-service.

c. For permanent closure by tank removal, the departmental guidance document entitled “Underground Storage Tank Closure Guidance” must be followed. The minimum number of soil samples that must be taken depends on the tank size and length of product piping. Samples must be taken at a depth of 1 to 2 feet beneath the tank fill area below the base of the tank along the tank’s centerline. Soil samples must also be taken at least every 10 feet along the product piping at a depth of 1 to 2 feet beneath the piping fill area below the piping, unless alternate sampling is approved by the department.

If sands or other highly permeable soils are encountered, alternative sampling methods may be required.

If contamination is suspected or found in any area within the excavation (i.e., sidewall or bottom), a soil sample must be taken at that location.

The numbers of samples required for tanks are as follows:

Nominal Tank Capacity (gallons)	Number of Samples	Location on Centerline
1,000 or less	1	center of tank
1,001 - 8,000	2	1/3 from ends
8,001 - 30,000	3	5 feet from ends and at center of tank
30,001 - 40,000	4	5 and 15 feet from ends
40,001 and more	5	5 and 15 feet from ends and at center of tank

d. For closing a tank in place by filling with an inert solid material or for a change-in-service, the departmental guidance document entitled “Underground Storage Tank Closure for Filling in Place” must be followed. The minimum number of soil borings required for sampling depends on the size of the tank and the length of the product piping. Soil samples must be taken within 5 feet of the sides and ends of the tank at a depth of 2 to 4 feet below the base of the tank, but outside the backfill material, at equal intervals around the tank. Soil samples must also be taken at least every 10 feet along the product piping at a depth of 1 to 2 feet beneath the piping fill area below the piping, unless alternate sampling is approved by the department. If sands or other highly permeable soils are encountered, alternative sampling methods may be required.

The minimum numbers of soil borings and samples required are as follows:

Nominal Tank Capacity (gallons)	Number of Samples	Location of Samples
6,000 or less	4	1 each end and each side
6,001 - 12,000	6	1 each end and 2 each side
12,001 or more	8	1 each end and 3 each side

e. A closure report in a format prescribed by the department must be submitted to the department within 45 days of the tank removal or sampling for a closure in place. Refer to the Underground Storage Tank Closure Guidance for reporting format. The tank tags must be returned with the closure report.

f. The requirements of this subrule are satisfied if one of the external release detection methods allowed in 135.5(4) “e” and “f” is operating in accordance with the requirements in 135.5(4) at the time of closure and indicates no release has occurred.

g. If contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered during the site assessment or by any other manner, contact the department in accordance with 135.6(1). Normal closure procedures no longer apply. Owners and operators must begin corrective action in accordance with rules 567—135.7(455B) to 567—135.12(455B).

Identification of free product requires immediate response in accordance with 135.7(5). If contamination appears extensive or the groundwater is known to be contaminated, a full assessment of the contamination will be required. When a full assessment is required or anticipated, collection of the required

closure samples is not required. If contamination appears limited to soils, overexcavation of the contaminated soils in accordance with 135.15(4) may be allowed at the time of closure.

135.15(4) *Overexcavation of contaminated soils at closure.*

a. If contaminated soils are discovered while assessing a site at closure in accordance with 135.15(3), owners and operators may overexcavate up to one foot of the contaminated soils surrounding the tank pit. The contamination and overexcavation must be reported to the department in accordance with the requirements of 135.6(4) "a" prior to backfilling the excavation. If excavation is limited to one foot of contaminated soils, a soil sample shall be taken and laboratory analyzed in accordance with 567—135.16(455B) from the area showing the greatest contamination. Any overexcavation of contaminated soils beyond one foot of contaminated soils is considered expedited corrective action and must be conducted by a certified groundwater professional in accordance with the procedures in 135.12(11).

b. Excavated contaminated soils must be properly disposed in accordance with 567—Chapters 100, 101, 102, 120, and 121, Iowa Administrative Code.

c. A report must be submitted to the department within 30 days of completion of the laboratory analysis. The report must include the requirements of 135.15(3) "e" and a dimensional drawing showing the depth and area of the excavation prior to and after overexcavation. The area of contamination must be shown.

135.15(5) *Applicability to previously closed UST systems.* When directed by the department, the owner and operator of a UST system permanently closed before October 24, 1988, must assess the excavation zone and close the UST system in accordance with this rule if releases from the UST may, in the judgment of the department, pose a current or potential threat to human health and the environment.

135.15(6) *Closure records.* Owners and operators must maintain records in accordance with 135.4(5) that are capable of demonstrating compliance with closure requirements under this rule. The results of the excavation zone assessment required in 135.15(3) must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

- a. By the owners and operators who took the UST system out of service;
- b. By the current owners and operators of the UST system site; or
- c. By mailing these records to the department if they cannot be maintained at the closed facility.

135.15(7) *Applicability to pre-1974 USTs.* The closure provisions of rule 567—135.15(455B) are not applicable to USTs which have been out of operation prior to January 1, 1974. For purposes of this subrule, out of operation means that no regulated substance has been deposited into or dispensed from the tanks and that the tanks do not currently contain an accumulation of regulated substances other than a de minimis amount as provided in paragraph 135.15(1) "a."

Owners and operators or other interested parties are not required to submit documentation that USTs meet the exemption conditions and may rely on this subrule as guidance. However, should a question arise as to whether USTs meet the exemption, or owners and operators or other interested parties request acknowledgment by the department that USTs are exempt, they must submit an affidavit on a form provided by the department. The affiant must certify that based on a reasonable investigation and to the best of the affiant's knowledge, the USTs were taken out of operation prior to January 1, 1974, the USTs have not contained a regulated substance since January 1, 1974, and the USTs do not currently contain an accumulation of regulated substances.

If the department has a reasonable basis to suspect a release has occurred, the release investigation and confirmation steps of rule 567—135.6(455B) and the corrective action requirements as provided in rules 567—135.7(455B) through 567—135.12(455B) shall apply.

[ARC 8124B, IAB 9/9/09, effective 10/14/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.16(455B) Laboratory analytical methods for petroleum contamination of soil and water.

135.16(1) *General.* When analyzing for petroleum or hazardous substances, owners and operators of UST systems must use a laboratory certified under 567—Chapter 83. In addition they must ensure that all samples are properly preserved and shipped within 72 hours of collection to a laboratory certified under 567—Chapter 83. This rule provides acceptable analytical procedures for petroleum substances and required information that must be provided in all laboratory reports.

135.16(2) Laboratory report. All laboratory reports must contain the following information:

a. Laboratory name, address, telephone number and Iowa laboratory certification number. If analytical work is subcontracted to another laboratory, the analytical report from the certified lab which analyzed the sample must be submitted and include the information required in this subrule.

b. Medium sampled (soil, water).

c. Client submitting sample (name, address, telephone number).

d. Sample collector (name, telephone number).

e. UST site address.

f. Clients sample location identifier.

g. Date sample was collected.

h. Date sample was received at laboratory.

i. Date sample was analyzed.

j. Results of analyses and units of measure.

k. Detection limits.

l. Methods used in sample analyses (preparation method, sample detection method, and quantitative method).

m. Laboratory sample number.

n. Analyst name.

o. Signature of analyst's supervisor.

p. Condition in which the sample was received at the laboratory and whether it was properly sealed and preserved.

q. Note that analytical results are questionable if a sample exceeded an established holding time or was improperly preserved. (The recommended holding time for properly cooled and sealed petroleum contaminated samples is 14 days, except for water samples containing volatile organic compounds which have a 7-day holding time unless acid-preserved.)

r. Laboratory reports required by this chapter for tank closure investigations under 567—135.15(455B) and site checks under 135.6(3) or Tier 1 or Tier 2 assessments under 567—135.9(455B) to 567—135.11(455B) must include a copy of the chromatograms and associated quantitation reports for the waste oil, diesel and gasoline standard used by the laboratory in analyzing submitted samples. The laboratory analytical report for each sample must state whether the sample tested matches the laboratory standard for waste oil, diesel or gasoline or that the sample cannot be reliably matched with any of these standards. A copy of the chromatograms and associated quantitation reports for only the soil and groundwater samples with the maximum concentrations of BTEX and TEH must be included.

135.16(3) Analysis of soil and water for high volatile petroleum compounds (i.e., gasoline, benzene, ethylbenzene, toluene, xylene). Sample preparation and analysis shall be by Method OA-1, "Method for Determination of Volatile Petroleum Hydrocarbons (gasoline)," revision 12/01/2019, state hygienic laboratory at the University of Iowa, or EPA Method 8260D, "Test Methods for Evaluating Solid Waste," 3rd Edition—Update 6, July 2018. Copies of Method OA-1 are available from the department.

135.16(4) Analysis of soil and water for low volatile petroleum hydrocarbon contamination (i.e., all grades of diesel fuel, fuel oil, kerosene, oil, and mineral spirits). Sample preparation and analysis shall be by Method OA-2, "Determination of Extractable Petroleum Products (and Related Low Volatility Organic Compounds)," revision 12/01/2019, state hygienic laboratory at the University of Iowa. Copies of Method OA-2 are available from the department.

135.16(5) Analysis of soil gas for volatile petroleum hydrocarbons. Analysis of soil gas for volatile petroleum hydrocarbons shall be conducted in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 1501, Issue 3, March 15, 2003, or a department-approved equivalent method.

135.16(6) Analytical methods for methyl tertiary-butyl ether (MTBE). Analysis of water for MTBE must be conducted by a laboratory certified under 567—Chapter 83 for petroleum analyses.

a. Sample preparation and analysis shall be by U.S. Environmental Protection Agency Method 8260D, "Test Methods for Evaluating Solid Waste," 3rd Edition—Update 6, July 2018.

b. Laboratories performing the analyses must run standards for MTBE on a routine basis, and standards for other possible compounds like ethyl tertiary-butyl ether (ETBE), tertiary-amyl methyl ether (TAME), di-isopropyl ether (DIPE), and tertiary-butyl alcohol (TBA) to be certain of their identification should they be detected.

c. Laboratories must run a method detection limit study and an initial demonstration of capability for MTBE. These records must be kept on file.

d. The minimum detection level for MTBE in water is 15 ug/L.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.17(455B) Evaluation of ability to pay.

135.17(1) General. The ability to pay guidance procedures referenced in this rule will be used by the department when an owner or operator of an underground storage tank (UST) claims to be financially unable to comply with corrective action requirements under 567—135.7(455B) to 567—135.12(455B) or closure investigation requirements under 567—135.15(455B). If an owner or operator of a regulated UST claims to be financially unable to meet these departmental requirements, that responsible party must provide documentation of the party's finances on forms provided by the department in order for the department to act on the claim of financial inability. The department may request additional financial documentation to verify or supplement reported information.

135.17(2) Individual claims. The financial ability of individual owners and operators of USTs, with or without an active business (including but not limited to sole proprietorships and general partnerships), may be evaluated using the most current version of "INDIPAY" developed by the U.S. Environmental Protection Agency and generally accepted principles of financial analysis. This guidance is only one tool the department may use in evaluating claims of financial inability.

135.17(3) Corporate claims. The financial ability of corporate owners and operators of USTs may be evaluated using the most current version of "ABEL" developed by the U.S. Environmental Protection Agency and generally accepted principles of financial analysis. This guidance is only one tool the department may use in evaluating claims of financial inability.

135.17(4) Federal LUST Trust Fund. The financial ability of owners and operators of USTs shall be evaluated for the purpose of determining if the department is authorized to use Federal LUST Trust Fund moneys as provided in the current cooperative agreement with the U.S. Environmental Protection Agency, Region VII. A determination of financial inability does not create an entitlement or any expectation interest on behalf of an owner or operator that Federal LUST Trust Fund moneys will be used for corrective action at any individual site.

135.17(5) The evaluation of financial ability will also be used by the department in making other administrative planning decisions including but not limited to decisions as to whether to pursue and when to pursue administrative or judicial enforcement of regulatory and statutory duties and the assessment of penalties. A determination of financial inability does not create an entitlement or expectation interest that enforcement actions will be deferred or suspended. The evaluation of this factor is only one of many affecting the department's fully discretionary decisions regarding enforcement options and program planning.

135.17(6) An evaluation of financial inability as provided in this rule does not relieve any owner or operator of legal liability to comply with department rules or Iowa Code chapter 455B or provide a defense to any legal actions to establish liability or enforce compliance.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.18(455B) Transitional rules.

135.18(1) *Risk-based corrective action assessment reports, corrective action plans, and corrective action design reports accepted before August 6, 2008.* Any owner or operator who had a Tier 2 site cleanup report, Tier 3 report, or corrective action design report approved by the department before August 6, 2008, may elect to submit a Tier 2 site cleanup report using the Appendix B revised model, department-developed software and rules in effect as of August 6, 2008. The owner or operator shall notify the department that the owner or operator wishes to evaluate the leaking underground storage tank site with the Appendix B revised model, software and rules. If the owner or operator so elects, the site shall be assessed, classified,

and, if necessary, remediated, in accordance with the rules of the department as of August 6, 2008. If the leaking underground storage tank site is undergoing active remediation, the remediation system shall remain operating until the reevaluation is completed and accepted or as otherwise approved by the department. Once a site has been evaluated using the Appendix B revised model, software and rules in effect as of August 6, 2008, it can no longer be evaluated with the Appendix B-1 old model and software and rules in effect prior to August 6, 2008.

135.18(2) *Risk-based corrective action assessment reports, corrective action plans, and corrective action design reports in the process of preparation with a submittal schedule established prior to August 6, 2008.* The owner or operator shall notify the department that the owner or operator wishes to use the Appendix B revised model and department software and rules in effect as of August 6, 2008, to evaluate the leaking underground storage tank site before submitting the next report, and prior to expiration of the previously established submittal schedule. Once a site has been evaluated using the Appendix B revised model, software and rules in effect as of August 6, 2008, it can no longer be evaluated with the Appendix B-1 old model, software and rules existing just prior to August 6, 2008.

135.18(3) *Risk-based corrective action assessment reports, corrective action plans, and corrective action design reports received by the department but not yet reviewed.* The owner or operator will notify the department within 60 days of August 6, 2008, whether the owner or operator is electing to complete a risk-based corrective action assessment using Appendix B revised model, department software and rules effective as of August 6, 2008, or proceeding with the risk-based corrective action assessment using Appendix B-1 old model and department software and rules existing prior to August 6, 2008. Once a site has been evaluated using the Appendix B revised model, software and rules it can no longer be evaluated with the previous Appendix B-1 old model, software and rules.

567—135.19(455B) Analyzing for methyl tertiary-butyl ether (MTBE).

135.19(1) *General.* The objective of analyzing for MTBE is to determine its presence in water samples collected as part of investigation and remediation of contamination for underground storage tank facilities.

135.19(2) *Required MTBE testing.* Water samples must be analyzed for MTBE when collected for risk-based corrective action as required in rules 567—135.8(455B) through 567—135.12(455B). These sampling requirements include but are not limited to Tier 2 and Tier 3 assessments where groundwater ingestion pathway evaluation and subsequent monitoring is required.

135.19(3) *MTBE testing not required.* Analysis for MTBE is not required for the following:

- a. Closure sampling under rule 567—135.15(455B).
- b. Site checks under subrule 135.6(3).
- c. If prior analysis under subrule 135.19(2) has not shown MTBE present.
- d. If the department determines MTBE analysis is no longer needed at a site.

135.19(4) *Reporting.* The analytical data must be submitted in a format prescribed by the department.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.20(455B) Compliance inspection of UST system.

135.20(1) The owner or operator must have the UST system inspected and an inspection report submitted to the department by a UST compliance inspector certified by the department under 567—Chapter 134, Part B. An initial compliance site inspection shall be conducted within two years after new tank installation. All subsequent compliance site inspections conducted after the initial compliance site inspection shall be conducted within 24 months of the prior compliance site inspection. Compliance site inspections must be separated by at least six months.

135.20(2) *Compliance inspection requirements.* The owner or operator is responsible to ensure the department receives ten days' prior notice by the compliance inspector of the date of a site inspection and the name of the inspector as provided in 567—134.14(455B). The owner and operator must comply with the following as part of the inspection process.

- a. Review and respond to the inspection report provided by the certified compliance inspector and complete the corrective actions specified in the compliance inspection report within the specified time frames.

b. Provide all records and documentation required by the certified compliance inspector and this chapter.

c. Upon notification of a suspected release by the certified compliance inspector pursuant to 567—subrule 134.14(1), report the condition to the department and undertake steps to investigate and confirm the suspected release as provided in 567—135.6(455B).

d. Ensure that the compliance inspector completes and submits an electronic inspection form in accordance with 567—134.14(455B).

135.20(3) The owner and operator shall do the following upon receipt of a compliance inspection report as provided in 567—subrule 134.14(1) which finds violations of the department's rules:

a. Take all actions necessary to correct any compliance violations or deficiencies in accordance with this chapter. Corrective action must be taken within the time frame established by rule or, if no time frames are established by rule, within 60 days of receipt of the inspector's report or another reasonable time period approved by the department. The granting of time to remedy a violation does not preclude the department from exercising its discretion to assess penalties for the violation.

b. Within 60 days of receipt of the inspector's report, provide documentation to the compliance inspector that the violation or deficiencies have been corrected.

c. Conduct a follow-up inspection in instances where there are serious problems or a history of repeated violations when required by the department.

135.20(4) Conflict of interest. A compliance site inspection must be conducted by a certified compliance inspector who is not the owner or operator of the UST system being inspected, an employee of the owner or operator of the UST system being inspected, or a person having daily on-site responsibility for the operation and maintenance of the UST system.

[ARC 8124B, IAB 9/9/09, effective 10/14/09; ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—135.21(455B) UST systems with field-constructed tanks and airport hydrant fuel distribution systems.

135.21(1) General requirements.

a. Implementation of requirements. Owners and operators must comply with the requirements of this rule for UST systems with field-constructed tanks and airport hydrant systems as follows:

(1) For UST systems installed on or before June 23, 2021, the requirements are effective according to the following schedule:

Requirement	Effective Date
Upgrading UST systems, general operating requirements, and operator training	October 13, 2021
Release detection	October 13, 2021
Release reporting, response, and investigation; closure; financial responsibility and notification (except as provided in paragraph 135.21(1)“b”)	June 23, 2021

(2) For UST systems installed after June 23, 2021, the requirements apply at installation.

b. All owners of previously deferred UST systems must submit a registration form provided by the department. Owners and operators of UST systems must demonstrate financial responsibility at the time of submission of the registration form.

c. Except as provided in subrule 135.21(2), owners and operators must comply with the requirements of rules 567—135.1(455B) through 567—135.20(455B) and 567—Chapter 136.

d. In addition to the codes of practice listed in subrule 135.3(1), owners and operators may use military construction criteria, such as Unified Facilities Criteria (UFC) 3-460-01, Petroleum Fuel Facilities, when designing, constructing, and installing airport hydrant systems and UST systems with field-constructed tanks.

135.21(2) Additions, exceptions, and alternatives for UST systems with field-constructed tanks and airport hydrant systems.

a. *Exception to piping secondary containment requirements.* Owners and operators may use single-walled piping when installing or replacing piping associated with UST systems with field-constructed tanks

greater than 50,000 gallons and piping associated with airport hydrant systems. Piping associated with UST systems with field-constructed tanks less than or equal to 50,000 gallons not part of an airport hydrant system must meet the secondary containment requirement when installed or replaced.

b. Upgrade requirements. Not later than October 13, 2021, airport hydrant systems and UST systems with field-constructed tanks where installation commenced on or before June 23, 2021, must meet the following requirements or be permanently closed pursuant to rule 567—135.15(455B).

(1) Corrosion protection. UST system components in contact with the ground that routinely contain regulated substances must meet one of the following:

1. Except as provided in paragraph 135.21(2) “a,” the new UST system performance standards for tanks in paragraph 135.3(1) “a” and for piping in paragraph 135.3(1) “b”; or

2. Be constructed of metal and cathodically protected according to a code of practice developed by a nationally recognized association or independent testing laboratory, and meet the requirements of paragraphs 135.3(1) “a”(2) “3” and “4” for tanks, and subparagraphs 135.3(1) “a”(2), (3) and (4) for piping. A tank greater than ten years old without cathodic protection must be assessed to ensure the tank is structurally sound and free of corrosion holes prior to adding cathodic protection. The assessment must be by internal inspection or another method determined by the department to adequately assess the tank for structural soundness and corrosion holes.

NOTE regarding paragraph 135.21(2) “b”: The following codes of practice may be used to comply with this paragraph:

- NACE International Standard Practice SP 0285, “External Control of Underground Storage Tank Systems by Cathodic Protection”;
- NACE International Standard Practice SP 0169, “Control of External Corrosion on Underground or Submerged Metallic Piping Systems”;
- National Leak Prevention Association Standard 631, Chapter C, “Internal Inspection of Steel Tanks for Retrofit of Cathodic Protection”; or
- American Society for Testing and Materials Standard G158, “Standard Guide for Three Methods of Assessing Buried Steel Tanks.”

(2) Spill and overfill prevention equipment. To prevent spilling and overfilling associated with product transfer to the UST system, all UST systems with field-constructed tanks and airport hydrant systems must comply with new UST system spill and overfill prevention equipment requirements specified in paragraph 135.3(1) “c.”

c. Walkthrough inspections. In addition to the walkthrough inspection requirements in subrule 135.4(13), owners and operators must inspect the following additional areas for airport hydrant systems at least once every 30 days if confined space entry according to the Occupational Safety and Health Administration (see 29 CFR part 1910) is not required or at least annually if confined space entry is required and keep documentation of the inspection according to paragraph 135.4(13) “e.”

(1) Hydrant pits: visually check for any damage; remove any liquid or debris; and check for any leaks, and

(2) Hydrant piping vaults: check for any hydrant piping leaks.

d. Release detection. Owners and operators of UST systems with field-constructed tanks and airport hydrant systems must begin meeting the release detection requirements described in this subrule not later than October 13, 2021.

(1) Methods of release detection for field-constructed tanks. Owners and operators of field-constructed tanks with a capacity less than or equal to 50,000 gallons must meet the release detection requirements in rule 567—135.5(455B).

(2) Owners and operators of field-constructed tanks with a capacity greater than 50,000 gallons must meet either the requirements in rule 567—135.5(455B) (except paragraphs 135.5(4) “e” and “f” must be combined with inventory control as stated below) or use one or a combination of the following alternative methods of release detection:

1. Conduct an annual tank tightness test that can detect a 0.5 gallon per hour leak rate;

2. Use an automatic tank gauging system to perform release detection at least every 30 days that can detect a leak rate less than or equal to 1 gallon per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon-per-hour leak rate performed at least every three years;

3. Use an automatic tank gauging system to perform release detection at least every 30 days that can detect a leak rate less than or equal to 2 gallons per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon-per-hour leak rate performed at least every two years;

4. Perform vapor monitoring (conducted in accordance with paragraph 135.5(4)“e” for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon-per-hour leak rate at least every two years;

5. Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25; ATA Airport Fuel Facility Operations and Maintenance Guidance Manual; or equivalent procedures) at least every 30 days that can detect a leak equal to or less than 0.5 percent of flow-through; and

- Perform a tank tightness test that can detect a 0.5 gallon per hour leak rate at least every two years;

or

- Perform vapor monitoring or groundwater monitoring (conducted in accordance with paragraph 135.5(4)“e” or “f,” respectively, for the stored regulated substance) at least every 30 days; or

6. Another method approved by the department if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraph 135.21(2)“d”(2). In comparing methods, the department shall consider the size of release that the method can detect and the frequency and reliability of detection.

(3) Methods of release detection for piping. Owners and operators of underground piping associated with field-constructed tanks less than or equal to 50,000 gallons must meet the release detection requirements in rule 567—135.5(455B). Owners and operators of underground piping associated with airport hydrant systems and field-constructed tanks greater than 50,000 gallons must follow either the requirements in rule 567—135.5(455B) (except paragraphs 135.5(4)“e” and “f” must be combined with inventory control as stated below) or use one or a combination of the following alternative methods of release detection:

1. Perform a semiannual or annual line tightness test at or above the piping operating pressure in accordance with the table below.

Test Section Volume (Gallons)	Maximum Leak Detection Rate Per Test Section Volume	
	Semiannual Test— Leak Detection Rate Not to Exceed (Gallons Per Hour)	Annual Test— Leak Detection Rate Not to Exceed (Gallons Per Hour)
< 50,000	1.0	0.5
≥ 50,000 to < 75,000	1.5	0.75
≥ 75,000 to < 100,000	2.0	1.0
≥ 100,000	3.0	1.5

Piping segment volumes ≥ 100,000 gallons not capable of meeting the maximum 3.0 gallon per hour leak rate for the semiannual test may be tested at a leak rate up to 6.0 gallons per hour according to the following schedule:

Phase in for Piping Segments ≥ 100,000 Gallons in Volume	
First test	Not later than October 13, 2021 (may use up to 6.0 gph leak rate)
Second test	Between October 13, 2021, and October 13, 2024 (may use up to 6.0 gph leak rate)
Third test	Between October 13, 2024, and October 13, 2025 (must use 3.0 gph for leak rate)
Subsequent tests	After October 13, 2025, begin using semiannual or annual line testing according to the Maximum Leak Detection Rate Per Test Section Volume table above

2. Perform vapor monitoring (conducted in accordance with paragraph 135.5(4)“e” for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two years;

3. Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual; or equivalent procedures) at least every 30 days that can detect a leak equal to or less than 0.5 percent of flow-through, and

- Perform a line tightness test (conducted in accordance with paragraph 135.21(2) “d”(3)“1” using the leak rates for the semiannual test) at least every two years; or

- Perform vapor monitoring or groundwater monitoring (conducted in accordance with paragraph 135.5(4) “e” or “f,” respectively, for the stored regulated substance) at least every 30 days; or

4. Another method approved by the department if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in paragraphs 135.21(2) “d”(3)“1” to “3.” In comparing methods, the department shall consider the size of release that the method can detect and the frequency and reliability of detection.

(4) Record keeping for release detection. Owners and operators must maintain release detection records according to the recordkeeping requirements in subrule 135.5(6).

e. Applicability of closure requirements to previously closed UST systems. When directed by the department, the owner and operator of a UST system with field-constructed tanks or airport hydrant system permanently closed before June 23, 2021, must assess the excavation zone and close the UST system in accordance with rule 567—135.15(455B) if releases from the UST may, in the judgment of the department, pose a current or potential threat to human health and the environment.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

Appendix A - Tier 1 Table, Assumptions, Equations and Parameter Values

Iowa Tier 1 Look-Up Table

Media	Exposure Pathway	Receptor	Group 1				Group 2: TEH	
			Benzene	Toluene	Ethylbenzene	Xylenes	Diesel*	Waste Oil
Groundwater (µg/L)	Groundwater Ingestion	Actual	5	1,000	700	10,000	1,200	400
		Potential	290	7,300	3,700	73,000	75,000	40,000
	Groundwater Vapor to Enclosed Space	All	1,540	20,190	46,000	NA	2,200,000	NA
	Groundwater to Water Line	PVC or Gasketed Mains	7,500	6,250	40,000	48,000	75,000	40,000
		PVC or Gasketed Service Lines	3,750	3,120	20,000	24,000	75,000	40,000
		PE/PB/AC Mains or Service Lines	200	3,120	3,400	19,000	75,000	40,000
	Surface Water	All	290	1,000	3,700	73,000	75,000	40,000
Soil (mg/kg)	Soil Leaching to Groundwater	All	0.54	42	15	NA	3,800	NA
	Soil Vapor to Enclosed Space	All	1.16	48	79	NA	47,500	NA
	Soil to Water Line	All	2.0	3.2	45	52	10,500	NA

NA: Not applicable. There are no limits for the chemical for the pathway, because for groundwater pathways the concentration for the designated risk would be greater than the solubility of the pure chemical in water, and for soil pathways the concentration for the designated risk would be greater than the soil concentration if pure chemical were present in the soil.

TEH: Total Extractable Hydrocarbons. The TEH value is based on risks from naphthalene, benzo(a)pyrene, benz(a)anthracene, and chrysene. Refer to Appendix B for further details.

Diesel*: Standards in the Diesel column apply to all low volatile petroleum hydrocarbons except waste oil.

Assumptions Used for Iowa Tier 1 Look-Up Table Generation

1. Groundwater ingestion pathway. The maximum contaminant levels (MCLs) were used for Group 1 chemicals. The target risk for carcinogens for actual receptors is 10^{-6} and for potential receptors is 10^{-4} . A hazard quotient of one, and residential exposure and building parameters are assumed.
2. Groundwater vapor to enclosed space pathway. Residential exposure and residential building parameters are assumed; no inhalation reference dose is used for benzene; the capillary fringe is assumed to be the source of groundwater vapor; and the hazard quotient is 1 and target risk for carcinogens is 1×10^{-4} .
3. Groundwater to water line. This pathway uses the same assumptions as the groundwater ingestion pathway for potential receptors, including a target risk for carcinogens of 10^{-4} .
4. Surface water. This pathway uses the same assumptions as the groundwater ingestion pathway for potential receptors, including a target risk for carcinogens of 10^{-4} , except for toluene which has a chronic level for aquatic life of 1,000 as in the definition for surface water criteria in 567—135.2(455B).
5. Soil leaching to groundwater. This pathway assumes the groundwater will be protected to the same levels as the groundwater ingestion pathway for potential receptors, using residential exposure and a target risk for carcinogens of 10^{-4} .
6. Soil vapor to enclosed space pathway. The target risk for carcinogens is 1×10^{-4} ; the hazard quotient is 1; no inhalation reference dose is used for benzene; residential exposure factors are assumed; and the average of the residential and nonresidential building parameters is assumed.
7. Soil to water line pathway. This pathway uses the soil leaching to groundwater model with nonresidential exposure and a target risk for carcinogens of 10^{-4} .

In addition to these assumptions, the equations and parameter values used to generate the Iowa Tier 1 Look-Up Table are described below.

Groundwater Ingestion Equations

Carcinogens:

$$RBSL_w \left[\frac{\text{mg}}{\text{L} - \text{H}_2\text{O}} \right] = \frac{TR \times BW \times AT_c \times \frac{365 \text{ days}}{\text{year}}}{SF_0 \times IR_w \times EF \times ED}$$

Noncarcinogens:

$$RBSL_w \left[\frac{\text{mg}}{\text{L} - \text{H}_2\text{O}} \right] = \frac{THQ \times RfD_0 \times BW \times AT_n \times \frac{365 \text{ days}}{\text{year}}}{IR_w \times EF \times ED}$$

Soil Leaching to Groundwater Equations

$$RBSL_{sl} \left[\frac{\text{mg}}{\text{kg} - \text{soil}} \right] = \frac{RBSL_w \left[\frac{\text{mg}}{\text{L} - \text{H}_2\text{O}} \right]}{LF}$$

$$LF \left[\frac{\text{mg/L} - \text{H}_2\text{O}}{\text{mg/kg} - \text{soil}} \right] = \frac{\rho_s}{(\theta_{ws} + k_s \rho_s + H \theta_{as}) \left(1 + \frac{U \delta}{IW} \right)}$$

Soil Vapor to Enclosed Space Equations

$$RBSL_{sv} \left[\frac{\text{mg}}{\text{kg} - \text{soil}} \right] = \frac{RBSL_{air} \left[\frac{\mu\text{g}}{\text{m}^3 - \text{air}} \right]}{VF_{sv}} \left(\frac{\text{mg}}{1000 \mu\text{g}} \right)$$

$$VF_{sv} \left[\frac{(\text{mg}/\text{m}^3 - \text{air})}{(\text{mg}/\text{kg} - \text{soil})} \right] = \frac{\frac{H\rho_s}{(\theta_{ws} + k_s\rho_s + H\theta_{as})} \left[\frac{D_s^{\text{eff}}/L_s}{ER L_B} \right]}{1 + \left[\frac{D_s^{\text{eff}}/L_s}{ER L_B} \right] + \left[\frac{D_{\text{crack}}^{\text{eff}}/L_{\text{crack}}}{\eta} \right]} \left(10^3 \frac{\text{cm}^3 - \text{kg}}{\text{m}^3 - \text{g}} \right)$$

$$D_{\text{crack}}^{\text{eff}} \left[\frac{\text{cm}^2}{\text{s}} \right] = D_{\text{air}} \frac{\theta_{\text{acrack}}^{3.33}}{\theta_T^2} + D_{\text{wat}} \frac{1}{H} \frac{\theta_{\text{wcrack}}^{3.33}}{\theta_T^2}$$

$$D_s^{\text{eff}} \left[\frac{\text{cm}^2}{\text{s}} \right] = D_{\text{air}} \frac{\theta_{\text{as}}^{3.33}}{\theta_T^2} + D_{\text{wat}} \frac{1}{H} \frac{\theta_{\text{ws}}^{3.33}}{\theta_T^2}$$

Indoor Air Inhalation Equations

Carcinogens:

$$RBSL_{air} \left[\frac{\mu g}{m^3 - air} \right] = \frac{TR \times BW \times AT_c \times \frac{365 \text{ days}}{\text{year}} \times \frac{1000 \mu g}{mg}}{SF_i \times IR_{air} \times EF \times ED}$$

Noncarcinogens:

$$RBSL_{air} \left[\frac{\mu g}{m^3 - air} \right] = \frac{THQ \times RfD_i \times BW \times AT_n \times \frac{365 \text{ kdays}}{\text{year}} \times \frac{1000 \mu g}{mg}}{IR_{air} \times EF \times ED}$$

Groundwater Vapor to Enclosed Space Equations

$$RBSL_{gw} \left[\frac{mg}{L - H_2O} \right] = \frac{RBSL_{air} \left[\frac{\mu g}{m^3 - air} \right]}{VF_{gw}} \left(\frac{mg}{1000 \mu g} \right)$$

$$VF_{gw} \left[\frac{(mg/m^3 - air)}{(mg/L - H_2O)} \right] = \frac{H \left[\frac{D_s^{eff}/L_{gw}}{ER L_B} \right]}{1 + \left[\frac{D_s^{eff}/L_{gw}}{ER L_B} \right] + \left[\frac{D_s^{eff}/L_{gw}}{(D_{crack}^{eff}/L_{crack})^\eta} \right]} \left(\frac{10^3 L}{m^3} \right)$$

Variable Definitions

δ	groundwater mixing zone thickness (cm)
η	areal fraction of cracks in foundation/wall ($\text{cm}^2\text{-cracks}/\text{cm}^2\text{-area}$)
ρ_s	soil bulk density (g/cm^3)
θ_{acrack}	volumetric air content in foundation/wall cracks ($\text{cm}^3\text{-air}/\text{cm}^3\text{-soil}$)
θ_{as}	volumetric air content in vadose zone ($\text{cm}^3\text{-air}/\text{cm}^3\text{-soil}$)
θ_T	total soil porosity ($\text{cm}^3\text{-voids}/\text{cm}^3\text{-soil}$)
θ_{wcrack}	volumetric water content in foundation/wall cracks ($\text{cm}^3\text{-H}_2\text{O}/\text{cm}^3\text{-soil}$)
θ_{ws}	volumetric water content in vadose zone ($\text{cm}^3\text{-H}_2\text{O}/\text{cm}^3\text{-soil}$)
AT_c	averaging time for carcinogens (years)
AT_n	averaging time for noncarcinogens (years)
BW	body weight (kg)
D^{air}	chemical diffusion coefficient in air (cm^2/s)
D^{wat}	chemical diffusion coefficient in water (cm^2/s)
$D^{\text{eff}}_{\text{crack}}$	effective diffusion coefficient through foundation cracks (cm^2/s)
D^{eff}_s	effective diffusion coefficient in soil based on vapor-phase concentration (cm^2/s)
ED	exposure duration (years)
EF	exposure frequency (days/year)
ER	enclosed space air exchange rate (s^{-1})
f_{oc}	fraction organic carbon in the soil ($\text{kg-C}/\text{kg-soil}$)
H	henry's law constant ($\text{L-H}_2\text{O}/(\text{L-air})$)
i	groundwater head gradient (cm/cm)
I	infiltration rate of water through soil (cm/year)
IR_{air}	daily indoor inhalation rate (m^3/day)
IR_w	daily water ingestion rate (L/day)
K	hydraulic conductivity (cm/year)
K_{oc}	carbon-water sorption coefficient ($\text{L-H}_2\text{O}/\text{kg-C}$)
k_s	soil-water sorption coefficient ($\text{L-H}_2\text{O}/\text{kg-soil}$), $f_{\text{oc}} \times K_{\text{oc}}$
L_B	enclosed space volume/infiltration area ratio (cm)
L_{crack}	enclosed space foundation or wall thickness (cm)
LF	leaching factor from soil to groundwater ($(\text{mg}/\text{L-H}_2\text{O})/(\text{mg}/\text{kg-soil})$)
L_{gw}	depth to groundwater from the enclosed space foundation (cm)
L_s	depth to subsurface soil sources from the enclosed space foundation (cm)
RBSL_{air}	Risk-Based Screening Level for indoor air ($\mu\text{g}/\text{m}^3\text{-air}$)
RBSL_{gw}	Risk-Based Screening Level for vapor from groundwater to enclosed space air inhalation ($\text{mg}/\text{L-H}_2\text{O}$)
RBSL_{sl}	Risk-Based Screening Level for soil leaching to groundwater ($\text{mg}/\text{kg-soil}$)
RBSL_{sv}	Risk-Based Screening Level for vapors from soil to enclosed space air inhalation ($\text{mg}/\text{kg-soil}$)
RBSL_w	Risk-Based Screening Level for groundwater ingestion ($\text{mg}/\text{L-H}_2\text{O}$)
RfD_i	inhalation chronic reference dose ($(\text{mg})/(\text{kg-day})$)
RfD_o	oral chronic reference dose ($(\text{mg})/(\text{kg-day})$)
SF_i	inhalation cancer slope factor ($(\text{kg-day})/\text{mg}$)
SF_o	oral cancer slope factor ($(\text{kg-day})/\text{mg}$)
THQ	target hazard quotient for individual constituents (unitless)
TR	target excess individual lifetime cancer risk (unitless)
U	groundwater Darcy velocity (cm/year), $U=Ki$
VF_{gw}	volatilization factor for vapors from groundwater to enclosed space ($(\text{mg}/\text{m}^3\text{-air})/(\text{mg}/\text{L-H}_2\text{O})$)
VF_{sv}	volatilization factor for vapors from soil to enclosed space ($(\text{mg}/\text{m}^3\text{-air})/(\text{mg}/\text{kg-soil})$)
W	width of soil source area parallel to groundwater flow direction (cm)

Soil and Groundwater Parameter Values Used for Iowa Tier 1 Table Generation

Parameter	Iowa Tier 1 Table Value
K	hydraulic conductivity 16060 cm/year
i	groundwater head gradient 0.01 cm/cm

Parameter		Iowa Tier 1 Table Value
W	width of soil source area parallel to groundwater flow direction	1500 cm
I	infiltration rate of water through soil	7 cm/year
δ	groundwater mixing zone thickness	200 cm
ρ_s	soil bulk density	1.86 g/cm ³
θ_{as}	volumetric air content in vadose zone	0.2 cm ³ -air/cm ³ -soil
θ_{ws}	volumetric water content in vadose zone	0.1 cm ³ -H ₂ O/cm ³ -soil
θ_{acrack}	volumetric air content in foundation/wall cracks	0.2 cm ³ -air/cm ³ -soil
θ_{wcrack}	volumetric water content in foundation/wall cracks	0.1 cm ³ -H ₂ O/cm ³ -soil
θ_T	total soil porosity	0.3 cm ³ -voids/cm ³ -soil
f_{oc}	fraction organic carbon in the soil	0.01 kg-C/kg-soil
L_s	depth to subsurface soil sources from the enclosed space foundation	1 cm
L_{gw}	depth to groundwater from the enclosed space foundation	1 cm

Exposure Factors Used in Iowa Tier 1 Table Generation

Parameter		Residential	Nonresidential
AT _c (years)	averaging time for carcinogens	70	70
AT _n (years)	averaging time for noncarcinogens	30	25
BW (kg)	body weight	70	70
ED (years)	exposure duration	30	25
EF (days/year)	exposure frequency	350	250
IR _{air} (m ³ /day)	daily indoor inhalation rate	15	20
IR _w (L/day)	daily water ingestion rate	2	1
THQ (unitless)	target hazard quotient for individual constituents	1.0	1.0

Building Parameters Used in Iowa Tier 1 Table Generation

Parameter		Residential	Nonresidential
ER (s ⁻¹)	enclosed space air exchange rate	0.00014	0.00023
L _B (cm)	enclosed space volume/infiltration area ratio	200	300
L _{crack} (cm)	enclosed space foundation or wall thickness	15	15
η	areal fraction of cracks in foundation/wall	0.01	0.01

Chemical-Specific Parameter Values Used for Iowa Tier 1 Table Generation

Chemical	D ^{air} (cm ² /s)	D ^{wat} (cm ² /s)	H (L-air/L-water)	log(K _{oc}), L/kg
Benzene	0.093	1.1e-5	0.22	1.58
Toluene	0.085	9.4e-6	0.26	2.13
Ethylbenzene	0.076	8.5e-6	0.32	1.98
Xylenes	0.072	8.5e-6	0.29	2.38
Naphthalene	0.072	9.4e-6	0.049	3.11
Benzo(a)pyrene	0.050	5.8e-6	5.8e-8	5.59
Benz(a)anthracene	0.05	9.0e-6	5.74e-7	6.14
Chrysene	0.025	6.2e-6	4.9e-7	5.30

Saturation Values Used to Determine “NA” for the Iowa Tier 1 Table

Chemical	Solubility in Water (mg/L) S	Saturation in Soil (mg/kg) C _s ^{sat}
Benzene	1,750	801
Toluene	535	765
Ethylbenzene	152	159
Xylenes	198	492
Naphthalene	31	401
Benzo(a)pyrene	0.0012	4.69
Benz(a)anthracene	0.014	193.3
Chrysene	0.0028	5.59

The maximum solubility of the pure chemical in water is listed in the table above. The equation below is used to calculate the soil concentration (C_s^{sat}) at which dissolved pore-water and vapor phases become saturated. Tier 1 default values are used in the equation. “NA” (for not applicable) is used in the Tier 1 table when the risk-based value exceeds maximum solubility for water (S) or maximum saturation for soil (C_s^{sat}).

$$C_s^{\text{sat}}(\text{mg/kg-soil}) = S/\rho_s \times (H\theta_{\text{as}} + \theta_{\text{ws}} + k_s \rho_s)$$

Slope Factors and Reference Doses Used for Iowa Tier 1 Table Generation

Chemical	SF _i ((kg-day)/mg)	SF _o ((kg-day)/mg)	RfD _i (mg/(kg-day))	RfD _o (mg/(kg-day))
Benzene	0.029	0.029	----	----
Toluene	----	----	0.114	0.2
Ethylbenzene	----	----	0.286	0.1
Xylenes	----	----	2.0	2.0
Naphthalene	----	----	0.004	0.004
Benzo(a)pyrene	6.1	7.3	----	----
Benz(a)anthracene	0.61	0.73	----	----
Chrysene	0.061	0.073	----	----

[ARC 9011B, IAB 8/25/10, effective 9/29/10]

Appendix B – Tier 2 Equations and Parameter Values (Revised Model)

All Tier 1 equations and parameters apply at Tier 2 except as specified below.

Equation for Tier 2 Groundwater Contaminant Transport Model

Equation (1)

$$C(x) = C_s \exp\left(\frac{x_m}{2\alpha_x} \left[1 - \sqrt{1 + \frac{4\lambda\alpha_x}{u}}\right]\right) \operatorname{erf}\left(\frac{S_w}{4\sqrt{\alpha_y x_m}}\right) \operatorname{erf}\left(\frac{S_d}{4\sqrt{\alpha_z x_m}}\right)$$

Equation (2)

Where $x_m = ax + bxc$

The value of X_m is computed from Equation (2), where the values for a, b and c in Equation (2) are given in Table 1.

Table 1. Parameter Values for Equation (2)

Chemical	a	b	c
Benzene	1	0.000000227987	3.929438689
Toluene	1	0.000030701	3.133842393
Ethylbenzene	1	0.0001	2.8
Xylenes	1	0.0	0.0
TEH-Diesel	1	0.000000565	3.625804634
TEH-Waste Oil	1	0.000000565	3.625804634
Naphthalene	1	0	0

Variable definitions

x: distance in the x direction downgradient from the source

$\operatorname{erf}()$: the error function

$C(x)$: chemical concentration in groundwater at x

C_s : Source concentration in groundwater (groundwater concentration at $x=0$)

S_w : width of the source (perpendicular to x)

S_d : vertical thickness of the source

u: groundwater velocity (pore water velocity); $u=Ki/\theta_e$

K: hydraulic conductivity

i: groundwater head gradient

θ_e : effective porosity

λ : first order decay coefficient, chemical specific

$\alpha_x, \alpha_y, \alpha_z$: dispersivities in the x, y and z directions, respectively

For the following lists of parameters, one of three is required: site-specific measurements, defaults or the option of either (which means the default may be used or replaced with a site-specific measurement).

Soil parameters

Parameter	Default Value	Required
ρ_s soil bulk density	1.86 g/cm ³	option
f_{oc} fraction organic carbon in the soil	0.01 kg-C/kg-soil	option
θ_T total soil porosity	0.3cm ³ -voids/cm ³ -soil	option
θ_{as} volumetric air content in vadose zone	0.2cm ³ -air/cm ³ -soil	default
θ_{ws} volumetric water content in vadose zone	0.1cm ³ -H ₂ O/cm ³ -soil	default

Parameter		Default Value	Required
θ_{crack}	volumetric air content in foundation/wall cracks	0.2cm ³ -air/cm ³ -soil	default
I	infiltration rate of water through soil	7 cm/year	default

If the total porosity is measured, assume 1/3 is air filled and 2/3 is water filled for determining the water and air fraction in the vadose zone soil and floor cracks.

Groundwater Transport Modeling Parameters

Parameter		Default Value	Required
K	hydraulic conductivity	16060 cm/year	site-specific
i	groundwater head gradient	0.01 cm/cm	site-specific
S_w	width of the source	use procedure specified in 135.10(2)	site-specific
S_d	vertical thickness of the source	3 m	default
α_x	dispersivity in the x direction	0.1x	default
α_y	dispersivity in the y direction	0.33 α_x	default
α_z	dispersivity in the z direction	0.05 α_x	default
θ_e	effective porosity	0.1	default

where $u=Ki/\theta_e$

First-order Decay Coefficients

Chemical	Default Value λ (d ⁻¹)	Required
Benzene	0.000127441	default
Toluene	0.0000208066	default
Ethylbenzene	0.0	default
Xylenes	0.0005	default
Naphthalene	0.00013	default
TEH-Diesel	0.0000554955	default
TEH-Waste Oil	0.0000554955	default

Other Parameters for Groundwater Vapor to Enclosed Space

Parameter		Default Value	Required
L_{gw}	depth to groundwater from the enclosed space foundation	1 cm	option
L_B	enclosed space volume/infiltration area ratio	200 cm	option
ER (s ⁻¹)	enclosed space air exchange rate	0.00014	default
L_{crack}	enclosed space foundation or wall thickness	15 cm	default
η	areal fraction of cracks in foundation/wall	0.01	default

Other Parameters for Soil Vapor to Enclosed Space

Parameter		Default Value	Required
L_s	depth to subsurface soil sources from the enclosed space foundation	1 cm	option
L_B	enclosed space volume/infiltration area ratio	250 cm *	option
ER (s ⁻¹)	enclosed space air exchange rate	0.000185 *	default
L_{crack}	enclosed space foundation or wall thickness	15 cm	default
η	areal fraction of cracks in foundation/wall	0.01	default

*These values are an average of residential and nonresidential factors.

Soil Leaching to Groundwater

Parameter		Default Value	Required
δ	groundwater mixing zone	2 m	default

Building Parameters for Iowa Tier 2

Parameter		Residential	Nonresidential
ER (s-1)	enclosed space air exchange rate	0.00014	0.00023
L_B	enclosed space volume/infiltration area ratio	200 cm	300 cm

Other Parameters

For Tier 2, the following are the same as Tier 1 values (refer to Appendix A): chemical-specific parameters, slope factors and reference doses, and exposure factors (except for those listed below).

Exposure Factors for Tier 2 Groundwater Vapor to Enclosed Space Modeling:

Potential Residential: use residential exposure and residential building parameters.

Potential Nonresidential: use nonresidential exposure and nonresidential building parameters.

Diesel and Waste Oil

Diesel and Waste Oil			Chemical-Specific Values for Tier 1			
Media	Exposure Pathway	Receptor	Naphthalene	Benzo(a) pyrene	Benz(a) anthracene	Chrysene
Groundwater (ug/L)	Groundwater Ingestion	actual	150	0.012	0.12	1.2
		potential	150	1.2	12.0	NA
	Groundwater Vapor to Enclosed Space	all	4,440	NA	NA	NA
	Groundwater to Water Line	all	150	1.2	12.0	NA
	Surface Water	all	150	1.2	12.0	NA
Soil (mg/kg)	Soil Leaching to Groundwater	all	7.6	NA	NA	NA
	Soil Vapor to Enclosed Space	all	95	NA	NA	NA
	Soil to Water Line	all	21	NA	NA	NA

Due to difficulties with analytical methods for the four individual chemicals listed in the above table, Total Extractable Hydrocarbon (TEH) default values were calculated for each chemical, using the assumption that diesel contains 0.2% naphthalene, 0.001% benzo(a)pyrene, 0.001% benz(a)anthracene, and 0.001% chrysene. Resulting TEH Default Values are shown in the following table.

Diesel			TEH Default Values			
Media	Exposure Pathway	Receptor	Naphthalene	Benzo(a)pyrene	Benz(a)anthracene	Chrysene
Groundwater (ug/L)	Groundwater Ingestion	actual	75,000	1,200	12,000	120,000
		potential	75,000	120,000	1,200,000	NA
	Groundwater Vapor to Enclosed Space	all	2,200,000	NA	NA	NA
	Groundwater to Water Line	all	75,000	120,000	1,200,000	NA
	Surface Water	all	75,000	120,000	1,200,000	NA
Soil (mg/kg)	Soil Leaching to Groundwater	all	3,800	NA	NA	NA
	Soil Vapor to Enclosed Space	all	47,500	NA	NA	NA
	Soil to Water Line	all	10,500	NA	NA	NA

The lowest TEH default value for each pathway (shown as a shaded box) was used in the Tier 1 Table.

Due to difficulties with analytical methods for the four individual chemicals, Total Extractable Hydrocarbon (TEH) default values were calculated for each chemical, using the assumption that waste oil contains no naphthalene, 0.003% benzo(a)pyrene, 0.003% benz(a)anthracene, and 0.003% chrysene. Resulting TEH Default Values are shown in the following table.

Waste Oil			TEH Default Values			
Media	Exposure Pathway	Receptor	Naphthalene	Benzo(a)pyrene	Benz(a)anthracene	Chrysene
Groundwater (ug/L)	Groundwater Ingestion	actual	NA	400	4,000	40,000
		potential	NA	40,000	400,000	NA
Groundwater (ug/L)	Groundwater Vapor to Enclosed Space	all	NA	NA	NA	NA
	Groundwater to Water Line	all	NA	40,000	400,000	NA
	Surface Water	all	NA	40,000	400,000	NA
Soil (mg/kg)	Soil Leaching to Groundwater	all	NA	NA	NA	NA
	Soil Vapor to Enclosed Space	all	NA	NA	NA	NA
	Soil to Water Line	all	NA	NA	NA	NA

The lowest TEH default value for each pathway (shown as a shaded box) was used in the Tier 1 Table.

Water Line Calculations

**Explanation of Target Levels for
Petroleum Fuel-Derived BTEX Compounds in Groundwater and Soil**

GROUNDWATERPVC or Gasketed Mains*Benzene: 7,500 µg/L*

Gasoline-saturated groundwater was considered to be an extreme condition of environmental contamination, and it was considered unacceptable to leave water lines, regardless of material, in contact with this level of benzene contamination. While Ong et al.(2008) showed that gasoline-saturated groundwater would not pose a significant risk of permeation exceeding the 5 µg/L MCL for benzene of gasketed DI or PVC water mains, a safety factor of 1/8th was applied to the level of benzene in premium gasoline-saturated water determined by Ong et al. (2008). A 1/2 safety factor was compounded for each of four potential safety risks: material defects in the pipe (= 1/2), presence of service line taps (= 1/4), stagnation of water (= 1/6), and water line breaks (= 1/8). This was an average of 67.5 mg/L ± 4.9 mg/L for multiple preparations of gasoline-saturated water and was rounded to 60.0 mg/L to conservatively account for the statistical uncertainty. Hence,

$$\text{Target Level} = \frac{1}{8} \times 60,000 \text{ µg/L} = 7,500 \text{ µg/L benzene}$$

Toluene: 6,250 µg/L

The target level for toluene was determined similarly to that for benzene. The level of toluene in premium gasoline-saturated water was determined by Ong et al.(2008) to be 56.2 mg/L ± 4.9 mg/L and conservatively rounded to 50.0 mg/L. Hence,

$$\text{Target Level} = \frac{1}{8} \times 50,000 \text{ µg/L} = 6,250 \text{ µg/L toluene}$$

Ethylbenzene: 40,000 µg/L

The target level was set to be double that for PVC or Gasketed Service Lines (20,000 µg/L – see below).

Total Xylenes: 48,000 µg/L

The target level was set to be double that for PVC or Gasketed Service Lines (24,000 µg/L – see below).

PVC or Gasketed Service Lines*Benzene: 3,750 µg/L*

The target level was set to be one-half of that for PVC or Gasketed Mains (7,500 µg/L as above) since service lines tend to be of higher risk than mains owing to their smaller diameter and greater potential for stagnation.

Toluene: 3,120 µg/L

Similar to benzene, the target level was set to be one-half of that for PVC or Gasketed Mains (6,250 µg/L as above) since service lines tend to be of higher risk than mains owing to their smaller diameter and greater potential for stagnation. Odd-even rounding to 3 significant figures was applied.

Ethylbenzene: 20,000 µg/L

The target level was based on two observations by Ong et al. (2008): (1) premium gasoline-saturated water has an average concentration of 3.4 mg/L ethylbenzene and (2) ethylene permeates high density polyethylene 46 times slower than does benzene (presumably, this is reasonably representative of other materials such as rubber gaskets). The 1/8 safety factor was also applied, as above. Odd-even rounding to 2 significant figures was applied. Hence:

$$\text{Target Level} = 3,400 \mu\text{g/L} \times 46 \times \frac{1}{8} = 19,550 \mu\text{g/L} = 20,000 \mu\text{g/L}$$

Total Xylenes: 24,000 µg/L

Similar to ethylbenzene, the target level was based on (1) premium gasoline-saturated water has an average concentration of 19 mg/L total xylenes and (2) total xylenes permeate high density polyethylene 10 times slower than does benzene. The 1/8 safety factor was also applied, as above. Odd-even rounding to 2 significant figures was applied. Hence:

$$\text{Target Level} = 19,000 \mu\text{g/L} \times 10 \times \frac{1}{8} = 23,750 \mu\text{g/L} = 24,000 \mu\text{g/L}$$

PE/PB/AC

Benzene: 200 µg/L

The target level was set at the concentration of benzene in groundwater surrounding a 1" HDPE service line (SIDR 9 IPS) that would result in a concentration of 2 µg/L benzene in the service line after a 24 hr stagnation period. This level was chosen because 2 µg/L is generally the minimum reportable concentration of benzene in laboratory reports received by the department.

The permeation rate is a function of the concentration of benzene in the groundwater as described by Ong et al. (2008), equation 3.4a:

$$P_m = 0.0079 C_{bulk}^{1.1323}$$

where P_m is the benzene permeation rate in $\mu\text{g}/\text{cm}^2/\text{day}$ through the pipe described above (cm^2 refers to the inner surface of the pipe) and C_{bulk} is the concentration of benzene in the groundwater (mg/L).

For any length of exposed 1" SIDR 9 IPS pipe, l (cm), the concentration in the pipe after 24 hr stagnation, C_{24hr} ($\mu\text{g}/\text{L}$), can be computed from P_m and the ratio of the inner surface of the pipe to the internal volume:

$$C_{24hr} = P_m \times \left(\frac{2\pi r l}{\pi r^2 l / 1000} \right) = 0.0079 C_{bulk}^{1.1323} \times \frac{2000}{r}$$

where r is the inside radius of the pipe (cm), l is the length of exposed pipe (cm), and dividing by 1000 converts from cm^3 to liters (and, therefore, $2000/r$ converts $\mu\text{g}/\text{cm}^2/\text{day}$ to $\mu\text{g}/\text{L}/\text{day}$).

Solving for C_{bulk} (mg/L) with $C_{24hr} = 2 \mu\text{g}/\text{L}$ and $r = 1.28 \text{ cm}$ (per manufacturer's specifications):

$$C_{bulk}^{1.1323} = \frac{2 \times 1.28}{0.0079 \times 2000}$$

and

$$C_{bulk} = \sqrt[1.1323]{0.162} = 0.200 \text{ mg/L} = 200 \mu\text{g/L}$$

While the target level is expressed as 200 µg/L for clarity, the underlying data support only two significant figures. In a stricter treatment of the data, this would be expressed as $20 \times 10^1 \mu\text{g}/\text{L}$.

Toluene: 3,120 µg/L

The target level was set to be equal to that for PVC or Gasketed Service Lines. Calculations similar to those used above for benzene (Ong et al. (2008), equation 3.4b) indicate that 3,120 µg/L toluene in groundwater would result in 50 µg/L inside a 1" SIDR 9 IPS HDPE pipe after 24 hours of stagnation, which is 1/20th of the 1,000 µg/L MCL for toluene.

Ethylbenzene: 3,400 µg/L

The target level was set to be equal to the concentration of ethylbenzene in premium gasoline-saturated water (see discussion above for PVC or Gasketed Mains/Benzene). Unlike other target levels based on contaminant concentrations in gasoline-saturated water, the 1/8th safety factor was not applied because of the very low permeation rate of ethylbenzene through HDPE, the relatively low solubility of ethylbenzene in water, and the relatively high MCL (700 µg/L). Ong et al. (2008) found that permeation of HDPE by aqueous ethylbenzene was minimal and of no consequence for public health.

Total Xylenes: 19,000 µg/L

The target level was set to be equal to the concentration of ethylbenzene in premium gasoline-saturated water following the same reasoning for ethylbenzene (above). The permeation rate and water solubility are also very low, and the MCL is 10,000 µg/L. Ong et al. (2008) found that permeation of HDPE by aqueous xylenes was minimal and of no consequence for public health.

SOIL

Target levels for soil were set to be the same for mains and service lines of any material discussed above under "Groundwater." The underlying data support two significant figures for target levels in soil. Odd-even rounding was applied where appropriate.

Benzene: 2.0 mg/Kg

The target level was derived from the concentration of benzene (mg/Kg) that would result if soil that was 10% moisture and 1% organic matter was equilibrated with premium gasoline-saturated water (60 mg/L benzene – as per discussion of PVC or Gasketed Mains/Benzene above). The equilibrium concentration in soil was calculated using the approach of Chiou et al. (1983). The 1/8th safety factor discussed previously for groundwater was applied. Accordingly:

$$C_T = C_W K_d + C_W \theta$$

where C_T is the total concentration of benzene in soil (mg/Kg), θ is the fraction of moisture in the soil (Kg/Kg), and K_d is the partition coefficient from water to soil (L/Kg). Further:

$$K_d = K_{om} f_{om}$$

where K_{om} is the partition coefficient from water to organic matter in the soil, which is 16.8 L/Kg for benzene in soils with naturally occurring organic matter (Chiou et al. (1983)), and f_{om} is the fraction of organic matter in the dry soil (Kg/Kg).

For soil containing 1% naturally occurring organic matter and 10% moisture, the total concentration of benzene upon exposure to premium gasoline-saturated groundwater (60 mg/L benzene, as per above discussion of PVC or Gasketed Mains) would be:

$$C_T = \left(\frac{60 \text{ mg}}{\text{L}} \times \left(\frac{16.8 \text{ L}}{\text{Kg}} \times \frac{0.01 \text{ Kg}}{\text{Kg}} \right) \right) + \left(\frac{60 \text{ mg}}{\text{L}} \times \frac{0.1 \text{ Kg}}{\text{Kg}} \right) = \frac{16 \text{ mg}}{\text{Kg}}$$

Applying the 1/8th safety factor:

$$\text{Target Level} = \frac{1}{8} \times \frac{16 \text{ mg}}{\text{Kg}} = \frac{2.0 \text{ mg}}{\text{Kg}}$$

Toluene: 3.2 mg/Kg

The target level was derived in the same manner as for benzene except that the concentration of toluene in premium gasoline-saturated water is 50 mg/L and K_{om} is 42 L/Kg. Accordingly:

$$C_T = \left(\frac{50 \text{ mg}}{\text{L}} \times \left(\frac{42 \text{ L}}{\text{Kg}} \times \frac{0.01 \text{ Kg}}{\text{Kg}} \right) \right) + \left(\frac{50 \text{ mg}}{\text{L}} \times \frac{0.1 \text{ Kg}}{\text{Kg}} \right) = \frac{26 \text{ mg}}{\text{Kg}}$$

and

$$\text{Target Level} = \frac{1}{8} \times \frac{26 \text{ mg}}{\text{Kg}} = \frac{3.2 \text{ mg}}{\text{Kg}}$$

Ethylbenzene: 45 mg/Kg

The target level was based on the target level set for Groundwater/PVC or Gasketed Mains (40,000 µg/L, rounded from 39,100 µg/L, or 39.1 mg/L) and the principles of Chiou et al. (1983) discussed above. In a manner similar to that for benzene in soil, C_W was 3.4 mg/L, K_d was 0.106 L/Kg, and C_T was calculated to be 3.9 mg/Kg. The target level for soil that is equivalent to the target level set for groundwater was calculated as follows:

$$\text{Target Level mg/Kg} = 39.1 \text{ mg/L} \times \frac{3.9 \text{ mg/Kg}}{3.4 \text{ mg/L}} = 45 \text{ mg/Kg}$$

Total Xylenes: 52 mg/Kg

The target level was set in the same manner as for ethylbenzene (above), based on the groundwater target level of 48,000 µg/L (rounded from 47.5 mg/L). C_W was 19 mg/L, K_d was 1.001 L/Kg (assuming a mixture of m-, o-, and p-xylenes which is 60%, 20%, and 20%, respectively, which is typical of xylenes derived from petroleum), and C_T was calculated to be 21 mg/Kg. Hence:

$$\text{Target Level mg/Kg} = 47.5 \text{ mg/L} \times \frac{21 \text{ mg/Kg}}{19 \text{ mg/L}} = 52 \text{ mg/Kg}$$

NOTE: The 1/8th safety factor was applied above to the target levels for ethylbenzene and total xylenes for Groundwater, PVC or Gasketed Service Lines, thence the target levels for Groundwater, PVC or Gasketed Mains, were derived. Consequently, the 1/8th safety factor has also been applied to the target levels for both ethylbenzene and total xylenes in soil.

REFERENCES

- Chiou, C. T., P. E. Porter and D. W. Schmedding. 1983. Partition equilibria of nonionic organic compounds between soil organic matter and water. *Environ. Sci. Technol.*, 17(4)227-231.
- Ong, S. K., J. A. Gaunt, F. Mao, C. L. Cheng, L. Esteve-Agelet, and C. R. Hurburgh. 2008. Impact of hydrocarbons on PE/PVC pipes and pipe gaskets, Publication 91204. Awwa Research Foundation (presently Water Research Foundation), Denver, CO.

Appendix B-1 – Tier 2 Equations and Parameter Values (Old Model)

All Tier 1 equations and parameters apply at Tier 2 except as specified below.

Equation for Tier 2 Groundwater Contaminant Transport Model

$$C(x) = C_s \exp \left(\frac{x}{2\alpha_x} \left[1 - \sqrt{1 + \frac{4\lambda\alpha_x}{u}} \right] \right) \operatorname{erf} \left(\frac{S_w}{4\sqrt{\alpha_y x}} \right) \operatorname{erf} \left(\frac{S_d}{4\sqrt{\alpha_z x}} \right)$$

Variable definitions

x: distance in the x direction downgradient from the source

erf(): the error function

C(x): chemical concentration in groundwater at x

C_s: Source concentration in groundwater (groundwater concentration at x=0)

S_w: width of the source (perpendicular to x)

S_d: vertical thickness of the source

u: groundwater velocity (pore water velocity); $u = Ki/\theta_e$

K: hydraulic conductivity

i: groundwater head gradient

θ_e: effective porosity

λ: first-order decay coefficient, chemical specific

α_x, α_y, α_z: dispersivities in the x, y and z directions, respectively

For the following lists of parameters, one of three is required: site-specific measurements, defaults or the option of either (which means the default may be used or replaced with a site-specific measurement).

Soil parameters

Parameter		Default Value	Required
ρ _s	soil bulk density	1.86 g/cm ³	option
f _{oc}	fraction organic carbon in the soil	0.01 kg-C/kg-soil	option
θ _T	total soil porosity	0.3cm ³ -voids/cm ³ -soil	option
θ _{as}	volumetric air content in vadose zone	0.2cm ³ -air/cm ³ -soil	default
θ _{ws}	volumetric water content in vadose zone	0.1cm ³ -H ₂ O/cm ³ -soil	default
θ _{acrack}	volumetric air content in foundation/wall cracks	0.2cm ³ -air/cm ³ -soil	default
θ _{wcrack}	volumetric water content in foundation/wall cracks	0.1cm ³ -H ₂ O/cm ³ -soil	default
I	infiltration rate of water through soil	7 cm/year	default

If the total porosity is measured, assume 1/3 is air filled and 2/3 is water filled for determining the water and air fraction in the vadose zone soil and floor cracks.

Groundwater Transport Modeling Parameters

Parameter		Default Value	Required
K	hydraulic conductivity	16060 cm/year	site-specific

Parameter		Default Value	Required
i	groundwater head gradient	0.01 cm/cm	site-specific
S _w	width of the source	use procedure specified in 135.10(2)	site-specific
S _d	vertical thickness of the source	3 m	default
α _x	dispersivity in the x direction	0.1x	default
α _y	dispersivity in the y direction	0.33α _x	default
α _z	dispersivity in the z direction	0.05α _x	default
θ _e	effective porosity	0.1	default

where $u=Ki/\theta_e$

First-order Decay Coefficients

Chemical	Default Value λ (d-1)	Required
Benzene	0.0005	default
Toluene	0.0007	default
Ethylbenzene	0.00013	default
Xylenes	0.0005	default
Naphthalene	0.00013	default
Benzo(a)pyrene	0	default
Benz(a)anthracene	0	default
Chrysene	0	default

Other Parameters for Groundwater Vapor to Enclosed Space

Parameter		Default Value	Required
L _{gw}	depth to groundwater from the enclosed space foundation	1 cm	option
L _B	enclosed space volume/infiltration area ratio	200 cm	option
ER (s-1)	enclosed space air exchange rate	0.00014	default
L _{crack}	enclosed space foundation or wall thickness	15 cm	default
η	areal fraction of cracks in foundation/wall	0.01	default

Other Parameters for Soil Vapor to Enclosed Space

Parameter		Default Value	Required
L _s	depth to subsurface soil sources from the enclosed space foundation	1 cm	option
L _B	enclosed space volume/infiltration area ratio	250 cm *	option
ER (s-1)	enclosed space air exchange rate	0.000185 *	default
L _{crack}	enclosed space foundation or wall thickness	15 cm	default
η	areal fraction of cracks in foundation/wall	0.01	default

*These values are an average of residential and nonresidential factors.

Soil Leaching to Groundwater

Parameter		Default Value	Required
δ	groundwater mixing zone	2 m	default

Building Parameters for Iowa Tier 2

Parameter		Residential	Nonresidential
ER (s-1)	enclosed space air exchange rate	0.00014	0.00023
L _B	enclosed space volume/infiltration area ratio	200 cm	300 cm

Other Parameters

For Tier 2, the following are the same as Tier 1 values (refer to Appendix A): chemical-specific parameters, slope factors and reference doses, and exposure factors (except for those listed below).

Exposure Factors for Tier 2 Groundwater Vapor to Enclosed Space Modeling:

Potential Residential: use residential exposure and residential building parameters.

Potential Nonresidential: use nonresidential exposure and nonresidential building parameters.

Diesel and Waste Oil

Diesel and Waste Oil			Chemical-Specific Values for Tier 1			
Media	Exposure Pathway	Receptor	Naphthalene	Benzo(a)pyrene	Benz(a)anthracene	Chrysene
Groundwater (ug/L)	Groundwater Ingestion	actual	150	0.012	0.12	1.2
		potential	150	1.2	12.0	NA
	Groundwater Vapor to Enclosed Space	all	4,440	NA	NA	NA
	Groundwater to Plastic Water Line	all	150	1.2	12.0	NA
	Surface Water	all	150	1.2	12.0	NA
Soil (mg/kg)	Soil Leaching to Groundwater	all	7.6	NA	NA	NA
	Soil Vapor to Enclosed Space	all	95	NA	NA	NA
	Soil to Plastic Water Line	all	21	NA	NA	NA

Due to difficulties with analytical methods for the four individual chemicals listed in the above table, Total Extractable Hydrocarbon (TEH) default values were calculated for each chemical, using the assumption that diesel contains 0.2% naphthalene, 0.001% benzo(a)pyrene, 0.001% benz(a)anthracene, and 0.001% chrysene. Resulting TEH Default Values are shown in the following table.

Diesel			TEH Default Values			
Media	Exposure Pathway	Receptor	Naphthalene	Benzo(a)pyrene	Benz(a)anthracene	Chrysene
Groundwater (ug/L)	Groundwater Ingestion	actual	75,000	1,200	12,000	120,000
		potential	75,000	120,000	1,200,000	NA
	Groundwater Vapor to Enclosed Space	all	2,200,000	NA	NA	NA
	Groundwater to Plastic Water Line	all	75,000	120,000	1,200,000	NA
	Surface Water	all	75,000	120,000	1,200,000	NA
Soil (mg/kg)	Soil Leaching to Groundwater	all	3,800	NA	NA	NA
	Soil Vapor to Enclosed Space	all	47,500	NA	NA	NA
	Soil to Plastic	all	10,500	NA	NA	NA

Diesel			TEH Default Values			
Media	Exposure Pathway	Receptor	Naphthalene	Benzo(a) pyrene	Benz(a) anthracene	Chrysene
	Water Line					

The lowest TEH default value for each pathway (shown as a shaded box) was used in the Tier 1 Table.

Due to difficulties with analytical methods for the four individual chemicals, Total Extractable Hydrocarbon (TEH) default values were calculated for each chemical, using the assumption that waste oil contains no naphthalene, 0.003% benzo(a)pyrene, 0.003% benz(a)anthracene, and 0.003% chrysene. Resulting TEH Default Values are shown in the following table.

Waste Oil			TEH Default Values			
Media	Exposure Pathway	Receptor	Naphthalene	Benzo(a) pyrene	Benz(a) anthracene	Chrysene
Groundwater (ug/L)	Groundwater Ingestion	actual	NA	400	4,000	40,000
		potential	NA	40,000	400,000	NA
Groundwater (ug/L)	Groundwater Vapor to Enclosed Space	all	NA	NA	NA	NA
	Groundwater to Plastic Water Line	all	NA	40,000	400,000	NA
	Surface Water	all	NA	40,000	400,000	NA
Soil (mg/kg)	Soil Leaching to Groundwater	all	NA	NA	NA	NA
	Soil Vapor to Enclosed Space	all	NA	NA	NA	NA
	Soil to Plastic Water Line	all	NA	NA	NA	NA

The lowest TEH default value for each pathway (shown as a shaded box) was used in the Tier 1 Table.

[ARC 9011B, IAB 8/25/10, effective 9/29/10]

APPENDIX C**DECLARATION OF RESTRICTIVE COVENANTS**

Rescinded IAB 7/19/06, effective 8/23/06

APPENDIX D**IOWA DEPARTMENT OF NATURAL RESOURCES****NO FURTHER ACTION CERTIFICATE**

This document certifies that the referenced underground storage tank site has been classified by the Iowa Department of Natural Resources (IDNR) as "no action required" as provided in the 1995 Iowa Code Supplement 455B.474(1)"h"(1). This certificate may be recorded as provided by law.

ISSUED TO: OWNERS/OPERATORS OF TANKS

DATE OF ISSUANCE:

IDNR FILE REFERENCES: LUST # REGISTRATION #

LEGAL DESCRIPTION OF UNDERGROUND STORAGE TANK SITE:

Issuance of this certificate does not preclude the IDNR from requiring further corrective action due to new releases and is based on the information available to date. The department is precluded from requiring additional corrective action solely because governmental action standards are changed. See 1995 Iowa Code Supplement 455B.474(1)"h"(1).

This certificate does not constitute a warranty or a representation of any kind to any person as to the environmental condition, marketability or value of the above referenced property other than that certification required by 1995 Iowa Code Supplement 455B.474(1)"h".

These rules are intended to implement Iowa Code sections 455B.304, 455B.424 and 455B.474.

- [Filed emergency 9/20/85—published 10/9/85, effective 9/20/85]
- [Filed emergency 11/14/86—published 12/3/86, effective 12/3/86]
- [Filed emergency 12/29/86—published 1/14/87, effective 1/14/87]
- [Filed 5/1/87, Notice 1/14/87—published 5/20/87, effective 7/15/87]¹
- [Filed emergency 9/22/87—published 10/21/87, effective 9/22/87]
- [Filed 2/19/88, Notice 11/18/87—published 3/9/88, effective 4/13/88]
- [Filed emergency 10/24/88—published 11/16/88, effective 10/24/88]
- [Filed 7/21/89, Notice 2/22/89—published 8/9/89, effective 9/13/89]
- [Filed emergency 8/25/89—published 9/20/89, effective 8/25/89]
- [Filed 8/31/90, Notice 3/21/90—published 9/19/90, effective 10/24/90]
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- [Filed emergency 3/29/91—published 4/17/91, effective 3/29/91]
- [Filed emergency 8/28/91—published 9/18/91, effective 8/28/91]
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- [Filed emergency 6/25/99—published 7/14/99, effective 7/1/99]
- [Filed 10/1/99, Notice 7/14/99—published 10/20/99, effective 11/24/99]
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³[Filed ARC 8469B (Notice ARC 7854B, IAB 6/17/09), IAB 1/13/10, effective 2/17/10]
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 [Editorial change: IAC Supplement 5/5/10]
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 [Filed Emergency ARC 0559C, IAB 1/9/13, effective 12/19/12]
 [Filed ARC 1100C (Notice ARC 0560C, IAB 1/9/13; Amended Notice ARC 0836C, IAB 7/24/13),
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 [Filed ARC 5625C (Notice ARC 5316C, IAB 12/16/20), IAB 5/19/21, effective 6/23/21]
 [Filed ARC 7058C (Notice ARC 6884C, IAB 2/8/23), IAB 8/23/23, effective 9/27/23]

¹ July 15, 1987, effective date of 135.9(4) delayed 70 days by Administrative Rules Review Committee at its June 1987 meeting.

² August 6, 2008, effective date of **ARC 6892B** delayed 70 days by Administrative Rules Review Committee at its July 2008 meeting. At its meeting held October 14, 2008, the Committee delayed until adjournment of the 2009 Session of the General Assembly the following provisions: **567—135.2(455B)**, definition of “Sensitive area”; **135.9(4)“f”**; **135.10(4)“a,”** last sentence: “A public water supply screening and risk assessment must be conducted in accordance with 135.10(4)“f” for this pathway” and **135.10(4)“b,”** last sentence of the first paragraph: “The certified groundwater professional or the department may request additional sampling of drinking water wells and non-drinking water wells as part of its evaluation”; **135.10(4)“f”**; **135.10(11)“h.”**

³ February 17, 2010, effective date of 135.5(1)“e” delayed 70 days by the Administrative Rules Review Committee at its meeting held February 8, 2010. At its meeting held April 13, 2010, the Committee delayed the effective date of 135.5(1)“e” until adjournment of the 2011 Session of the General Assembly.

CHAPTER 136
FINANCIAL RESPONSIBILITY FOR UNDERGROUND STORAGE TANKS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—136.1(455B) Applicability.

136.1(1) This chapter applies to owners and operators of all petroleum underground storage tank (UST) systems except as otherwise provided in this rule.

136.1(2) Owners and operators of petroleum UST systems are subject to these requirements.

136.1(3) State and federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States are exempt from the requirements of this chapter.

136.1(4) The requirements of this chapter do not apply to owners and operators of farm or residential tanks of 1,100 gallons or less capacity installed prior to July 1, 1987, or any UST system described in 567—paragraph 135.1(3) “b” or subparagraph 135.1(3) “c”(1), (3) or (4).

136.1(5) If the owner and operator of a petroleum underground storage tank are separate persons, only one person is required to demonstrate financial responsibility; however, both parties are liable in event of noncompliance.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.2(455B) Compliance dates. Rescinded IAB 4/17/02, effective 5/22/02.

567—136.3(455B) Definition of terms.

“Accidental release” means any sudden or nonsudden release of petroleum arising from operating an underground storage tank that results in a need for corrective action and/or compensation for bodily injury or property damage neither expected nor intended by the tank owner or operator.

“Bodily injury” shall have the meaning given to this term by applicable state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury.

“Chief financial officer,” in the case of local government owners and operators, means the individual with the overall authority and responsibility for the collection, disbursement, and use of funds by the local government.

“Controlling interest” means direct ownership of at least 50 percent of the voting stock of another entity.

“Director” means the director of the Iowa department of natural resources or local agency responsible for carrying out an approved UST program.

“Financial reporting year” means the latest consecutive 12-month period for which any of the following reports used to support a financial test is prepared:

1. A 10-K report submitted to the SEC;
2. An annual report of tangible net worth submitted to Dun and Bradstreet; or
3. Annual reports submitted to the Energy Information Administration or the Rural Utilities Service.

“Financial reporting year” may thus comprise a fiscal- or a calendar-year period.

“Legal defense cost” is any expense that an owner or operator or provider of financial assurance incurs in defending against claims or actions brought;

1. By EPA or a state to require corrective action or to recover the costs of corrective action;
2. By or on behalf of a third party for bodily injury or property damage caused by an accidental release; or

3. By any person to enforce the terms of a financial assurance mechanism.

“Local government” means counties, municipalities, townships, separately chartered and operated special districts (including local government public transit systems and redevelopment authorities), and independent school districts authorized as governmental bodies by state charter or constitution and special districts and independent school districts established by counties, municipalities, townships, and other general purpose governments to provide essential services.

“*Occurrence*” means an accident, including continuous or repeated exposure to conditions, which results in a release from an underground storage tank.

NOTE: This definition is intended to assist in the understanding of these rules and is not intended either to limit the meaning of “occurrence” in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of “occurrence.”

“*Owner or operator*,” when the owner or operator are separate parties, refers to the party that is obtaining or has obtained financial assurances.

“*Petroleum marketing facilities*” include all facilities at which petroleum is produced or refined and all facilities from which petroleum is sold or transferred to other petroleum marketers or to the public.

“*Property damage*” shall have the meaning given this term by applicable state law. This term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include corrective action associated with releases from tanks which are covered by the policy.

“*Provider of financial assurance*” means an entity that provides financial assurance to an owner or operator of an underground storage tank through one of the mechanisms listed in rules 567—136.6(455B) to 567—136.16(455B), including a guarantor, insurer, risk retention group, surety, issuer of a letter of credit, issuer of a state-required mechanism, or a state.

“*Substantial business relationship*” means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued “incident to that relationship” if it arises from and depends on existing economic transactions between the guarantor and the owner or operator.

“*Substantial governmental relationship*” means the extent of a governmental relationship necessary under applicable state law to make an added guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued “incident to that relationship” if it arises from a clear commonality of interest in the event of UST release such as coterminous boundaries, overlapping constituencies, common groundwater aquifer, or other relationship other than monetary compensation that provides a motivation for the guarantor to provide a guarantee.

“*Tangible net worth*” means the tangible assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, “assets” means all existing and all probable future economic benefits obtained or controlled by a particular entity as a result of past transactions.

“*Termination*” under 136.8(2) “a” and “b” means only those changes that could result in a gap in coverage as where the insured has not obtained substitute coverage or has obtained substitute coverage with a different retroactive date than the retroactive date of the original policy date for compliance established in rule 567—136.2(455B).

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.4(455B) Amount and scope of required financial responsibility.

136.4(1) Owners or operators of petroleum underground storage tanks must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks in at least the following per-occurrence amounts:

a. For owners or operators of petroleum underground storage tanks that are located at petroleum marketing facilities, or that handle an average of more than 10,000 gallons of petroleum per month based on annual throughput for the previous calendar year; \$1 million.

b. For all other owners or operators of petroleum underground storage tanks; \$500,000.

136.4(2) Owners or operators of petroleum underground storage tanks must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks in at least the following annual aggregate amounts:

a. For owners or operators of 1 to 100 petroleum underground storage tanks, \$1 million.

b. For owners or operators of 101 or more petroleum underground storage tanks, \$2 million.

136.4(3) For the purposes of subrules 136.4(2) and 136.4(6) only, a petroleum underground storage tank means a single containment unit and does not mean combinations of single containment units.

136.4(4) Except as provided in subrule 136.4(5), if the owner or operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for:

- a. Taking corrective action;
- b. Compensating third parties for bodily injury and property damage caused by sudden accidental releases; or
- c. Compensating third parties for bodily injury and property damage caused by nonsudden accidental releases, the amount of assurance provided by each mechanism or combination of mechanisms must be in the full amount specified in subrules 136.4(1) and 136.4(2).

136.4(5) If an owner or operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for different petroleum underground storage tanks, the annual aggregate required shall be based on the number of tanks covered by each such separate mechanism or combination of mechanisms.

136.4(6) Owners or operators shall review the amount of aggregate assurance provided whenever additional petroleum underground storage tanks are acquired or installed. If the number of petroleum underground storage tanks for which assurance must be provided exceeds 100, the owner or operator shall demonstrate financial responsibility in the amount of at least \$2 million of annual aggregate assurance by the anniversary of the date on which the mechanism demonstrating financial responsibility became effective. If assurance is being demonstrated by a combination of mechanisms, the owner or operator shall demonstrate financial responsibility in the amount of at least \$2 million of annual aggregate assurance by the first-occurring effective date anniversary of any one of the mechanisms combined (other than a financial test or guarantee) to provide assurance.

136.4(7) The amounts of assurance required under this rule exclude legal defense costs.

136.4(8) The required per-occurrence and annual aggregate coverage amounts do not in any way limit the liability of the owner or operator.

567—136.5(455B) Allowable mechanisms and combinations of mechanisms.

136.5(1) Subject to the limitations of subrule 136.5(2):

a. An owner or operator, including a local government owner or operator, may use any one or combination of the mechanisms listed in rules 567—136.6(455B) to 567—136.12(455B) to demonstrate financial responsibility under this chapter for one or more underground storage tanks, and

b. A local government owner or operator may use any one or combination of the mechanisms listed in rules 567—136.13(455B) to 567—136.16(455B) to demonstrate financial responsibility under this chapter for one or more underground storage tanks.

136.5(2) An owner or operator may use self-insurance in combination with a guarantee only if, for the purpose of meeting the requirements of the financial test under this chapter, the financial statements of the owner or operator are not consolidated with the financial statements of the guarantor.

567—136.6(455B) Financial test of self-insurance.

136.6(1) An owner or operator, and/or guarantor, may satisfy the requirements of rule 567—136.4(455B) by passing a financial test as specified in this rule. To pass the financial test of self-insurance, the owner or operator, and/or guarantor must meet the criteria of subrule 136.6(2) or 136.6(3) based on year-end financial statements for the latest completed fiscal year.

136.6(2) Financial test alternative I.

a. The owner or operator, and/or guarantor, must have a tangible net worth of at least ten times:

(1) The total of the applicable aggregate amount required by rule 567—136.4(455B), based on the number of underground storage tanks for which a financial test is used to demonstrate financial responsibility to the Iowa department of natural resources under this rule.

(2) The sum of the corrective action cost estimates, the current closure and postclosure care cost estimates, and amount of liability coverage for which a financial test is used to demonstrate financial responsibility to EPA under 40 CFR Parts 264.101, 264.143, 264.145, 264.147, 265.143, 265.145, and

265.147 or to a state implementing agency under a state program authorized by EPA under 40 CFR Part 271; and

(3) The sum of current plugging and abandonment cost estimates for which a financial test is used to demonstrate financial responsibility to EPA under 40 CFR Part 144.63 or to a state implementing agency under a state program authorized by EPA under 40 CFR Part 145.

b. The owner or operator, and/or guarantor, must have a tangible net worth of at least \$10 million.

c. The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer worded as specified in subrule 136.6(4).

d. The owner or operator, and/or guarantor, must either:

(1) File financial statements annually with the U.S. Securities and Exchange Commission, the Energy Information Administration, or the Rural Utilities Service; or

(2) Report annually the firm's tangible net worth to Dun and Bradstreet, and Dun and Bradstreet must have assigned the firm a financial strength rating of 4A or 5A.

e. The firm's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

136.6(3) Financial test alternative II.

a. The owner or operator, and/or guarantor must meet the financial test requirements of 40 CFR 264.147(f)(1) substituting the appropriate amounts specified in 136.4(2), paragraphs "a" and "b," for the "amount of liability coverage" each time specified in that section.

b. The owner, operator, or guarantor must have a tangible net worth of at least \$10 million.

c. The owner, operator, or guarantor must have a tangible net worth of at least six times the amount of the applicable UST aggregate.

d. At least 90 percent of the total assets of the owner, operator, or guarantor must be U.S. assets, or U.S. assets at least six times the amount of the applicable UST aggregate, and either:

(1) Net working capital at least six times the applicable UST aggregate; or

(2) A current bond rating for the most recent bond issue of AAA, AA, A or BBB as issued by Standard & Poor's, or Aaa, Aa, A or Baa as issued by Moody's.

e. The fiscal year-end financial statements of the owner or operator, and/or guarantor, must be examined by an independent certified public accountant and be accompanied by the accountant's report of the examination.

f. The firm's year-end financial statements cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

g. The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer, worded as specified in subrule 136.6(4).

h. If the financial statements of the owner or operator, and/or guarantor, are not submitted annually to the U.S. Securities and Exchange Commission, the Energy Information Administration or the Rural Utilities Service, the owner or operator, and/or guarantor, must obtain a special report by an independent certified public accountant stating that:

(1) The accountant has compared the data that the letter from the chief financial officer specifies as having been derived from the latest year-end financial statements of the owner or operator, and/or guarantor, with the amounts in such financial statements; and

(2) In connection with that comparison, no matters came to the accountant's attention which caused the belief that the specified data should be adjusted.

136.6(4) To demonstrate that it meets the financial test under subrule 136.6(2) or 136.6(3), the chief financial officer of the owner or operator, and/or guarantor, must sign, within 120 days of the close of each financial reporting year, as defined by the 12-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

Letter from Chief Financial Officer

I am the chief financial officer of [insert: name and address of the owner or operator, or guarantor]. This letter is in support of the use of [insert: "the financial test of self-insurance," and/or "guarantee"] to demonstrate financial responsibility for [insert: "taking corrective action" and/or

“compensating third parties for bodily injury and property damage”] caused by [insert: “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases”] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this financial test by this [insert: “owner or operator,” and/or “guarantor”]: [List for each facility: the name and address of the facility where tanks assured by this financial test are located and whether tanks are assured by this financial test. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to subrule 135.3(3)].

A [insert: “financial test,” and/or “guarantee”] is also used by this [insert: “owner or operator,” or “guarantor”] to demonstrate evidence of financial responsibility in the following amounts under other EPA regulations or state programs authorized by EPA under 40 CFR Parts 271 and 145:

EPA Regulation:	Amount
Closure (§§264.143 and 265.143).....	\$ _____
Postclosure Care (§§264.145 and 265.145)	\$ _____
Liability Coverage (§§264.147 and 265.147).....	\$ _____
Corrective Action (§264.101(b))	\$ _____
Plugging and Abandonment (§144.63).....	\$ _____
Authorized State Programs:	
Closure	\$ _____
Postclosure Care	\$ _____
Liability Coverage	\$ _____
Corrective Action	\$ _____
Plugging and Abandonment	\$ _____
TOTAL	\$ _____

This [insert: “owner or operator,” or “guarantor”] has not received an adverse opinion, a disclaimer of opinion, or a “going concern” qualification from an independent auditor on financial statements for the latest completed fiscal year.

[Fill in the information for Alternative I if the criteria of subrule 136.6(2) are being used to demonstrate compliance with the financial test requirements. Fill in the information of Alternative II if the criteria of subrule 136.6(3) are being used to demonstrate compliance with the financial test requirements.]

ALTERNATIVE I

- Amount of annual UST aggregate coverage being assured by a financial test, and/or guarantee \$ _____
- Amount of corrective action, closure and postclosure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, and/or guarantee \$ _____
- Sum of lines 1 and 2 \$ _____
- Total tangible assets \$ _____
- Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6] \$ _____
- Tangible net worth [subtract line 5 from line 4] \$ _____
- Is line 6 at least \$10 million? Yes No
- Is line 6 at least 10 times line 3? Yes No
- Have financial statements for the latest fiscal year been filed with the Securities and Exchange Commission? Yes No
- Have financial statements for the latest fiscal year been filed with the Energy Information Administration? Yes No

11. Have financial statements for the latest fiscal year been filed with the Rural Utilities Service? _____
12. Has financial information been provided to Dun and Bradstreet, and has Dun and Bradstreet provided a financial strength rating of 4A or 5A? [Answer "Yes" only if both criteria have been met.] _____

ALTERNATIVE II

1. Amount of annual UST aggregate coverage being assured by a financial test, and/or guarantee \$ _____
2. Amount of corrective action, closure and postclosure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, and/or guarantee \$ _____
3. Sum of lines 1 and 2 \$ _____
4. Total tangible assets \$ _____
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6] \$ _____
6. Tangible net worth [subtract line 5 from line 4] \$ _____
7. Total assets in the U.S. [required only if less than 90 percent of assets are located in the U.S.] \$ _____
8. Is line 6 at least \$10 million? _____
9. Is line 6 at least 6 times line 3? _____
10. Are at least 90 percent of assets located in the U.S.? [If "No," complete line 11.] _____
11. Is line 7 at least 6 times line 3? [Fill in either lines 12-15 or lines 16-18.] _____
12. Current assets \$ _____
13. Current liabilities. \$ _____
14. Net working capital [subtract line 13 from line 12] \$ _____
15. Is line 14 at least 6 times line 3? _____
16. Current bond rating of most recent bond issue _____
17. Name of rating service _____
18. Date of maturity of bond. _____
19. Have financial statements for the latest fiscal year been filed with the SEC, the Energy Information Administration, or the Rural Utilities Service? _____

[If "No," please attach a report from an independent certified public accountant certifying that there are no material differences between the data as reported in lines 4-18 above and the financial statements for the latest fiscal year.]

[For both Alternative I and Alternative II complete the certification with this statement.]

I hereby certify that the wording of this letter is identical to the wording specified in subrule 136.6(4) as such regulations were constituted on the date shown immediately below.

[Signature]

[Name]

[Title]

[Date]

136.6(5) If an owner or operator using the test to provide financial assurance finds that the requirements of the financial test based on the year-end financial statements are no longer being met, the owner or operator must obtain alternative coverage within 150 days of the end of the year for which financial statements have been prepared.

136.6(6) The director may require reports of financial condition at any time from the owner or operator, and/or guarantor. If the director finds, on the basis of such reports or other information, that the owner or operator, and/or guarantor, no longer meets the financial test requirements of subrule 136.6(2) or 136.6(3) or 136.6(4), the owner or operator must obtain alternate coverage within 30 days after notification of such a finding.

136.6(7) If the owner or operator fails to obtain alternate assurance within 150 days of finding that the requirements of the financial test based on the year-end financial statements are no longer being met, or

within 30 days of notification by the director that the requirements of the financial test are no longer being met, the owner or operator must notify the director of such failure within 10 days.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.7(455B) Guarantee.

136.7(1) An owner or operator may satisfy the requirements of rule 567—136.4(455B) by obtaining guarantee that conforms to the requirements of this rule. The guarantor must be:

- a. A firm that possesses a controlling interest in the owner or operator; possesses a controlling interest in such a firm; or is controlled through stock ownership by a common parent firm that possesses a controlling interest in the owner or operator; or
- b. A firm engaged in a substantial business relationship with the owner or operator and issuing the guarantee as an act incident to that business relationship.

136.7(2) Within 120 days of the close of each financial reporting year the guarantor must demonstrate that it meets the financial test criteria of rule 567—136.6(455B) based on year-end financial statements for the latest completed financial reporting year by completing the letter from the chief financial officer described in subrule 136.6(4) and must deliver the letter to the owner or operator. If the guarantor fails to meet the requirements of the financial test at the end of any financial reporting year, within 120 days of the end of that financial reporting year the guarantor shall send by certified mail, before cancellation or nonrenewal of the guarantee, notice to the owner or operator. If the director notifies the guarantor that the requirements of the financial test of subrules 136.6(2) or 136.6(3) and 136.6(4) are no longer being met, the guarantor must notify the owner or operator within 10 days of receiving such notification from the director. In both cases, the guarantee will terminate no less than 120 days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternate coverage as specified in subrule 136.23(3).

136.7(3) The guarantee must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

GUARANTEE

Guarantee made this [date] by [name of guaranteeing entity], a business entity organized under the laws of the state of Iowa, herein referred to as guarantor, to the Iowa Department of Natural Resources and to any and all third parties, and obligees, on behalf of [owner or operator] of [business address].

Recitals.

1. Guarantor meets or exceeds the financial test criteria of subrules 567—136.6(2) or 136.6(3) and 136.6(4) and agrees to comply with the requirements for guarantors as specified in subrule 136.7(2).

2. [Owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to subrule 135.3(3) and the name and address of the facility.] This guarantee satisfies 567—Chapter 136 requirements for assuring funding for [insert: “taking corrective action” and/or “compensating third parties for bodily injury and property damage caused by either “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases”; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert dollar amount] annual aggregate.

3. [Insert appropriate phrase: “On behalf of our subsidiary” (if guarantor is corporate parent of the owner or operator); “On behalf of our affiliate” (if guarantor is a related firm of the owner or operator); or “Incident to our business relationship with” (if guarantor is providing the guarantee as an incident to a substantial business relationship with owner or operator)] [owner or operator],

guarantor guarantees to the Iowa Department of Natural Resources and to any and all third parties that:

In the event that [owner or operator] fails to provide alternate coverage within 60 days after receipt of a notice of cancellation of this guarantee and the Director of the Iowa Department of Natural Resources has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the Director, shall fund a standby trust fund in accordance with the provisions of rule 567—136.21(455B), in an amount not to exceed the coverage limits specified above.

In the event that the Director determines that [owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with rule 567—135.7(455B), the guarantor upon written instructions from the Director shall fund a standby trust in accordance with the provisions of rule 567—136.21(455B), in an amount not to exceed the coverage limit specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [“sudden” and/or “nonsudden”] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Director, shall fund a standby trust in accordance with the provisions of rule 567—136.21(455B) to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

4. Guarantor agrees that if, at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet the financial test criteria of subrules 567—136.6(2) or 136.6(3) and 136.6(4), guarantor shall send within 120 days of such failure, by certified mail, notice to [owner or operator]. The guarantee will terminate 120 days from the date of receipt of the notice by [owner or operator], as evidenced by the return receipt.

5. Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

6. Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to 567—Chapter 135 or Chapter 136.

7. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial responsibility requirements of 567—Chapter 136 for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by [owner or operator], as evidenced by the return receipt.

8. The guarantor’s obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers’ compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of rule 567—136.4(455B).

9. Guarantor expressly waives notice of acceptance of this guarantee by the Iowa Department of Natural Resources, by any or all third parties, or by [owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in subrule 567—136.7(3) as such regulations were constituted on the effective date shown immediately below.

Effective date: _____

[Name of guarantor]

[Authorized signature for guarantor]

[Name of person signing]

[Title of person signing]

Signature of witness or notary: _____

136.7(4) An owner or operator who uses a guarantee to satisfy the requirements of rule 567—136.4(455B) must establish a standby trust fund when the guarantee is obtained. Under the terms of the guarantee, all amounts paid by the guarantor under the guarantee will be deposited directly into the standby trust fund in accordance with instructions from the director under rule 567—136.21(455B). This standby trust fund must meet the requirements specified in rule 567—136.12(455B).

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.8(455B) Insurance and risk retention group coverage.

136.8(1) An owner or operator may satisfy the requirements of rule 567—136.4(455B) by obtaining liability insurance that conforms to the requirements of this rule from a qualified insurer or risk retention group. Such insurance may be in the form of a separate insurance policy or an endorsement to an existing insurance policy.

136.8(2) Each insurance policy must be amended by an endorsement worded as specified in 136.8(2) “a” “ENDORSEMENT” or evidenced by a certificate of insurance worded as specified in 136.8(2) “b” “CERTIFICATE OF INSURANCE,” except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

a. ENDORSEMENT

Name: _____

Address: _____ [address of each covered location] _____

Policy Number: _____

Period of Coverage: _____ [current policy period] _____

Name of [Insurer or Risk Retention Group]:

Address of [Insurer or Risk Retention Group]:

Name of Insured: _____

Address of Insured: _____

Endorsement:

(1) This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering the following underground storage tanks:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 567—subrule 135.3(3) and the name and address of the facility.]

for [insert: “taking corrective action” and/or “compensating third parties for bodily injury and property damage caused by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental release; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy”; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the “each occurrence” and “annual aggregate” limits of the Insurer’s or Group’s liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

(2) The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions inconsistent with numbered paragraphs “1” to “7” of this subparagraph are hereby amended to conform with numbered paragraphs “1” to “7”:

1. Bankruptcy or insolvency of the insured shall not relieve the [“Insurer” or “Group”] of its obligation under the policy to which this endorsement is attached.

2. The [“Insurer” or “Group”] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third party, with a right of reimbursement by the insured for any such payment made by the [“Insurer” or “Group”]. This provision does not apply with

respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in rules 567—136.6(455B) to 567—136.17(455B).

3. Whenever requested by the Director of the Iowa Department of Natural Resources, the [“Insurer” or “Group”] agrees to furnish to the director a signed duplicate original of the policy and all endorsements.

4. Cancellation or any other termination of the insurance by the [“Insurer” or “Group”] except for nonpayment of premium or misrepresentation by the insured will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the insured. Cancellation for nonpayment of premium or misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured.

Insert for claims-made policies:

5. The insurance covers claims otherwise covered by the policy that are reported to the [“Insurer” or “Group”] within six months of the effective date of cancellation or nonrenewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the previous policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy

6. The [“Insurer” “Group”] will notify the insured and any additional named insureds of the six-month extended reporting expiration date as provided in paragraph 136.8(2) “a”(2) “5” in any written final cancellation or nonrenewal notice in accordance with rule 567—136.18(455B).

7. Timely notice of a release and claim for coverage to the insurer by the Iowa Department of Natural Resources shall be deemed sufficient notice on behalf of the insured under the terms, conditions, and exclusions of this policy. Notice by the department does not modify or enlarge the terms, conditions and exclusions of coverage but is only intended to preserve coverage to which the insured may otherwise be entitled under the policy.

I hereby certify that the wording of this instrument is identical to the wording in 567—subrule 136.8(2) “ENDORSEMENT” and that the [“Insurer” or “Group”] is [licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states].

[Signature of authorized representative of Insurer or Risk Retention Group]

[Name of person signing]

[Title of person signing], Authorized Representative of [name of Insurer or Risk Retention Group]

[Address of Representative]

b. CERTIFICATE OF INSURANCE

Name: _____ [name of each covered location] _____

Address: _____ [address of each covered location] _____

Policy Number: _____

Endorsement (if applicable): _____

Period of Coverage: _____ [current policy period] _____

Name of [Insurer or Risk Retention Group]:

_____Address of [Insurer or Risk Retention Group]:

Name of Insured: _____

Address of Insured: _____

Certification:

(1) [Name of Insurer or Risk Retention Group], [the “Insurer” or “Group”], except for the nonpayment of premium or misrepresentation by the insured, as identified above, hereby certifies that it has issued liability insurance covering the following underground storage tank(s):

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 567—subrule 135.3(3) and the name and address of the facility.]
for [insert: “taking corrective action” and/or “compensating third parties for bodily injury and property damage caused by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental release; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy”]; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the “each occurrence” and “annual aggregate” limits of the Insurer’s or Group’s liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

(2) The [“Insurer” or “Group”] further certifies the following with respect to the insurance described in subparagraph (1):

1. Bankruptcy or insolvency of the insured shall not relieve the [“Insurer” or “Group”] of its obligations under the policy to which this certificate applies.

2. The [“Insurer” or “Group”] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third party, with a right of reimbursement by

the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in 567—136.6(455B) to 567—136.17(455B).

3. Whenever requested by the Director of the Iowa Department of Natural Resources, the ["Insurer" or "Group"] agrees to furnish to the director a signed duplicate original of the policy and all endorsements.

4. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"] except for nonpayment of premium or misrepresentation by the insured will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the insured. Cancellation for nonpayment of premium or misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of 10 days after a copy of such written notice is received by the insured.

Insert for claims-made policies:

5. The insurance covers claims otherwise covered by the policy that are reported to the ["Insured" or "Group"] within six months of the effective date of cancellation or nonrenewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.

6. The ["Insurer" or "Group"] will notify the insured and any additional named insured of the six-month extended reporting expiration date as provided in paragraph 136.8(2) "b"(2)"5" in any written final cancellation or nonrenewal notice in accordance with rule 567—136.18(455B).

7. Timely notice of a release and claim for coverage to the insurer by the Iowa Department of Natural Resources shall be deemed sufficient notice on behalf of the insured under the terms, conditions and exclusions of this policy. Notice by the department does not modify or enlarge the terms, conditions and exclusions of coverage but is only intended to preserve coverage to which the insured may otherwise be entitled under the policy.

I hereby certify that the wording of this instrument is identical to the wording in 567—subrule 136.8(2) "CERTIFICATE OF INSURANCE" and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states"].

[Signature of authorized representative of Insurer]

[Type name]

[Title], Authorized Representative of [name of Insurer or Risk Retention Group]

[Address of Representative]

136.8(3) Each insurance policy must be issued by an insurer or a risk retention group that, at a minimum, is licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.9(455B) Surety bond.

136.9(1) An owner or operator may satisfy the requirements of rule 567—136.4(455B) by obtaining a surety bond that conforms to the requirements of this rule. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in the latest Circular 570 of the U.S. Department of the Treasury.

136.9(2) The surety bond must be worded as follows, except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed: _____

Period of coverage: _____

Principal: _____ [legal name and business address of owner or operator] _____

Type of organization: [insert “individual,” “joint venture,” “partnership,” or “corporation”]

State of incorporation (if applicable): _____

Surety(ies): _____ [name(s) and business address(es)] _____

Scope of Coverage: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 567—subrule 135.3(3), and the name and address of the facility. List the coverage guaranteed by the bond: “taking corrective action” and/or “compensating third parties for bodily injury and property damage caused by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases” “arising from operating the underground storage tank”].

Penal sums of bond: Per occurrence \$ _____

Annual aggregate \$ _____

Surety’s bond number: _____

Know All Persons by These Presents, that we, the Principal and Surety(ies), hereto are firmly bound to The Iowa Department of Natural Resources, in the above penal sums for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sums jointly and severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sums.

Whereas said Principal is required under Subtitle I of the Solid Waste Disposal Act, as amended, to provide financial assurance for [insert: “Taking corrective action” and/or “compensating third parties for bodily injury and property damage caused by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases”; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tanks identified above, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, therefore, the conditions of the obligation are such that if the Principal shall faithfully [“take corrective action, in accordance with rule 567—135.7(455B) and the Director of the Iowa Department of Natural Resources instructions for,” and/or “compensate injured third parties for bodily injury and property damage caused by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases”] arising from operating the tank(s) identified above, or if the Principal shall provide alternate financial assurance, as specified in 567—Chapter 136, within 120 days after the date the notice of cancellation is received by the Principal from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

Such obligation does not apply to any of the following:

- a. Any obligation of [insert owner or operator] under a workers’ compensation, disability benefits, or unemployment compensation law or other similar law;
- b. Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];
- c. Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

d. Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

e. Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of rule 567—136.4(455B).

The Surety(ies) shall become liable on the bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the director of the Iowa department of natural resources that the Principal has failed to [“take corrective action, in accordance with rule 567—135.7(455B) and the director’s instructions,” and/or “compensate injured third parties”] as guaranteed by this bond, the Surety(ies) shall either perform [“corrective action in accordance with 567—Chapter 135 and the director’s instructions,” and/or “third-party liability compensation”] or place funds in an amount up to the annual aggregate penal sum into the standby trust fund as directed by the director under rule 567—136.7(455B).

Upon notification by the director that the Principal has failed to provide alternate financial assurance within 60 days after the date the notice of cancellation is received by the Principal from the Surety(ies) and that the director has determined or suspects that a release has occurred, the Surety(ies) shall place funds in an amount not exceeding the annual aggregate penal sum into the standby trust fund as directed by the director under rule 567—136.21(455B).

The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the annual aggregate to the penal sum shown on the face of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by the Principal, as evidenced by the return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies).

In Witness Whereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 567—subrule 136.9(2) as such rules were constituted on the date this bond was executed.

PRINCIPAL

[Signature(s)]

[Name(s)]

[Title(s)]

[Corporate seal]

CORPORATE SURETY(IES)

[Name and address]

State of Incorporation: _____

Liability limit: \$ _____

[Signature(s)]

[Name(s) and title(s)]

[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: \$ _____

136.9(3) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. In all cases, the surety's liability is limited to the per occurrence and annual aggregate penal sums.

136.9(4) The owner or operator who uses a surety bond to satisfy the requirements of rule 567—136.4(455B) must establish a standby trust fund when the surety bond is acquired. Under the terms of the bond, all amounts paid by the surety under the bond will be deposited directly into the standby trust fund in accordance with instructions from the director under rule 567—136.21(455B). This standby trust fund must meet the requirements specified in rule 567—136.12(455B).

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.10(455B) Letter of credit.

136.10(1) An owner or operator may satisfy the requirements of rule 567—136.4(455B) by obtaining an irrevocable standby letter of credit that conforms to the requirements of this subrule. The issuing institution must be an entity that has the authority to issue letters of credit in Iowa and whose letter-of-credit operations are regulated and examined by a federal or state agency.

136.10(2) The letter of credit must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

[Name and address of issuing institution]

[Name and address of Director of Iowa Department of Natural Resources]

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor, at the request and for the account of [owner or operator name] of [address] up to the aggregate amount of [in words] U.S. dollars (\$[insert dollar amount]), available upon presentation of

(1) your sight draft, bearing reference to this letter of credit, No. _____, and

(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of Subtitle I of the Solid Waste Disposal Act, as amended."

This letter of credit may be drawn on to cover [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the underground storage tank(s) identified below in the amount of [in words] \$[insert dollar amount] per occurrence and [in words] \$[insert dollar amount] annual aggregate:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 567—subrule 135.3(3) and the name and address of the facility.]

The letter of credit may not be drawn on to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of rule 567—136.4(455B).

This letter of credit is effective as of [date] and shall expire on [date], but such expiration date shall be automatically extended for a period of [at least the length of the original term] on [expiration date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify [owner or operator] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event that [owner or operator] is so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by [owner or operator], as shown on the signed return receipt.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner or operator] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in 567—subrule 136.10(2) as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution]

[Date]

This credit is subject to [insert “the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce,” or “the Uniform Commercial Code”].

136.10(3) An owner or operator who uses a letter of credit to satisfy the requirements of 567—subrule 135.9(4) must also establish a standby trust fund when the letter of credit is acquired. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the director will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the director under rule 567—136.21(455B). This standby trust fund must meet the requirements specified in rule 567—136.12(455B).

136.10(4) The letter of credit must be irrevocable with a term specified by the issuing institution. The letter of credit must provide that credit be automatically renewed for the same term as the original term, unless, at least 120 days before the current expiration date, the issuing institution notifies the owner or operator by certified mail of its decision not to renew the letter of credit. Under the terms of the letter of credit, the 120 days will begin on the date when the owner or operator receives the notice, as evidenced by the return receipt.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.11(455B) Trust fund.

136.11(1) An owner or operator may satisfy the requirements of rule 567—136.4(455B) by establishing a trust fund that conforms to the requirements of this rule. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

136.11(2) The wording of the trust agreement must be identical to the wording specified in subrule 136.12(2), “TRUST AGREEMENT,” and must be accompanied by a formal certification of acknowledgment as specified in subrule 136.12(2), “CERTIFICATION.”

136.11(3) The trust fund, when established, must be funded for the full required amount of coverage, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining required coverage.

136.11(4) If the value of the trust fund is greater than the required amount of coverage, the owner or operator may submit a written request to the director for release of the excess.

136.11(5) If other financial assurances as specified in this rule are substituted for all or part of the trust fund, the owner or operator may submit a written request to the director for release of the excess.

136.11(6) Within 60 days after receiving a request from the owner or operator for release of funds as specified in 136.11(4) or 136.11(5), the director will instruct the trustee to release to the owner or operator such funds as the director specifies in writing.

567—136.12(455B) Standby trust fund.

136.12(1) An owner or operator using any one of the mechanisms authorized by rules 567—136.7(455B), 567—136.9(455B) or 567—136.10(455B) must establish a standby trust fund when the mechanism is acquired. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

136.12(2) The standby trust agreement or trust agreement must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the bracket deleted:

TRUST AGREEMENT

Trust agreement, the “Agreement,” entered into as of [date] by and between [name of the owner or operator], a [name of state] [insert “corporation,” “partnership,” “association,” or “proprietorship”], the “Grantor,” and [name of corporate trustee], [insert “Incorporated in the state of _____” or “a national bank”], the “Trustee.”

[Whereas, the Iowa Department of Natural Resources has established certain rules applicable to the Grantor, requiring that an owner or operator of an underground storage tank shall provide assurance that funds will be available when needed for corrective action and third-party compensation for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from the operation of the underground storage tank. The attached Schedule A lists the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located that are covered by the standby trust agreement.]

[Whereas, the Grantor has elected to establish [insert either “a guarantee,” “surety bond,” or “letter of credit”] to provide all or part of such financial assurance for the underground storage tanks identified herein and is required to establish a standby trust fund able to accept payments from the instrument (This paragraph is only applicable to the standby trust agreement.);

[Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee];

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term “Grantor” means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term “Trustee” means the Trustee who enters into this Agreement and any successor Trustee.

[*Section 2. Identification of the Financial Assurance Mechanism.* This Agreement pertains to the [identify the financial assurance mechanism, either a guarantee, surety bond, or letter of credit, from which the standby trust fund is established to receive payments (This paragraph is only applicable to the standby trust agreement.)].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the “Fund,” for the benefit of the Iowa Department of Natural Resources. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. [The Fund is established initially as a standby to receive payments and shall not consist of any property.] Payments made by the provider of financial assurance pursuant to the Director of the Iowa Department of Natural Resources. Instructions are transferred to the Trustee and are referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor as provider of financial assurance, any payments necessary to discharge any liability of the Grantor established by the Iowa Department of Natural Resources.

Section 4. Payment for [“Corrective Action” and/or “Third-Party Liability Claims”]. The Trustee shall make payments from the Fund as the Director of the Iowa Department of Natural Resources shall direct, in writing, to provide for the payment of the costs of [insert: “Taking corrective action” and/or “compensating third parties for bodily injury and property damage caused

by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases”] arising from operating the tanks covered by the financial assurance mechanism identified in this Agreement.

The Fund may not be drawn upon to cover any of the following:

- (a) Any obligation of [insert owner or operator] under a workers’ compensation, disability benefits, or unemployment compensation law or other similar law;
- (b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];
- (c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;
- (d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;
- (e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of rule 567—136.4(455B).

The Trustee shall reimburse the Grantor, or other persons as specified by the Director, from the Fund for corrective action expenditures and/or third-party liability claims in such amounts as the Director shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Director specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash and securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge duties with respect to the trust fund solely in the interest of the beneficiaries and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of like character and with like aims; except that:

- (i) Securities or other obligations of the Grantor, or any other owner or operator of the tanks, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government;
- (ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and
- (iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

- (a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and
- (b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or saving certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any questions arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in writing sent to the Grantor and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 13. Instructions to the Trustee. All orders, requests and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Schedule B or such other designees as the Grantor may designate by amendment to Schedule B. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Director of the Iowa Department of Natural Resources to the Trustee shall be in writing, signed by the Director, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event

constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Director hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Director, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor and the Trustee, or by the Trustee and the Director of the Iowa Department of Natural Resources if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written direction of the Grantor and the Trustee, or by the Trustee and the Director of the Iowa Department of Natural Resources, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Director of the Iowa Department of Natural Resources issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the state of Iowa, or the Comptroller of the Currency in the case of National Association banks.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of the Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals (if applicable) to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 567—subrule 136.12(2) “TRUST AGREEMENT” as such regulations were constituted on the date written above.

[Signature of Grantor]

[Name of the Grantor]

[Title]

Attest:

[Signature of Trustee]

[Name of the Trustee]

[Title]

[Seal]

Attest:

[Signature of Witness]

[Name of Witness]

[Title]

[Seal]

The standby trust agreement must be accompanied by a formal certification of acknowledgment similar to the following.

CERTIFICATION

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

[Name of Notary Public]

136.12(3) The director of the Iowa department of natural resources instructs the trustee to refund the balance of the standby trust fund to the provider of financial assurance if the director determines that no additional corrective action costs of third-party liability claims will occur as a result of a release covered by the financial assurance mechanism for which the standby trust fund was established.

136.12(4) An owner or operator may establish one trust fund as the depository mechanism for all funds assured in compliance with this chapter.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.13(455B) Local government bond rating test.

136.13(1) A general purpose local government owner or operator and/or local government serving as a guarantor may satisfy the requirements of rule 567—136.4(455B) by having a currently outstanding issue or issues of general obligation bonds of \$1 million or more, excluding refunded obligations, with a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A, or BBB. Where a local government has multiple outstanding issues, or where a local government's bonds are rated by both Moody's and Standard & Poor's, the lower rating must be used to determine eligibility. Bonds that are backed by credit enhancement other than municipal bond insurance may not be considered in determining the amount of applicable bonds outstanding.

136.13(2) A local government owner or operator or local government serving as a guarantor that is not a general purpose local government and does not have the legal authority to issue general obligation bonds may satisfy the requirements of rule 567—136.4(455B) by having a currently outstanding issue or issues of revenue bonds of \$1 million or more, excluding refunded issues, and having a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A, or BBB as the lowest rating for any rated revenue bond issued by the local government. Where bonds are rated by both Moody's and Standard & Poor's, the lower rating for each bond must be used to determine eligibility. Bonds that are backed by credit enhancement may not be considered in determining the amount of applicable bonds outstanding.

136.13(3) The local government owner or operator and/or guarantor must maintain a copy of its bond rating published within the last 12 months by Moody's or Standard & Poor's.

136.13(4) To demonstrate that it meets the local government bond rating test, the chief financial officer of a general purpose local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

Letter from Chief Financial Officer

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test].

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency

[Moody's or Standard
& Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of \$1 million. All outstanding general obligation bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last 12 months. Neither rating service has provided notification within the last 12 months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in 567—subrule 136.13(4) of the Iowa Administrative Code on the date shown immediately below.

[Signature]

[Name]

[Title]

[Date]

136.13(5) To demonstrate that it meets the local government bond rating test, the chief financial officer or local government owner or operator and/or guarantor other than a general purpose government must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

Letter from Chief Financial Officer

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s). This local government is not organized to provide general governmental services and does not have the legal authority under state law or constitutional provisions to issue general obligation debt.

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test].

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding revenue bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency
				[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of \$1 million. All outstanding revenue bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last 12 months. The revenue bonds listed are not backed by third-party credit enhancement or are insured by a municipal bond insurance company. Neither rating service has provided notification within the last 12 months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in 567—subrule 136.13(5) of the Iowa Administrative Code on the date shown immediately below.

[Signature]

[Name]

[Title]

[Date]

136.13(6) The director of the Iowa department of natural resources may require reports of financial condition at any time from the local government owner or operator, and/or local government guarantor. If the director finds, on the basis of such reports or other information, that the local government owner or operator, and/or guarantor, no longer meets the local government bond rating test requirements of this rule, the local government owner or operator must obtain alternative coverage within 30 days after notification of such a finding.

136.13(7) If a local government owner or operator using the bond rating test to provide financial assurance finds that it no longer meets the bond rating test requirements, the local government owner or operator must obtain alternative coverage within 150 days of the change in status.

136.13(8) If the local government owner or operator fails to obtain alternate assurance within 150 days of finding that it no longer meets the requirements of the bond rating test or within 30 days of notification by the director of the department that it no longer meets the requirements of the bond rating test, the owner or operator must notify the director of such failure within 10 days.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.14(455B) Local government financial test.

136.14(1) A local government owner or operator may satisfy the requirements of rule 567—136.4(455B) by passing the financial test specified therein. To be eligible to use the financial test, the local government owner or operator must have the ability and authority to assess and levy taxes or to freely establish fees and charges.

To pass the local government financial test, the owner or operator must meet the criteria of subrules 136.14(3) and 136.14(4) based on year-end financial statements for the latest completed fiscal year.

136.14(2) The local government owner or operator must have the following information available, as shown in the year-end financial statements for the latest completed fiscal year:

a. Total revenues. Total revenues consist of the sum of general fund operating and nonoperating revenues including net local taxes, licenses and permits, fines and forfeitures, revenues from use of money and property, charges for services, investment earnings, sales (property, publications, etc.), intergovernmental revenues (restricted and unrestricted), and total revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity. For purposes of this test, the calculation of total revenues shall exclude all transfers between funds under the direct control of the local government using the financial test (interfund transfers), liquidation of investments, and issuance of debt.

b. Total expenditures. Total expenditures consist of the sum of general fund operating and nonoperating expenditures including public safety, public utilities, transportation, public works, environmental protection, cultural and recreational, community development, revenue sharing, employee benefits and compensation, office management, planning and zoning, capital projects, interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues. For purposes of this test, the calculation of total expenditures shall exclude all transfers between funds under the direct control of the local government using the financial test (interfund transfers).

c. Local revenues. Local revenues consist of total revenues, as defined in paragraph 136.14(2)“a,” minus the sum of all transfers from other governmental entities, including all moneys received from federal, state, or local government sources.

d. Debt service. Debt service consists of the sum of all interest and principal payments on all long-term credit obligations and all interest-bearing short-term credit obligations; includes interest and principal payments on general obligation bonds, revenue bonds, notes, mortgages, judgments, and interest-bearing warrants; and excludes payments on noninterest-bearing short-term obligations, interfund obligations, amounts owed in a trust or agency capacity, and advances and contingent loans from other governments.

e. Total funds. Total funds consist of the sum of cash and investment securities from all funds, including general, enterprise, debt service, capital projects, and special revenue funds, but excluding employee retirement funds, at the end of the local government’s financial reporting year. Total funds include federal securities, federal agency securities, state and local government securities, and other securities such as bonds, notes and mortgages. For purposes of this test, the calculation of total funds shall

exclude agency funds, private trust funds, accounts receivable, value of real property, and other nonsecurity assets.

f. Population. Population consists of the number of people in the area served by the local government.

136.14(3) The local government's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion or a disclaimer of opinion. The local government cannot have outstanding issues of general obligation or revenue bonds that are rated as less than investment grade.

136.14(4) The local government owner or operator must have a letter signed by the chief financial officer worded as specified in subrule 136.14(5).

136.14(5) To demonstrate that it meets the financial test under subrules 136.14(2) to 136.14(4), the chief financial officer of the local government owner or operator must sign, within 120 days of the close of each financial reporting year, as defined by the 12-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

Letter from Chief Financial Officer

I am the chief financial officer of [insert: name and address of the owner or operator]. This letter is in support of the use of the local government financial test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this financial test [List for each facility: the name and address of the facility where tanks assured by this financial test are located. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 567—135.3(455B) of the Iowa Administrative Code.]

This owner or operator has not received an adverse opinion, or a disclaimer of opinion from an independent auditor on its financial statements for the latest completed fiscal year. Any outstanding issues of general obligation or revenue bonds, if rated, have a Moody's rating of Aaa, Aa, A, or Baa or a Standard & Poor's rating of AAA, AA, A, or BBB; if rated by both firms, the bonds have a Moody's rating of Aaa, Aa, A, or Baa and a Standard & Poor's rating of AAA, AA, A, or BBB.

WORKSHEET FOR MUNICIPAL FINANCIAL TEST

PART I: BASIC INFORMATION

1. Total Revenues

a. Revenues (dollars)

Value of revenues excludes liquidation of investments and issuance of debt.

Value includes all general fund operating and nonoperating revenues, as well as all revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity.

b. Subtract interfund transfers (dollars)

c. Total Revenues (dollars)

2. Total Expenditures

a. Expenditures (dollars)

Value consists of the sum of general fund operating and nonoperating expenditures including interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues.

- b.* Subtract interfund transfers (dollars)
- c.* Total expenditures (dollars)

3. Local Revenues

- a.* Total Revenues (from 1c) (dollars)
- b.* Subtract total intergovernmental transfers (dollars)
- c.* Local Revenues (dollars)

4. Debt Service

- a.* Interest and fiscal charges (dollars)
- b.* Add debt retirement (dollars)
- c.* Total Debt Service (dollars)

5. Total Funds (dollars)

(Sum of amounts held as cash and investment securities from all funds, excluding amounts held for employee retirement funds, agency funds, and trust funds)

6. Population (persons)

PART II: APPLICATION OF TEST

7. Total Revenues to Population

- a.* Total Revenues (from 1c)
- b.* Population (from 6)
- c.* Divide 7a by 7b
- d.* Subtract 417
- e.* Divide by 5,212
- f.* Multiply by 4.095

8. Total Expenses to Population

- a.* Total Expenditures (from 2c)
- b.* Population (from 6)
- c.* Divide 8a by 8b
- d.* Subtract 524
- e.* Divide by 5,401
- f.* Multiply by 4.095

9. Local Revenues to Total Revenues

- a.* Local Revenues (from 3c)
- b.* Total Revenues (from 1c)
- c.* Divide 9a by 9b
- d.* Subtract .695
- e.* Divide by .205
- f.* Multiply by 2.840

10. Debt Service to Population

- a.* Debt Service (from 4c)
- b.* Population (from 6)

- c. Divide 10a by 10b
- d. Subtract 51
- e. Divide by 1,038
- f. Multiply by - 1.866

11. Debt Service to Total Revenues

- a. Debt Service (from 4c)
- b. Total Revenues (from 1c)
- c. Divide 11a by 11b
- d. Subtract .068
- e. Divide by .259
- f. Multiply by - 3.533

12. Total Revenues to Total Expenses

- a. Total Revenues (from 1c)
- b. Total Expenditures (from 2c)
- c. Divide 12a by 12b
- d. Subtract .910
- e. Divide by .899
- f. Multiply by 3.458

13. Funds Balance to Total Revenues

- a. Total Funds (from 5)
- b. Total Revenues (from 1c)
- c. Divide 13a by 13b
- d. Subtract .891
- e. Divide by 9.156
- f. Multiply by 3.270

14. Funds Balance to Total Expenses

- a. Total Funds (from 5)
- b. Total Expenditures (from 2c)
- c. Divide 14a by 14b
- d. Subtract .866
- e. Divide by 6.409
- f. Multiply by 3.270

15. Total Funds to Population

- a. Total Funds (from 5)
- b. Population (from 6)
- c. Divide 15a by 15b
- d. Subtract 270
- e. Divide by 4,548
- f. Multiply by 1.866

16. Add 7f + 8f + 9f + 10f + 11f + 12f + 13f + 14f + 15f + 4.937

I hereby certify that the financial index shown on line 16 of the worksheet is greater than zero and that the wording of this letter is identical to the wording specified in 567—subrule 136.14(5) of the Iowa Administrative Code on the date shown immediately below.

[Signature]

[Name]

[Title]

[Date]

136.14(6) If a local government owner or operator using the test to provide financial assurance finds that it no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within 150 days of the end of the year for which financial statements have been prepared.

136.14(7) The director of the Iowa department of natural resources may require reports of financial condition at any time from the local government owner or operator. If the director finds, on the basis of such reports or other information, that the local government owner or operator no longer meets the financial test requirements of subrules 136.13(2) to 136.13(5), the owner or operator must obtain alternate coverage within 30 days after notification of such a finding.

136.14(8) If the local government owner or operator fails to obtain alternate assurance within 150 days of finding that it no longer meets the requirements of the financial test based on the year-end financial statements or within 30 days of notification by the director of the Iowa department of natural resources that it no longer meets the requirements of the financial test, the owner or operator must notify the director of such failure within 10 days.

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.15(455B) Local government guarantee.

136.15(1) A local government owner or operator may satisfy the requirements of rule 567—136.4(455B) by obtaining a guarantee that conforms to the requirements of this rule. The guarantor must be either the state in which the local government owner or operator is located or a local government having a “substantial governmental relationship” with the owner and operator and issuing the guarantee as an act incident to that relationship. A local government acting as a guarantor must:

a. Demonstrate that it meets the bond rating test requirement of rule 567—136.13(455B) and deliver a copy of the chief financial officer’s letter as contained in subrule 136.13(4) to the local government owner or operator; or

b. Demonstrate that it meets the worksheet test requirements of rule 567—136.14(455B) and deliver a copy of the chief financial officer’s letter as contained in subrule 136.14(5) to the local government owner or operator; or

c. Demonstrate that it meets the local government fund requirements of subrule 136.16(1), 136.16(2), or 136.16(3) and deliver a copy of the chief financial officer’s letter as contained in rule 567—136.16(455B) to the local government owner or operator.

136.15(2) If the local government guarantor is unable to demonstrate financial assurance under rule 567—136.13(455B) or 567—136.14(455B) or subrule 136.16(1), 136.16(2), or 136.16(3) at the end of the financial reporting year, the guarantor shall send by certified mail, before cancellation or nonrenewal of the guarantee, notice to the owner or operator. The guarantee will terminate no less than 120 days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in subrule 136.23(3).

136.15(3) The guarantee agreement must be worded as specified in subrule 136.15(4) or 136.15(5), depending on which of the following alternative guarantee arrangements is selected:

a. If, in the default or incapacity of the owner or operator, the guarantor guarantees to fund a standby trust as directed by the director of the Iowa department of natural resources, the guarantee shall be worded as specified in 136.15(4).

b. If, in the default or incapacity of the owner or operator, the guarantor guarantees to make payments as directed by the director of the Iowa department of natural resources for taking corrective action or compensating third parties for bodily injury and property damage, the guarantee shall be worded as specified in subrule 136.15(5).

136.15(4) If the guarantor is a state, the local government guarantee with standby trust must be worded as specified in paragraph “a,” except that instructions in brackets are to be replaced with relevant information and the brackets deleted. If the guarantor is a local government, the local government

guarantee with standby trust must be worded as specified in paragraph “b,” except that instructions in brackets are to be replaced with relevant information and the brackets deleted.

a. Local Government Guarantee With Standby Trust Made by a State Guarantee made this [date] by [name of state], herein referred to as guarantor, to Iowa department of natural resources and to any and all third parties, and obligees, on behalf of [local government owner or operator].

Recitals

(1) Guarantor is a state.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 567—Chapter 135 of the Iowa Administrative Code (IAC), and the name and address of the facility.] This guarantee satisfies 567—Chapter 136 IAC requirements for assuring funding for [insert: “taking corrective action” and/or “compensating third parties for bodily injury and property damage caused by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases”; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert dollar amount] annual aggregate.

(3) Guarantor guarantees to Iowa department of natural resources and to any and all third parties that:

In the event that [local government owner or operator] fails to provide alternative coverage within 60 days after receipt of a notice of cancellation of this guarantee and the [director] of the Iowa department of natural resources has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the director shall fund a standby trust fund in accordance with the provisions of 567—136.21(455B) IAC, in an amount not to exceed the coverage limits specified above.

In the event that the [director] determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with 567—Chapter 135 IAC, the guarantor upon written instructions from the director shall fund a standby trust fund in accordance with the provisions of 567—136.21(455B) IAC, in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [“sudden” and/or “nonsudden”] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the [director], shall fund a standby trust in accordance with the provisions of 567—136.21(455B) IAC to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within 10 days after commencement of the proceeding.

(5) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to 567—Chapter 135 or 136 IAC.

(6) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of 567—Chapter 136 IAC for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by [owner or operator], as evidenced by the return receipt.

(7) The guarantor’s obligation does not apply to any of the following:

1. Any obligation of [local government owner or operator] under a workers’ compensation, disability benefits, or unemployment compensation law or other similar law;

2. Bodily injury to an employee of [insert: local government owner or operator] arising from, and in the course of, employment by [insert: local government owner or operator];

3. Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

4. Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

5. Bodily damage or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of 567—136.4(455B) IAC.

(8) Guarantor expressly waives notice of acceptance of this guarantee by the Iowa department of natural resources, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in 567—subrule 136.14(4) IAC on the effective date shown immediately below.

Effective date:

[Name of guarantor]

[Authorized signature for guarantor]

[Name of person signing]

[Title of person signing]

Signature of witness or notary:

b. Local Government Guarantee With Standby Trust Made by a Local Government Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Iowa, herein referred to as guarantor, to the Iowa department of natural resources and to any and all third parties, and obligees, on behalf of [local government owner or operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of 567—136.13(455B) of the Iowa Administrative Code (IAC), the local government financial test requirements of 567—136.14(455B) IAC, or the local government fund under 567—subrule 136.16(1), 136.16(2), or 136.16(3) IAC.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 567—135.3(455B) IAC or the corresponding state requirement, and the name and address of the facility.] This guarantee satisfies 567—Chapter 136 IAC requirements for assuring funding for [insert: “taking corrective action” and/or “compensating third parties for bodily injury and property damage caused by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases”]; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Iowa department of natural resources and to any and all third parties that:

In the event that [local government owner or operator] fails to provide alternative coverage within 60 days after receipt of a notice of cancellation of this guarantee and the director of the Iowa department of natural resources has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the [director], shall fund a standby trust fund in accordance with the provisions of 567—136.21(455B) IAC, in an amount not to exceed the coverage limits specified above.

In the event that the [director] determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with 567—Chapter 135 IAC, the guarantor, upon written instructions from the [director], shall fund a standby trust fund in accordance with the provisions of 567—136.21(455B) IAC, in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [“sudden” and/or “nonsudden”] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the [director], shall fund a standby trust in accordance with the provisions of 567—136.21(455B) IAC to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that, if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within 120 days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to 567—Chapter 135 or 136 IAC.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of 567—Chapter 136 IAC for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by [owner or operator], as evidenced by the return receipt.

(8) The guarantor’s obligation does not apply to any of the following:

1. Any obligation of [local government owner or operator] under a workers’ compensation, disability benefits, or unemployment compensation law or other similar law;
2. Bodily injury to an employee of [insert: local government owner or operator] arising from, and in the course of, employment by [insert: local government owner or operator];
3. Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;
4. Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;
5. Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of 567—136.4(455B) IAC.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Iowa department of natural resources, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in 567—subrule 136.15(4) IAC on the effective date shown immediately below.

Effective date:

[Name of guarantor]

[Authorized signature for guarantor]

[Name of person signing]

[Title of person signing]

Signature of witness or notary:

136.15(5) If the guarantor is a state, the local government guarantee without standby trust must be worded as specified in paragraph “a,” except that instructions in brackets are to be replaced with relevant information and the brackets deleted. If the guarantor is a local government, the local government guarantee without standby trust must be worded as specified in paragraph “b,” except that instructions in brackets are to be replaced with relevant information and the brackets deleted.

a. Local Government Guarantee Without Standby Trust Made by a State Guarantee made this [date] by [name of state], herein referred to as guarantor, to the Iowa department of natural resources and to any and all third parties, and obligees, on behalf of [local government owner or operator].

Recitals

(1) Guarantor is a state.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 567—Chapter 135 of the Iowa Administrative Code (IAC), and the name and address of the facility.] This guarantee satisfies 567—Chapter 136 IAC requirements for assuring funding for [insert: “taking corrective action” and/or “compensating third parties for bodily injury and property damage caused by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases”]; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Guarantor guarantees to the department of natural resources and to any and all third parties and obligees that:

In the event that [local government owner or operator] fails to provide alternative coverage within 60 days after receipt of a notice of cancellation of this guarantee and the director of the Iowa department of natural resources has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon written instructions from the [director], shall make funds available to pay for corrective actions and compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

In the event that the [director] determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with 567—Chapter 135 IAC, the guarantor, upon written instructions from the [director], shall make funds available to pay for corrective actions in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [“sudden” and/or “nonsudden”] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the [director], shall make funds available to compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

(4) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

(5) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to 567—Chapter 135 or 136 IAC.

(6) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of 567—Chapter 136 IAC for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by [owner or operator], as evidenced by the return receipt. If notified of a probable release, the guarantor agrees to remain bound to the terms of this guarantee for all charges arising from the release, up to the coverage limits specified above, notwithstanding the cancellation of the guarantee with respect to future releases.

(7) The guarantor’s obligation does not apply to any of the following:

1. Any obligation of [local government owner or operator] under a workers’ compensation, disability benefits, or unemployment compensation law or other similar law;

2. Bodily injury to an employee of [insert: local government owner or operator] arising from, and in the course of, employment by [insert: local government owner or operator];

3. Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

4. Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

5. Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of 567—136.4(455B) IAC.

(8) Guarantor expressly waives notice of acceptance of this guarantee by [the implementing agency], by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in 567—subrule 136.15(5) IAC on the effective date shown immediately below.

Effective date:

[Name of guarantor]

[Authorized signature for guarantor]

[Name of person signing]

[Title of person signing]

Signature of witness or notary:

b. Local Government Guarantee Without Standby Trust Made by a Local Government Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of [name of state], herein referred to as guarantor, to the Iowa department of natural resources and to any and all third parties, and obligees, on behalf of [local government owner or operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of 567—136.13(455B) of the Iowa Administrative Code (IAC), the local government financial test requirements of 567—136.14(455B) IAC, the local government fund under 567—subrule 136.16(1), 136.16(2) or 136.16(3) IAC.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 567—Chapter 135 IAC or the corresponding state requirement, and the name and address of the facility.] This guarantee satisfies 567—Chapter 136 IAC requirements for assuring funding for [insert: “taking corrective action” and/or “compensating third parties for bodily injury and property damage caused by” either “sudden accidental releases” or “nonsudden accidental releases” or “accidental releases”; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Iowa department of natural resources and to any and all third parties and obligees that:

In the event that [local government owner or operator] fails to provide alternative coverage within 60 days after receipt of a notice of cancellation of this guarantee and the director of the Iowa department of natural resources has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon written instructions from the [director], shall make funds available to pay for corrective actions and compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

In the event that the [director] determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with 567—Chapter 135 IAC, the guarantor, upon written instructions from the [director], shall make funds available to pay for corrective actions in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [“sudden” and/or “nonsudden”] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the [director], shall make funds available to compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

(4) Guarantor agrees that if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within 120 days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to 567—Chapter 135 or 136 IAC.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of 567—Chapter 136 IAC for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by [owner or operator], as evidenced by the return receipt. If notified of a probable release, the guarantor agrees to remain bound to the terms of this guarantee for all charges arising from the release, up to the coverage limits specified above, notwithstanding the cancellation of the guarantee with respect to future releases.

(8) The guarantor’s obligation does not apply to any of the following:

1. Any obligation of [local government owner or operator] under a workers’ compensation, disability benefits, or unemployment compensation law or other similar law;
2. Bodily injury to an employee of [insert: local government owner or operator] arising from, and in the course of, employment by [insert: local government owner or operator];
3. Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;
4. Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;
5. Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of 567—136.4(455B) IAC.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Iowa department of natural resources, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in 567—subrule 136.15(5) IAC on the effective date shown immediately below.

Effective date:

[Name of guarantor]

[Authorized signature for guarantor]

[Name of person signing]

[Title of person signing]

Signature of witness or notary:

567—136.16(455B) Local government fund. A local government owner or operator may satisfy the requirements of rule 567—136.4(455B) by establishing a dedicated fund account that conforms to the requirements of this rule. Except as specified in subrule 136.16(2), a dedicated fund may not be commingled with other funds or otherwise used in normal operations. A dedicated fund will be considered eligible if it meets one of the following requirements:

136.16(1) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks and is funded for the full amount of coverage required under rule 567—136.4(455B), or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage; or

136.16(2) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order as a contingency fund for general emergencies, including taking corrective action and compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks, and is funded for five times the full amount of coverage required under rule 567—136.4(455B), or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage. If the fund is funded for less than five times the amount of coverage required under rule 567—136.4(455B), the amount of financial responsibility demonstrated by the fund may not exceed one-fifth the amount in the fund; or

136.16(3) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks. A payment is made to the fund once every year for seven years until the fund is fully funded. This seven-year period is hereafter referred to as the “pay-in period.” The amount of each payment must be determined by this formula:

$$\frac{TF - CF}{Y}$$

Where TF is the total required financial assurance for the owner or operator, CF is the current amount in the fund, and Y is the number of years remaining in the pay-in period; and

a. The local government owner or operator has available bonding authority, approved through voter referendum (if such approval is necessary prior to the issuance of bonds), for an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund. This bonding authority shall be available for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks, or

b. The local government owner or operator has a letter signed by the appropriate state attorney general stating that the use of the bonding authority will not increase the local government’s debt beyond the legal debt ceilings established by the relevant state laws. The letter must also state that prior voter approval is not necessary before use of the bonding authority.

136.16(4) To demonstrate that it meets the requirements of the local government fund, the chief financial officer of the local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

Letter from Chief Financial Officer

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the local government fund mechanism to demonstrate financial responsibility for [insert: “taking corrective action” and/or “compensating third parties for bodily injury and property damage”] caused by [insert: “sudden accidental releases” or “nonsudden accidental releases” “accidental releases”] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this local government fund mechanism: [List for each facility: the name and address of the facility where tanks are assured by the local government fund].

[Insert: “The local government fund is funded for the full amount of coverage required under 567—136.4(455B) of the Iowa Administrative Code (IAC), or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage,” or “The local government fund is funded for five times the full amount of coverage required under 567—136.4(455B) IAC, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage,” or “A payment is made to the fund once every year for seven years until the fund is fully funded and [name of local government owner or operator] has available bonding authority, approved through voter referendum, of an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund” or “A payment is made to the fund once every year for seven years until the fund is fully funded and I have attached a letter signed by the state attorney general stating that (1) the use of the bonding authority will not increase the local government’s debt beyond the legal debt ceilings established by the relevant state laws and (2) prior voter approval is not necessary before use of the bonding authority”.]

The details of the local government fund are as follows:

Amount in fund (market value of fund at close of last fiscal year): _____

[If fund balance is incrementally funded as specified in 567—subrule 136.16(4) IAC, insert:

Amount added to fund in the most recently completed fiscal year: _____

Number of years remaining in the pay-in period: _____]

A copy of the state constitutional provision, or local government statute, charter, ordinance, or order dedicating the fund is attached.

I hereby certify that the wording of this letter is identical to the wording specified in 567—subrule 136.16(4) IAC on the date shown immediately below.

[Signature]

[Name]

[Title]

[Date]

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.17(455B) Substitution of financial assurance mechanisms by owner or operator.

136.17(1) An owner or operator may substitute any alternate financial assurance mechanisms as specified in this chapter provided that at all times an effective financial assurance mechanism or combination of mechanisms that satisfied the requirements of rule 567—136.4(455B) is maintained.

136.17(2) After obtaining alternate financial assurance as specified in this chapter, an owner or operator may cancel a financial assurance mechanism by providing notice to the provider of financial assurance.

567—136.18(455B) Cancellation or nonrenewal by a provider of financial assurance.

136.18(1) Except as otherwise provided, a provider of financial assurance may cancel or fail to renew an assurance mechanism by sending a notice of termination by certified mail to the owner or operator. For claims-made policies, the notice of termination must clearly advise the insured and any named additional insureds of the effective termination date and the applicable extended reporting period under which a claim must be made to preserve coverage as provided in 136.8(2)“a”(2)“6” and 136.8(2)“b”(2)“6.” In the alternative, insertion of the following unnumbered paragraph into a notice of termination satisfies this requirement. The provider of the financial assurance must also provide a copy of the notice of termination to the underground storage tank section of the department of natural resources. Failure to notify or timely provide a copy to the department will not invalidate a provider’s action to terminate coverage or deny renewal of coverage.

**[IOWA DEPARTMENT OF NATURAL RESOURCES NOTICE
EXTENDED COVERAGE**

Iowa department of natural resources rules require that all insured persons be afforded 180 days from the date of policy cancellation or nonrenewal to give notice of a release and make a claim for coverage under the terms and conditions of this policy. This means that, if you fail to give notice of a release and submit a claim as provided in this policy within 180 days of cancellation, you may be barred from making a claim for coverage under the terms of your policy, even if a release is later discovered and demonstrated to have occurred during the coverage period.]

a. Termination of a local government guarantee, a guarantee, a surety bond, or a letter of credit may not occur until 120 days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt.

b. Termination of insurance or risk retention group coverage, except for nonpayment or misrepresentation by the insured, or state-funded assurance may not occur until 60 days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt. Termination for nonpayment of premium or misrepresentation by the insured may not occur until a minimum of 10 days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt.

136.18(2) If a provider of financial responsibility cancels or fails to renew for reasons other than incapacity of the provider as specified in rule 567—136.23(455B), the owner or operator must obtain alternate coverage as specified in this chapter within 60 days after receipt of the notice of termination. If the owner or operator fails to obtain alternate coverage within 60 days after receipt of the notice of termination, the owner or operator must notify the director of the Iowa department of natural resources of such failure and submit the name and address of the provider of financial assurance; the effective date of termination; and the evidence of the financial assurance mechanism subject to the termination maintained in accordance with subrule 136.20(2).

567—136.19(455B) Reporting by owner or operator.

136.19(1) An owner or operator must submit the appropriate forms listed in subrule 136.20(2) documenting current evidence of financial responsibility to the director of the Iowa department of natural resources.

a. Within 30 days after the owner or operator identifies a release from an underground storage tank required to be reported under 567—subrule 135.6(4) or 135.7(2);

b. If the owner or operator fails to obtain alternate coverage as required by this chapter, within 30 days after the owner or operator receives notice of:

(1) Commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a provider of financial assurance as a debtor,

(2) Suspension or revocation of the authority of a provider of financial assurance to issue a financial assurance mechanism,

(3) Failure of a guarantor to meet the requirements of the financial test,

(4) Other incapacity of a provider of financial assurance; or

c. As required by subrules 136.6(7) and 136.18(2).

136.19(2) An owner or operator must certify compliance with the financial responsibility requirements of this chapter as specified in the new tank notification form when notifying the appropriate state or local agency of the installation of a new underground storage tank under 567—subrule 135.3(3).

136.19(3) The director may require an owner or operator to submit evidence of financial assurance as described in subrule 136.20(2) or other information relevant to compliance with this chapter at any time.

567—136.20(455B) Record keeping.

136.20(1) Owners or operators must maintain evidence of all financial assurance mechanisms used to demonstrate financial responsibility under this chapter for an underground storage tank until released from the requirements of this chapter under rule 567—136.22(455B). An owner or operator must maintain such evidence at the underground storage tank site or the owner's or operator's place of work. Records maintained offsite must be made available upon request of the Iowa department of natural resources.

136.20(2) An owner or operator must maintain the following types of evidence of financial responsibility:

a. An owner or operator using an assurance mechanism specified in rules 567—136.6(455B) to 567—136.11(455B) or rules 567—136.13(455B) to 567—136.16(455B) must maintain a copy of the instrument worded as specified.

b. An owner or operator using a financial test or guarantee, or a local government financial test or a local government guarantee supported by the local government financial test must maintain a copy of the chief financial officer's letter based on year-end financial statements for the most recent completed financial reporting year. Such evidence must be on file no later than 120 days after the close of the financial reporting year.

c. An owner or operator using a guarantee, surety bond, or letter of credit must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

d. A local government owner or operator using a local government guarantee under subrule 136.15(4) must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

e. A local government owner or operator using the local government bond rating test under rule 567—136.13(455B) must maintain a copy of its bond rating published within the last 12 months by Moody's or Standard & Poor's.

f. A local government owner or operator using the local government guarantee under rule 567—136.15(455B), where the guarantor's demonstration of financial responsibility relies on the bond rating test under rule 567—136.13(455B), must maintain a copy of the guarantor's bond rating published within the last 12 months by Moody's or Standard & Poor's.

g. An owner or operator using an insurance policy or risk retention group coverage must maintain a copy of the signed insurance policy or risk retention group coverage policy, with the endorsement or certificate of insurance and any amendments to the agreements.

h. An owner or operator using a local government fund under rule 567—136.16(455B) must maintain the following documents:

(1) A copy of the state constitutional provision or local government statute, charter, ordinance, or order dedicating the fund, and

(2) Year-end financial statements for the most recent completed financial reporting year showing the amount in the fund. If the fund is established under subrule 136.16(3) using incremental funding backed by bonding authority, the financial statements must show the previous year's balance, the amount of funding during the year, and the closing balance in the fund.

(3) If the fund is established under subrule 136.16(3) using incremental funding backed by bonding authority, the owner or operator must also maintain documentation of the required bonding authority, including either the results of a voter referendum (under paragraph 136.16(3) "a"), or attested by the state attorney general as specified under paragraph 136.16(3) "b."

i. A local government owner or operator using the local government guarantee supported by the local government fund must maintain a copy of the guarantor's year-end financial statements for the most recent completed financial reporting year showing the amount of the fund.

j. An owner or operator using an assurance mechanism specified in rules 567—136.6(455B) through 567—136.16(455B) must maintain an updated copy of a certification of financial responsibility worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Financial Responsibility

[Owner or operator] hereby certifies that it is in compliance with the requirements of 567—Chapter 136 of the Iowa Administrative Code (IAC).

The financial assurance mechanism(s) used to demonstrate financial responsibility under 567—Chapter 136 IAC is (are) as follows:

[For each mechanism, list the type of mechanism, name of issuer, mechanism number, if applicable, amount of coverage, effective period of coverage and whether the mechanism covers "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases".]

[Signature of owner or operator]

[Name of owner or operator]
 [Title]
 [Date]
 [Signature of witness or notary]
 [Name of witness or notary]
 [Date]

The owner or operator must update this certification whenever the financial assurance mechanism(s) used to demonstrate financial responsibility change(s).

567—136.21(455B) Drawing on financial assurance mechanisms.

136.21(1) The director of the department of natural resources shall require the guarantor, surety, or institution issuing a letter of credit to place the amount of funds stipulated by the director, up to the limit of funds provided by the financial assurance mechanism, into the standby trust if:

a. The owner or operator fails to establish alternate financial assurance within 60 days after receiving notice of cancellation of the guarantee, surety bond, letter of credit, or, as applicable, other financial assurance mechanism; and

The director determines or suspects that a release from an underground storage tank covered by the mechanism has occurred and so notifies the owner or operator or the owner or operator has notified the director pursuant to rule 567—135.6(455B) or 567—135.7(455B) of a release from an underground storage tank covered by the mechanism; or

b. The conditions of paragraph 136.21(2) “*a*” or subparagraph 136.21(2) “*b*”(1) or 136.21(2) “*b*”(2) are satisfied.

136.21(2) The director of the Iowa department of natural resources may draw on a standby trust fund when:

a. The director makes a final determination that a release has occurred and immediate or long-term corrective action for the release is needed, and the owner or operator, after appropriate notice and opportunity to comply, has not conducted corrective action as required under rule 567—135.8(455B); or

b. The director has received either:

(1) Certification from the owner or operator and the third-party liability claimant(s) and from attorneys representing the owner or operator and the third-party liability claimant(s) that a third-party liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF VALID CLAIM

The undersigned, as principals and as legal representatives of [insert owner or operator] and [insert name and address of third-party claimant], hereby certify that the claim of bodily injury [and/or] property damage caused by an accidental release arising from operating [owner’s or operator’s] underground storage tank should be paid in the amount of \$[_____].

[Signatures]	[Signature(s)]
Owner or Operator	Claimant(s)
Attorney for	Attorney(s) for
Owner or Operator	Claimant(s)

(Notary) Date (Notary) Date; or

(2) A valid final court order establishing a judgment against the owner or operator for bodily injury or property damage caused by an accidental release from an underground storage tank covered by financial assurance under this chapter and the director determines that the owner or operator has not satisfied the judgment.

136.21(3) If the director of the department of natural resources determines that the amount of corrective action costs and third-party liability claims eligible for payment under paragraph 136.21(2) “*b*” may exceed the balance of the standby trust fund and the obligation of the provider of financial assurance, the first priority for payment shall be corrective action costs necessary to protect human health and the environment. The director shall pay third-party liability claims in the order in which the director receives

certifications under subparagraph 136.21(2) “b”(1) and valid court orders under subparagraph 136.21(2) “b”(2).

136.21(4) A governmental entity acting as guarantor under subrule 136.15(5), the local government guarantee without standby trust, shall make payments as directed by the director under the circumstances described in subrule 136.21(1), 136.21(2), or 136.21(3).

567—136.22(455B) Release from the requirements. An owner or operator is no longer required to maintain financial responsibility under this chapter for an underground storage tank after the tank has been permanently closed or undergoes a change-in-service or, if corrective action is required, after corrective action has been completed and the tank has been permanently closed or undergoes a change-in-service as required by rule 567—135.15(455B).

[ARC 5625C, IAB 5/19/21, effective 6/23/21]

567—136.23(455B) Bankruptcy or other incapacity of owner or operator or provider of financial assurance.

136.23(1) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming an owner or operator as debtor, the owner or operator must notify the director of the Iowa department of natural resources by certified mail of such commencement and submit the appropriate forms listed in subrule 136.20(2) documenting current financial responsibility.

136.23(2) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing financial assurance as debtor, such guarantor must notify the owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in rule 567—136.7(455B).

136.23(3) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a local government owner or operator as debtor, the local government owner or operator must notify the director of the Iowa department of natural resources by certified mail of such commencement and submit the appropriate forms listed in subrule 136.20(2) documenting current financial responsibility.

136.23(4) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing a local government financial assurance as debtor, such guarantor must notify the local government owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in rule 567—136.15(455B).

136.23(5) An owner or operator who obtains financial assurance by a mechanism other than the financial test of self-insurance will be deemed to be without the required financial assurance in the event of a bankruptcy or incapacity of its provider of financial assurance, or a suspension or revocation of the authority of the provider of financial assurance to issue a guarantee, insurance policy, risk retention group coverage policy, surety bond, letter of credit, or state-required mechanism. The owner or operator must obtain alternate financial assurance as specified in this chapter within 30 days after receiving notice of such an event. If the owner or operator does not obtain alternate coverage within 30 days after such notification, the owner or operator must notify the director of the Iowa department of natural resources within 10 days.

136.23(6) Rescinded IAB 4/17/02, effective 5/22/02.

567—136.24(455B) Replenishment of guarantees, letters of credit, or surety bonds.

136.24(1) If at any time after a standby trust is funded upon the instruction of the director with funds drawn from a guarantee, local government guarantee with standby trust, letter of credit, or surety bond, and the amount in the standby trust is reduced below the full amount of coverage required, the owner or operator shall by the anniversary date of the financial mechanism from which the funds were drawn:

- a. Replenish the value of financial assurance to equal the full amount of coverage required, or
- b. Acquire another financial assurance mechanism for the amount by which funds in the standby trust have been reduced.

136.24(2) For purposes of this rule, the full amount of coverage required is the amount of coverage to be provided by rule 567—136.4(455B). If a combination of mechanisms was used to provide the assurance

funds which were drawn upon, replenishment shall occur by the earliest anniversary date among the mechanisms.

These rules are intended to implement Iowa Code sections 455B.424 and 455B.474.

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CHAPTER 137
IOWA LAND RECYCLING PROGRAM AND
RESPONSE ACTION STANDARDS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—137.1(455H) Authority, purpose and applicability.

137.1(1) Authority. This chapter is adopted under the authority of Iowa Code Supplement chapter 455H. These rules establish the policy and procedures for the voluntary enrollment of contaminated property in the “land recycling program” established under chapter 455H. These rules also establish the response action standards which participants must meet in order to qualify for a no further action certificate and the statutory protections and immunities which follow from it.

137.1(2) Purpose. Consistent with the declaration of policy stated in Iowa Code Supplement section 455H.104, these rules are intended to achieve the dual objective of addressing the current and future risks associated with contaminated property and thereby enhancing the market conditions which can lead to development of these properties into their highest productive use. These objectives can in part be met through a program which encourages voluntary participation by persons who may have a legal duty to address, in whole or in part, the contamination within an affected area as well as persons who might not have a legal obligation but who have an interest in development of enrolled sites. These rules attempt to provide a degree of certainty in the response action process as an incentive to participants and as a means of assisting participants in quantifying their financial investment. The following statement of principles is intended as a guide both in the interpretation of these rules and as a statement of the department’s regulatory philosophy.

a. It is the objective of the department and these rules to establish a collaborative process between the participant(s) and department staff as the most effective means of achieving consensus and resolving disputes on issues which are not or cannot be fully defined and anticipated by rule.

b. Although participation in this program is voluntary, these rules establish basic standards which must be met in order to obtain regulatory closure from the department through issuance of a no further action certificate.

c. Although the scope of the response actions addressed under these rules may not in every case address all known or unknown releases within an affected area, it should be the objective of both the department and the participants to work together and to use all resources available to address all known releases within an affected area in the interest of protecting public health, safety and the environment as well as achieving regulatory finality.

137.1(3) Applicability. These rules shall apply only to releases of contaminants which are being addressed at enrolled sites. The department may in its discretion apply the response action rules in 137.4(455H) through 137.10(455H) to releases of contaminants at sites which are not enrolled. These rules do not in any way limit the statutory liabilities of participants or nonparticipants except as expressly provided within the context of enrollment and Iowa Code Supplement chapter 455H. Consistent with Iowa Code Supplement section 455H.505, these rules do not limit the authority of the department or the responsibility of statutorily responsible persons to provide notice of hazardous conditions under 567—Chapter 131 or to respond to new releases and undertake emergency response actions under 567—Chapter 133. For sites which are not enrolled, 567—Chapter 133 rules will remain in effect and for enrolled sites 567—Chapter 133 shall apply to the extent it is not inconsistent with this chapter.

567—137.2(455H) Definitions.

“Affected area” means any real property affected, suspected of being affected, or modeled to be likely affected by a release occurring at an enrolled site.

“Affiliate” means a corporate parent, subsidiary, or predecessor of a participant, a co-owner or co-operator of a participant, a spouse, parent, or child of a participant, an affiliated corporation or enterprise of a participant, or any other person substantially involved in the legal affairs or management of a participant as defined by the department.

“Background standard” means a standard which represents concentrations of contaminants which are naturally occurring or are generally present and not related to a readily identifiable release.

“Carcinogenic health risk” means the incremental risk of a person developing cancer over a lifetime (70 years) as a result of exposure to a hazardous substance, expressed as a probability such as one in a million (10^{-6}). The contaminant level for the probability value is derived from application of certain designated exposure assumptions and a slope factor.

“Contaminant” means any hazardous substance found in the various media of the environment.

“Contaminant of concern” means specific hazardous substances that are identified for evaluation in the risk assessment process. Identification can be based on their historical and current use at the site, detected concentrations in environmental media and their mobility, toxicity, and persistence in the environment.

“Cumulative risk” means a summation of cancer and noncancer risks, determined separately, based on exposure to multiple contaminants from the same medium and exposure of the same individual to contaminants in multiple media.

“Enrolled site” means any property which has been or is suspected to be the site of or affected by a release and which has been enrolled pursuant to this chapter by a participant.

“Environmental protection easement” means an institutional control created under Iowa Code Supplement section 455H.206 which is a statutorily authorized restriction on land use.

“Exposure pathway” means the course a contaminant of concern may take from its source area to an exposed organism. Each exposure pathway includes a source or release from a source, a point of exposure, and an exposure route.

“Exposure route” means the manner in which a contaminant of concern comes in contact with an organism (e.g., ingestion, inhalation, dermal contact).

“Free product” means a hazardous substance that is present as a nonaqueous phase liquid (e.g., liquid not dissolved in water) or is present as a solid in its original form as a product or waste material.

“Gross contamination” means contamination present at concentrations in an amount sufficient to reasonably expect that institutional or technological controls will not be adequately protective of human health or the environment.

“Group A, B, C, D and E chemicals” means hazardous substances which have been classified based on the weight of evidence of human carcinogenicity. Group A substances are carcinogenic to humans. Group B substances are likely to be carcinogenic to humans. Group C substances have suggestive evidence of human carcinogenicity, but not sufficient evidence to assess human carcinogenic potential. Data are inadequate to assess human carcinogenic potential for Group D substances. Group E substances are not likely to be carcinogenic to humans.

“Hazardous substance” means any substance or mixture of substances that presents a danger to the public health or safety and includes, but is not limited to, a substance that is toxic, corrosive, or flammable, or that is an irritant or that generates pressure through decomposition, heat, or other means. “Hazardous substance” may include any hazardous waste identified or listed by the administrator of the United States Environmental Protection Agency under the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976, or any toxic pollutant listed under Section 307 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous substance designated under Section 311 of the federal Water Pollution Control Act as amended to January 1, 1997, or any hazardous material designated by the Secretary of Transportation under the Hazardous Materials Transportation Act.

“Hydraulic conductivity” means a measure of the capacity of a porous medium (rock or soil) to transmit water. It is expressed as the volume of water that will flow through a unit length of a unit cross-sectional area of the porous medium in a unit time with a unit head loss.

“Institutional controls” means a nonphysical action which restricts land use to reduce or eliminate exposure to the contaminants of an affected area.

“Lifetime health advisory level (HAL)” means an advisory level established by the United States Environmental Protection Agency which represents the concentration of a single contaminant in drinking water which is not expected to cause adverse health effects over lifetime exposure.

“Maximum contaminant level (MCL)” means a standard for drinking water established by the United States Environmental Protection Agency under the Safe Drinking Water Act which is the maximum permissible level of a contaminant in water which is delivered to any user of a public water supply.

“No further action certificate” means the same as no further action letter in Iowa Code Supplement section 455H.301. It is a document issued by the department to the participant certifying no further response action is required at an enrolled site for those conditions classified as no further action except the monitoring or the maintenance of institutional or technological controls when required.

“No further action certification” means the department has determined an enrolled site has met all standards applicable for the identified hazardous substances and no further response action is required except the monitoring or the maintenance of institutional or technological controls when required.

“Noncancer health risk” means the potential for adverse systemic or toxic effects caused by exposure to noncarcinogenic hazardous substances expressed as the hazard quotient for a hazardous substance. A hazard quotient is the ratio of the level of exposure of a hazardous substance over a specified time period to a reference dose derived for a similar time period.

“Nonresidential land-use area” means any area that is not a residential land-use area.

“Participant” means any person who enrolls property pursuant to this chapter. A participant is a participant only to the extent the participant complies with the requirements of this chapter.

“Point of compliance” means a location selected within the affected area where the concentration of contaminants of concern must be at or below the target levels established for that point.

“Point of exposure” means the location at which an individual or population may come in contact with a contaminant of concern from the enrolled site.

“Protected groundwater source” means a saturated bed, formation, or group of formations which has a hydraulic conductivity of at least 0.44 meters per day (m/d) and a total dissolved solids concentration of less than 2,500 milligrams per liter (mg/l).

“Receptor” means an individual or population that is or may be affected by a release from the enrolled site.

“Reference dose,” expressed in units of milligrams per day exposure to the contaminant per kilogram of body weight of the exposed individual, means the amount of contaminant that an individual can ingest on a daily basis for a lifetime that is not likely to result in adverse noncancer health effects. A reference dose is protective of the entire human population, including sensitive subpopulations.

“Release” means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of a hazardous substance, including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance, but excludes all of the following:

1. Any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons.
2. Emission from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine.
3. The release of source, by-product, or special nuclear material from a nuclear incident, as those terms are defined in the federal Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under 42 U.S.C. § 2210 or, for the purposes of 42 U.S.C. § 9604 or any other response action, any release of source, by-product, or special nuclear material from any processing site designated under 42 U.S.C. § 7912(a)(1) or § 7942(a).
4. The use of pesticides in accordance with the product label.

“Residential land-use area” means an area zoned for residential use or an area where residential use currently exists, is planned, or is not otherwise precluded. In addition, a residential land-use area includes other areas where frequent, long-term, close contact with soils is likely to occur (e.g., playgrounds, sport fields, gardens, child care facilities).

“Response action” means an action taken to reduce, minimize, eliminate, clean up, control, assess, or monitor a release to protect the public health and safety or the environment. “Response action” includes, but is not limited to, investigation, excavation, removal, disposal, cleaning of groundwaters or surface waters, natural biodegradation, institutional controls, technological controls, or site management practices.

“Risk evaluation/response action document” means a document based on the site assessment for the enrolled site which includes a risk evaluation, proposed response action, and proposed compliance verification strategy for the enrolled site.

“Site assessment plan” means the optional plan submitted to the department which lays out the rationale and the steps to be followed in the conduct of a site assessment for the enrolled site.

“Site assessment report” means the report of the site assessment which defines the nature and extent of contamination, identifies likely exposure pathways, and allows for characterizing potential and current exposure risks posed by the enrolled site.

“Site-specific standard” means a standard for a specific site which represents a concentration of a contaminant in a media of an affected area at which exposure through a specific pathway is considered unlikely to pose a threat to human health, safety, or the environment given site-specific factors related to contaminant transport and likely exposure.

“Slope factor” means an upper bound estimate that approximates a 95 percent confidence limit of the increased cancer risk from a lifetime exposure to a contaminant. This estimate is expressed in units of the proportion of a population that is affected per milligram per day exposure to the contaminant per kilogram of body weight of the exposed individual.

“Statewide standard” means a standard which represents a concentration of a contaminant in a specific media of an affected area at which normal, unrestricted exposure through a specific exposure pathway is considered unlikely to pose a threat to human health, safety, or the environment.

“Surface water” means general use segments as provided in 567—paragraph 61.3(1)“a” and designated use segments of water bodies as provided in 567—paragraph 61.3(1)“b” and 567—subrule 61.3(5).

“Target level” means a concentration of a contaminant of concern required to establish compliance with background, statewide or site-specific standards.

“Target organ” means the biological organ(s) most adversely affected from exposure to the contaminant of concern. A “reference dose” used to calculate noncancer health risk is normally established based on adverse impact to a target organ or organs from exposure to the contaminant of concern.

“Technological control” means a physical action whose main purpose is to reduce or eliminate exposure to the contaminants of an affected area.

567—137.3(455H) Enrollment in land recycling program.

137.3(1) *Property eligible for enrollment.* Unless excluded by statute or this rule and subject to eligibility conditions specified in this chapter, property which has been or is suspected to be the site of or affected by a release of a hazardous substance as defined in Iowa Code Supplement section 455H.103 is eligible for enrollment beginning October 27, 1998. The following sites shall not be enrolled in the land recycling program:

a. Property with petroleum releases associated with underground storage tanks subject to regulation under Iowa Code chapter 455B, division IV, part 8; and department rules under 567—Chapter 135. (However, property affected by releases of “regulated substances” from underground storage tanks other than petroleum as defined in rule 567—135.2(455B) subject to regulation under 567—Chapter 135 may be enrolled under this chapter.) Property enrolled and affected by a release from underground storage tanks of regulated substances other than petroleum will be subject to the response action standards in this chapter rather than those in 567—135.8(455B) through 135.12(455B). See also 567—paragraph 135.1(3)“e.”

b. Property which has been placed or is proposed to be included on the national priorities list established pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9601 et seq. A property will be considered proposed at the time that a public notice of intent to list the property on the national priorities list is published in the Federal Register in accordance with 40 CFR 300.425.

c. An animal feeding operation structure as defined in Iowa Code section 455B.161.

d. Properties subject to administrative or judicial enforcement action by the department or the Environmental Protection Agency or subject to an administrative or judicial consent order addressing environmental conditions. These properties may be eligible for enrollment only with the written approval of and under such terms as determined by the enforcing agency.

e. Eligible properties which are or may be affected by or commingled with ineligible releases or conditions will be evaluated on a case-by-case basis to determine their appropriateness for enrollment. Only the eligible property and participant(s) will be afforded the benefits and immunities available under Iowa Code Supplement chapter 455H. Any protections provided by issuance of a no further action certificate will be limited by and may be subject to reopening due to future conditions associated with the ineligible release. Considerations for enrollment or exclusion include but are not limited to the following:

(1) The extent to which eligible releases and site conditions can be assessed and response action(s) designed and implemented independent of the ineligible releases and property.

(2) The extent to which the liability and other protections offered by Iowa Code Supplement chapter 455H and the conditions of a no further action certificate can reasonably be defined to apply to the eligible site without consideration of or dependence on future conditions associated with the ineligible release and property.

(3) The extent to which a participant is willing to conduct all response action(s) necessary to address the health, safety and environmental conditions implicated by both eligible and ineligible releases and conditions. The extent to which a nonparticipant responsible for the ineligible release and property can establish an intention and ability to cooperatively address and share costs associated with the commingled conditions and satisfy both the standards in this chapter and any other regulatory standards applicable to the ineligible release or condition.

137.3(2) Enrollment policy and procedures. Prior to enrollment, the applicant/participant(s) should have conducted sufficient preliminary site investigation and project planning to be prepared to show that a site is eligible for enrollment and the participant(s) is ready and capable of initiating and completing a response action in accordance with these rules. The applicant/participant(s) must submit a completed program application and participation agreement form as supplied by the department. The program application shall contain at least the following information.

a. An acknowledgment of access/control of the site signed by the participant if that person is a fee titleholder in the affected property; if the applicant/participant(s) is not a fee titleholder, then an acknowledgment by the fee titleholder of the affected property. If acknowledgment of access cannot be obtained, the participant must describe efforts to obtain access and reasons why it has been refused.

b. The name, address and other relevant information of each current and anticipated participant(s). The description should include a brief statement of the reasons for each person's participation including but not limited to that person's interest in and legal relationship to the property enrolled and the expected role and scope of any participation. Other persons who are not participants but who may have an interest in the project should be identified, such as state and local development agencies, community groups, and financing sources.

c. The applicant/participant(s) must demonstrate the presence of hazardous substances at concentrations that warrant response action(s) under the standards in this chapter. At a minimum the environmental condition to be addressed must be documented by the submission of a report which includes the following:

(1) Soil and groundwater samples of hazardous substances which have been analyzed by a laboratory certified under 567—Chapter 83 for the analytes being tested. The laboratory analysis should establish the presence of hazardous substances under conditions which exceed or are likely to exceed a statewide standard, if a statewide standard is available. Copies of the laboratory analytical report, boring logs and a site diagram showing the location of the sampling points in relation to the site should be included.

(2) A description of the current and historical uses of the property based on a reasonable and diligent inquiry. This must include a description of the following: known sources and probable locations of hazardous substances and probable location of the sources at the property which the participant proposes to address as part of the project; a general description of the historical uses of the property and probable hazardous substances which could reasonably be associated with past land use; and a general description of the surface characteristics of the property and surrounding areas such as current zoning, residential, commercial and industrial uses, and current uses of adjoining properties.

d. Any assessments or other reports relating to contamination at the property in excess of a statewide standard or reportable under 567—Chapter 131 which are known to and within the control of the applicant/

participant shall be submitted. If the applicant/participant intends to claim that information constitutes a privileged environmental audit as provided in 1998 Iowa Acts, House File 681, the applicant must notify the department of the claim and resolve the issue of privilege prior to submittal. The applicant shall not submit to the department a report or any part of a report which it claims to be privileged and any information submitted under this paragraph shall be deemed a nonprivileged submittal as provided in section 6, paragraph (1) “a,” of the Act. This provision does not relieve the applicant/participant of any obligation to notify the department of a hazardous condition as provided in Iowa Code section 455B.386 and rules under 567—Chapter 131.

e. A statement of the project objectives which includes the current use of the property, proposed development activities, and an expected time frame for meeting these objectives. The statement should include a general description of the scope of the proposed environmental condition to be addressed and a proposed schedule for initiation and submittal of site assessment activities pursuant to rule 137.8(455H). The statement should describe any foreseeable barriers toward achieving project objectives such as access to property, financing uncertainties, legal actions, allocation of responsibility amongst parties.

f. A list of all known permits and regulatory actions and directives associated with an environmental condition at the site. If any parcel of the proposed enrolled site is subject to any federal regulatory corrective action directives, administrative orders or judicial actions, these must be explained. The applicant must submit written proof that the appropriate federal regulatory agency has been notified of the applicant’s desire to participate in the Iowa land recycling program. Objections, concerns or issues which could lead to disputes regarding dual or conflicting jurisdiction should be resolved prior to application, if possible, and before admission.

g. The department will respond in writing within 60 days of receipt of the enrollment application. The department will notify the applicant/participant(s) whether the site has been accepted and an expected time line for assignment of the project to a manager. If the site is not accepted, the department will notify the applicant of the reason(s). Upon notification of admission, the property shall be considered enrolled. Once the department has assigned the enrolled site to a project manager, the department will enter into a participation agreement with the participant(s).

137.3(3) *Enrollment fees and oversight costs.* A nonrefundable enrollment fee of \$750 must be submitted with the program application. This fee is intended to cover the department’s cost of reviewing the program application and a minimum amount of subsequent oversight costs. Subsequent fees in excess of the minimum \$750 may be assessed for actual oversight costs incurred by the department as provided in this chapter. Department oversight activities may include, but are not limited to: review of documents, meetings with the participant(s), site visits, sampling, and laboratory costs related to verification of submitted materials. The total fees for oversight costs shall not exceed \$7,500 per enrolled site enrolled prior to July 1, 2018. For sites enrolled on or after July 1, 2018, the fee shall not exceed \$25,000 per enrolled site. Fees shall be assessed and collected as follows:

a. Hourly billing rate. Project oversight fees shall be based on an hourly rate to cover wages and overhead costs of personnel employed by the department in the land recycling program. The department shall calculate and publish on an annual basis an hourly billing rate at which oversight fees shall be calculated.

b. Quarterly payments. The department shall bill the participant(s) on a quarterly basis for additional oversight costs beyond the review of the application incurred by the department. The participant(s) shall pay the department within 30 days after receiving the department’s quarterly fee statement. If there is more than one participant, each shall be jointly and severally responsible for payment. The department will provide split billings if provided with an enforceable written contract allocating the fees amongst the participants.

c. Failure to pay required fees. If the participant(s) fails to pay department oversight fees that are required under this subrule, the department shall cease to provide oversight to the participant(s) and terminate enrollment of the site as described in subrule 137.3(7).

137.3(4) *Participation agreement.* All participants shall enter into a participation agreement. This agreement shall be executed at the time the project is assigned to a project manager. At a minimum, the agreement shall establish the following:

a. A requirement that the participant(s) agree and provide necessary documentation to ensure reasonable access to the affected property by department staff and other authorized representatives of the department.

b. A requirement that the participant(s) reimburse the department for the actual costs assessed as provided in 567—subrule 137.3(3).

c. A requirement that the participant(s) certify that the participant(s) has the financial means to complete the project based on an initial estimate of completion costs. The department may require modification and amendment of the financial certification at any stage in the project and may require the participant(s) to provide financial documentation as necessary to support the certification.

d. A requirement that the participation agreement include a general description of the scope of the project and the goals to be achieved, a general time frame for submission and review of documents in accordance with this chapter, allocation of responsibility amongst multiple participants and other appropriate milestones. Either the participant(s) or the department may request a meeting to develop a statement describing the scope, goals, and time frames for the project.

137.3(5) *Prioritization.* Eligible sites will be enrolled in the order in which they are received. The department reserves the right to elevate the priority of a given site if it determines the threat to the public health or environment or environmental conditions in combination with the development objectives consistent with Iowa Code Supplement section 455H.104 is significantly greater than those of sites with an earlier enrollment date.

137.3(6) *Withdrawal procedures.* Enrollment and continued participation in the program are voluntary. The participant(s) may withdraw the enrolled site and individual participants may withdraw from further participation in the land recycling program at any time upon written notice to the department. Any participant who withdraws an enrolled site from further participation in the program shall not be entitled to any refund or credit for the \$750 enrollment fee and shall be liable for any oversight costs actually incurred by the department up to the cap of \$7,500 per enrolled site. A participant who withdraws a site prior to completion of all response action(s) required by this chapter and issuance of a no further action certificate in accordance with rule 137.11(455H) forfeits all benefits and immunities provided by this chapter and Iowa Code chapter 455H. Prior to withdrawal, the participant(s) shall submit a plan, which must be approved by the department, for stabilization of conditions at the site or a justification for why further action to stabilize the site is not necessary. Participants shall be required to take such actions as the department determines necessary to stabilize conditions at the site, including, but not limited to, securing or properly abandoning monitoring wells, removing or otherwise properly disposing of all contaminated soil excavations, removing or properly disposing of exposed or exhumed contaminants, filling or properly fencing open excavations, and posting safety notices.

137.3(7) *Termination of enrollment.* Enrollment of the participant(s) may be terminated based on a finding of material noncompliance with department rules and statutory requirements including but not limited to the following:

a. Significant failure, after written notice, to comply with schedules for completion and submission of reports and implementation of response action(s) required by these rules or otherwise agreed upon in writing by the department and participants. Written requests for reasonable schedule extensions may be granted upon a showing of extenuating circumstances beyond the control of the participant(s) and the participant(s) agent/contractor.

b. Failure to proceed in a timely manner after written notice in performing the additional response action required due to a failure of technological and institutional controls pursuant to rule 137.7(455H).

c. Material misstatement or omission of fact in reports submitted to the department by the participant or agents of the participant.

d. Evidence that the site falls under one of the exclusion categories in subrule 137.3(1).

e. Failure to pay required fees to the department as required in subrule 137.3(3).

137.3(8) *Appeal rights.* The department will notify participant(s) of a denial of enrollment or of an intent to terminate enrollment and provide a statement of reasons. The participant(s) shall have a right to appeal the decision to deny enrollment or to terminate enrollment. Upon timely appeal, contested case procedures shall be initiated pursuant to 561—Chapter 7.

[ARC 4426C, IAB 5/8/19, effective 6/12/19]

567—137.4(455H) Background standards.

137.4(1) Purpose. This rule defines the basis and procedure for establishing background standards in groundwater, soil, surface water, and air. Background standards represent concentrations of contaminants that are naturally occurring or generally present and not related to a readily identifiable release. Background standards provide a baseline for assessing impacts of contaminant releases from within the affected area.

137.4(2) Determination of background standards. Background standards shall be based on sampling at appropriate site-specific background locations. Background sampling locations shall be outside the influence of any possible contamination associated with releases occurring on the property in which the enrolled site is located. Sufficient supporting information shall be provided to demonstrate the appropriateness of background sampling locations. Appropriateness for background sampling locations has two aspects which shall be addressed:

- a. Background samples shall be collected from a location which represents a true background condition with respect to the enrolled site. For example, a background groundwater sample will be collected from an upgradient location relative to groundwater movement.
- b. Background samples will represent conditions which are comparable to the contaminated media being addressed. In the case of soils, samples from the affected area and the background areas will be comparable in physical, chemical, and biological attributes.

Sampling conducted for the purpose of establishing a background standard shall meet quality criteria specified for the site assessment, rule 137.8(455H). The minimum number of samples to be collected from the medium of concern for which a background standard is being established shall be consistent with rule 137.10(455H), regarding demonstration of compliance.

567—137.5(455H) Statewide standards.

137.5(1) Purpose. This rule defines the basis and procedure for establishing statewide standards for contaminants in groundwater, soil, and surface water. Statewide standards for groundwater and soil represent concentrations of contaminants in these media at which normal exposure via ingestion and dermal contact with soil is considered unlikely to pose a threat to human health. Statewide standards for surface water are based on protection of aquatic life and protection of human health. This rule also describes how air standards are to be addressed.

137.5(2) Scope. Statewide standards described herein address what are considered to be the most likely, normal exposure situations. Statewide standards for groundwater address direct exposure via ingestion to individual contaminants in the media of concern only. Statewide standards for soil address direct exposure to individual contaminants via ingestion and dermal contact. In the event exposure to multiple contaminants may occur or exposure from more than one medium may occur, statewide standards alone may not be protective of human health; therefore, cumulative risk standards must be met in accordance with subrule 137.10(7). In addition, the department may deny the use of the statewide standards prescribed herein and require the use of site-specific standards based on site-specific conditions pursuant to subrule 137.6(10).

Examples of exposure concerns not anticipated by the statewide standards might include, but are not limited to:

- Significant plant uptake of contaminants from soil or groundwater;
- Contaminants entering drinking water lines from contact with soil or groundwater;
- Ecological concerns, other than for surface water;
- Groundwater in a nonprotected groundwater source that is used or likely to be used for drinking water or other use.

137.5(3) Establishment of risk-based contaminant concentrations.

a. *Risk-based concentration formula.* Risk-based contaminant concentrations for soil and groundwater, except lead, shall be computed using the following formula, where appropriate:

(Formula I)

$$C = \frac{RF \times AT \times 365 \text{ days/year}}{\text{Abs} \times [(ER_c \times EF_c \times ED_c) \div BW_c + (ER_a \times EF_a \times ED_a) \div BW_a] \times CF}$$

NOTE: When a risk-based concentration is computed for two routes of exposure to the same medium (e.g., soil oral exposure and soil dermal exposure), the composite risk-based concentration equals the multiple of the risk-based concentration for each route of exposure divided by the sum of the risk-based concentration for each route of exposure.

Where: C = Concentration of contaminant (soil: mg/kg, water: mg/l)

RF = Risk factor

For protection from cancer health risks:

$RF = TR \div SF$

Where: TR = Target cancer risk (unitless)

SF = Slope factor [(mg/kg)/day]⁻¹ for a route of exposure; see paragraph “c” for source.

For protection from noncancer health risks:

$RF = THQ \times RfD$

Where: THQ = Target hazard quotient (unitless)

RfD = Reference dose (mg/kg)/day for a route of exposure; see paragraph “c” for source.

AT = Averaging time (years); time over which exposure is averaged and potential adverse effects may occur

Abs = Absorption factor (unitless); portion of exposed contaminant absorbed by the body

ER_c = Exposure rate by a child (soil: mg/day, water: l/day)

EF_c = Exposure frequency by a child (days/year)

ED_c = Exposure duration by a child (years)

BW_c = Body weight of exposed child (kg)

ER_a = Exposure rate by an adult (soil: mg/day, water: l/day)

EF_a = Exposure frequency by an adult (days/year)

ED_a = Exposure duration by an adult (years)

BW_a = Body weight of exposed adult (kg)

CF = Conversion factor: 10⁻⁶ kg/mg for soils; 1 (unitless) for water

b. *Carcinogenic classification of chemicals.* The potential carcinogenicity of chemicals will be based on the weight-of-evidence classification system utilized by the U.S. Environmental Protection Agency (EPA). Risk-based concentrations will be based on cancer health effects for individual chemicals that are classified as Group A or Group B. The risk-based concentration for an individual chemical will be based on noncancer health effects for chemicals that are classified as Group C, Group D or Group E. In the absence of such classification for a chemical, the Group D classification will be assumed. Noncancer risks for a Group A or Group B chemical will be included in the determination of cumulative noncancer risk in accordance with subrule 137.10(7), if a reference dose exists for that chemical. Cancer risk associated with a Group C chemical shall be included in the determination of cumulative cancer risk in accordance with subrule 137.10(7), if a cancer slope factor exists for that chemical.

c. *Source of toxicity values.* EPA's Integrated Risk Information System (IRIS) shall be the primary source of information on toxicity factors (e.g., oral reference doses and oral slope factors), carcinogenic classification for chemicals, and the target organs. Such information that is not available on IRIS shall be obtained from other sources consistent with current EPA guidelines. The Iowa department of public health shall be consulted regarding toxicity values not available on IRIS. Absorption factors for dermal soil exposure shall be based on best available information, which will usually be obtained from EPA guidance documents.

137.5(4) Statewide standards for groundwater.

a. *Protected groundwater source.* Statewide standards for groundwater in a protected groundwater source will be the enforceable Maximum Contaminant Level (MCL) established by the EPA pursuant to the Safe Drinking Water Act, if an MCL exists. If no enforceable MCL exists, the statewide standard for chemicals will be the lifetime health advisory level (HAL) as provided in the latest “Drinking Water Regulations and Health Advisories” by the EPA's Office of Water or equivalent. If no MCL or HAL exists,

the statewide standard for a chemical will be calculated using Formula I and input variables for groundwater ingestion in accordance with Table I.

b. Groundwater in a nonprotected groundwater source. The statewide standard for a chemical in groundwater in a nonprotected groundwater source will be five times the statewide standard for the chemical in a protected groundwater source or a risk-based concentration using Formula I with input variables specified in Table I, whichever is larger. The statewide standards for groundwater in a nonprotected groundwater source are based on groundwater ingestion only.

Table I
Input Variables for Risk-Based Statewide Standards for Groundwater
from Protected and Nonprotected Groundwater Sources

<u>Parameter</u>	<u>Units</u>	<u>Cancer Group</u>	<u>Protected</u>	<u>Nonprotected</u>
TR	unitless	A, B	5×10^{-6}	1×10^{-4}
SF	$[(\text{mg/kg})/\text{day}]^{-1}$	A, B, C	Chem.-spec.	Chem.-spec.*
THQ	unitless	C	0.02	0.1/1*
		D, E	0.2	1
RfD	(mg/kg)/day	C, D, E	Chem.-spec.	Chem.-spec.
AT	years	A - E	70	70
Abs	unitless	A - E	1	1
ER _c	l/day	A - E	1	1
EF _c	days/yr	A - E	0	0
ED _c	years	A - E	6	6
BW _c	kg	A - E	15	15
ER _a	l/day	A - E	2	2
EF _a	days/yr	A - E	365	365
ED _a	years	A - E	70	70
BW _a	kg	A - E	70	70
CF	unitless	A - E	1	1

*The risk-based concentration using Formula I for Cancer Group C chemicals that have an SF value established per paragraph 137.5(3) "c" will be the larger of a value based on the risk factor for protection from noncancer health risks with a THQ = 0.1 or the risk factor for protection from cancer health risks. Risk-based concentrations using Formula I for Cancer Group C chemicals that do not have an SF value established per paragraph 137.5(3) "c" will be a value based on the risk factor for protection from noncancer health risks with a THQ = 1.

137.5(5) Statewide standards for soil. Statewide standards for chemicals in soil, except lead, will be calculated using Formula I based on incidental ingestion of soil and dust and dermal contact with soil with input variables in accordance with Table II. The statewide standard for lead in soil shall be 400 mg/kg.

Table II
Input Variables for Statewide Soil Standards

<u>Parameter</u>	<u>Units</u>	<u>Cancer Group</u>	<u>Route of Exposure</u>	
			<u>Oral</u>	<u>Dermal</u>
TR	unitless	A, B	5×10^{-6}	5×10^{-6}
SF	$[(\text{mg/kg})/\text{day}]^{-1}$	A, B, C*	Chem.-spec.	Chem.-spec.
THQ	unitless	C*	0.1/1	0.1/1
		D, E	1	1
RfD	(mg/kg)/day	C, D, E	Chem.-spec.	Chem.-spec.
AT	years	A, B	70	70
		C, D, E	6	6
Abs	unitless	A - E	1	Chem.-spec.
ER _c	mg/day	A - E	200	560**
EF _c	days/yr	A - E	350	350

ED _c	years	A - E	6	6
BW _c	kg	A - E	15	15
ER _a	mg/day	A - E	100	400**
EF _a	days/yr	A - E	350	350
ED _a	years	A, B	24	24
		C, D, E	0	0
BW _a	kg	A - E	70	70
CF	kg/mg	A - E	10 ⁻⁶	10 ⁻⁶

*The risk-based concentration using Formula I for Cancer Group C chemicals that have an SF value established per paragraph 137.5(3) “c” will be the larger of a value based on the risk factor for protection from noncancer health risks with a THQ = 0.1 or the risk factor for protection from cancer health risks. Risk-based concentrations using Formula I for Cancer Group C chemicals that do not have an SF value established per paragraph 137.5(3) “c” will be a value based on the risk factor for protection from noncancer health risks with a THQ = 1.

**Dermal exposure rate is based on 2,800 cm² of exposed skin on a child with 0.2 mg/cm² of soil adhering to the child’s skin and 5,700 cm² of exposed skin on an adult with 0.07 mg/cm² of soil adhering to the adult’s skin per each dermal exposure event. A dermal exposure event is assumed to be one event per day of exposure.

137.5(6) Statewide standards for surface water. Water quality standards pursuant to 567—Chapter 61 shall be considered statewide standards for surface water. If a promulgated water quality standard does not exist for a contaminant of concern, the department may establish an appropriate standard in a manner consistent with 567—Chapter 61.

137.5(7) Statewide standards for air. Ambient air quality standards pursuant to 567—Chapter 28 constitute statewide standards for air. Air emission sources must meet air quality emission standards as set forth in 567—Chapters 20 through 31 inclusively, as applicable. Any relevant air quality standard that is subsequently promulgated by statute or rule shall become a statewide standard for air upon the effective date of adoption by the state. In the absence of applicable, adopted standards, site-specific air standards must be met, in accordance with subrule 137.6(9), when air quality issues are addressed at a site.

137.5(8) Point of exposure for statewide standards. The point of exposure associated with the use of only statewide standards in the determination of compliance will be assumed to be anywhere and everywhere, except for surface water. The point of exposure associated with the use of statewide standards for surface water will be assumed to be the point of groundwater or other site runoff immediately before it discharges to the surface water body.

137.5(9) Practical quantification limits. In no case will the statewide standard be less than the practical quantification limit, as determined by the department.

137.5(10) Maintenance of statewide standards. The toxicity values, absorption factors for dermal exposure to soils, and promulgated standards that are a basis for statewide standards are subject to periodic revision due to actions not governed under this rule. The department in conjunction with the Iowa department of public health will maintain a guidance document that contains a current list of toxicity values, absorption factors for dermal exposure to soils, target organs for cumulative noncarcinogenic health risks, promulgated standards, and the resultant statewide standards that will be readily available to the public. This guidance document will reference all the sources of the information. In the absence of a dermal slope factor or a dermal reference dose for a chemical, the oral slope factor or oral reference dose will be used with adjustments made to account for differences in oral and dermal absorption rates in accordance with current EPA guidance. Statewide standards for individual sites will be locked-in at the beginning of the site assessment process (rule 137.8(455H)). If a statewide standard does not exist for a chemical, it will be the department’s responsibility to establish a statewide standard, pursuant to subrules 137.5(4) and 137.5(5), for groundwater and soil, and to add the newly established statewide standard to the comprehensive list of statewide standards in the guidance document maintained by the department.

567—137.6(455H) Site-specific standards.

137.6(1) Purpose. As opposed to statewide standards, site-specific standards are derived by applying exposure and risk assumptions applicable to the conditions at a particular site. Like statewide standards, site-specific standards must always be shown to be protective of public health and safety and the environment. Statewide standards may be used in combination with site-specific standards to address different exposure pathways. Site-specific standards may be required to address exposure pathways which the department determines must be evaluated to be protective of human health, safety and the environment and for which statewide standards have not been established under rule 137.5(455H). Site-specific standards may involve development of target levels for contaminants of concern based on site-specific exposure assumptions for use in lieu of background or statewide standards. Site-specific standards may also include consideration of the actual or potential location where exposure to contaminants occurs or may occur, the likelihood of an exposure occurring, and the overall magnitude and extent of contamination. Site-specific standards may involve use of site-specific target levels for contaminants of concern alone or in conjunction with other site-specific criteria, such as the location where the standard is applied.

137.6(2) General provisions.

a. This rule establishes a minimum protocol that must be met at all enrolled sites which have not established compliance by application of background or statewide standards. Groundwater ingestion and soil ingestion pathway standards under this rule must be evaluated. Surface water and air quality standards under subrules 137.6(8) and 137.6(9) must be met whenever exposure concerns are evident and the participant or the department determines these pathways may present an unacceptable risk for current or future exposures. This rule is not intended to preclude the department or the participant from addressing other exposure pathways, and the department expressly reserves the right to require evaluation of other exposure pathways and compliance with site-specific standards developed for them, such as dermal contact, ingestion of vegetables containing contaminants from soil or irrigation water, migration of contaminants from groundwater or soil into water distribution lines or into air in a confined space, migration of contaminants from soil to groundwater, and migration of contaminants in a nonprotected groundwater source to a protected groundwater source. Participants must establish compliance with standards applicable to all exposure pathways required by the department under this rule in order to qualify for no further action classification under rule 137.11(455H) unless granted a variance as provided in Iowa Code section 455H.205.

b. Site-specific standards are subject to the approval of the department. Assurances in the form of technological or institutional controls (rule 137.7(455H)) will be required, as needed, to ensure continued protectiveness of site-specific standards.

c. The following subrules provide options for the site-specific standards. The participant may select any of these options, or combinations thereof, for use as site-specific standards.

137.6(3) Site-specific groundwater point of exposure. A site-specific groundwater standard may be an appropriate target level applied at groundwater points of exposure that are limited by technological or institutional controls.

a. A point of exposure for groundwater is a location within the affected area where a well exists or could be placed (potential point of exposure). Where technological or institutional controls are determined to effectively restrict the placement of groundwater wells, the points of exposure apply outside the area of restriction. A sufficient number of points of exposure may be established for determining compliance such that compliance with appropriate target levels at these points will ensure compliance at all points of exposure. Normally a compliance point of exposure will be a location at the boundary of the area restricted by an institutional control where a groundwater well could be installed that would have the highest contaminant concentration. Generally more than one compliance point of exposure must be established due to uncertainties, such as spatial and temporal variabilities in groundwater flow and contaminant occurrence.

b. Target levels. The point of exposure target level for drinking water wells is the statewide standard applicable to groundwater ingestion or an alternative site-specific target level approved under subrule 137.6(10) or 137.6(11). The point of exposure target level for non-drinking water wells is the statewide standard applicable to nonprotected groundwater or an alternative site-specific target level approved under

subrule 137.6(10) or 137.6(11). The point of exposure target level for nonused groundwater meeting the conditions in subrule 137.6(5) is the statewide standard for a nonprotected groundwater source.

c. Nonprotected groundwater sources. A nonprotected groundwater source which is affecting or likely to affect an existing drinking water well shall be required to meet the same site-specific standards, including point of exposure target level(s), as applied to a protected groundwater source.

d. Unless conditions can be demonstrated to be stable, predictive techniques in accordance with subrule 137.9(4) must be used to determine the future effects of groundwater contamination on existing drinking and non-drinking water wells and to determine the area predicted to exceed the point of exposure target level(s) where wells could be installed. When using predictive techniques, determining the location(s) where the applicable point of exposure target level is expected to be exceeded may involve comparison of the appropriate numerical standard to the predicted contaminant concentration at a passive monitoring well at the groundwater point of exposure. Alternatively, predictive techniques using site-specific models (paragraph 137.9(4) "b") may involve simulation of pumping at a well located at the point of exposure, in which case the pumping rate used in the simulation shall be the rate that is reasonably possible for the area that yields water with the highest contaminant concentration. In absence of site-specific justification for doing otherwise, long-term pumping will be assumed to be at a rate of 100 gallons per day; the sustainable yield, if less than 100 gallons per day; or a reasonable, higher rate, if such a rate results in higher contaminant concentration.

e. Institutional controls. For a protected groundwater source or a nonprotected groundwater source as described in paragraph "b" above, institutional controls must be shown to effectively prohibit the installation of wells for the period of time in which contaminant concentrations might otherwise be expected to result in an exceedance of the appropriate target levels. For a nonprotected groundwater not described as in paragraph "b" above, a less stringent standard of effectiveness as well as the type of future well installation to be restricted may be utilized for those areas of potential concern. Unless there is a history of usage of what might otherwise be considered nonprotected groundwater or there is uncertainty as to the uniformity in the hydraulic characteristics of the nonprotected groundwater source, notice to the authority responsible for permitting private wells under 567—Chapters 39 and 49 may be adequate especially if combined with a municipal or county ordinance prohibiting installation of private wells based on the availability of a public water supply.

137.6(4) *Site-specific groundwater point of compliance.* A site-specific standard may be established for a site-specific groundwater point of compliance that is different from a compliance point of exposure. A site-specific groundwater point of compliance must be used in conjunction with all groundwater compliance points of exposure pursuant to subrule 137.6(3) to provide an alternative monitoring location. Target levels for contaminants of concern at a site-specific groundwater point of compliance must be established using predictive techniques as specified in subrule 137.9(4). A target level established for a groundwater point of compliance must ensure that the appropriate target level at the groundwater compliance points of exposure will be achieved. A groundwater point of compliance shall be located on the contaminant migration path from the contaminant source to the point of exposure to the maximum extent practicable.

137.6(5) *Nonused groundwater in a protected water source.* Statewide standards for groundwater in a nonprotected groundwater source, pursuant to paragraph 137.5(4) "b," may be used as target levels for contaminants in an otherwise protected groundwater source when groundwater in the affected area is not used and is not likely to be used in the future in accordance with the following. It must be demonstrated to the satisfaction of the department that contaminants from the enrolled site do not currently, and likely will not in the future, have an impact on any existing water supply well. Any detection, or predicted detection above the practical quantification limit, of a chemical that can be attributed to a release from the enrolled site will be considered to constitute an impact. In addition, it must be demonstrated to the satisfaction of the department that the impacted or potentially impacted aquifer is not a locally significant water resource. Factors that will go into this determination may include, but are not limited to:

- Existence of a nonimpacted public water supply in the potentially affected area;
- General availability of other water resources in the vicinity;
- Plans for development of public water supplies in the vicinity;

- Potential for use of the impacted aquifer as a water supply (e.g., yield, natural water quality); and
- Identification of the aquifer(s) commonly used for water supply in the vicinity.

A local ordinance prohibiting installation of private drinking water wells or notification to the local water utility and water permitting authority, or both, may constitute acceptable institutional controls for site-specific standards under this subrule.

The target levels that may be used in accordance with this subrule are based solely on groundwater ingestion. Compliance with this site-specific standard will not guarantee that contaminants in groundwater may not cause unacceptable exposure via other pathways (e.g., groundwater to air in a confined space, groundwater to surface water, or groundwater to a water distribution line).

137.6(6) *Site-specific soil standards based on land use and soil depth.* Site-specific soil standards based on land use and soil depth in conjunction with institutional controls may be used. Predetermined site-specific soil exposures based on land use and soil depth are provided in the following paragraphs. Lists of resulting site-specific soil standards for individual contaminants for these land-use and soil-depth categories will be maintained by the department in a guidance document and made readily available to the public. Use of these site-specific soil standards must be supported by appropriate institutional controls. Site-specific soil standards based on land use and soil depth, as described herein, address ingestion of and dermal contact with soil. Compliance with these standards will not guarantee that contaminants in soils may not cause unacceptable exposure via other pathways (e.g., ecological exposure, soil to groundwater, subsurface movement of vapors from soil to indoor air). In addition, the risk factors that form the bases for site-specific soil standards for individual contaminants, with the exception of some Group C chemicals, are the same as acceptable cumulative risk factors allowed for exposure to multiple contaminants in the same medium and multiple media. Therefore, compliance with site-specific soil standards for individual contaminants may not result in compliance with cumulative risk requirements pursuant to rule 137.10(455H).

a. Deep soil in a residential land-use area. Site-specific soil standards for deep soils equaling ten times the statewide standard for soils, except for lead, may be used. The site-specific standard for lead in deep soil in a residential land-use area shall be calculated using the most current version of EPA's Exposure Model for Assessing Risk Associated with Adult Exposures to Lead in Soil. Soils at a depth of ten feet and greater will normally be classified as deep soils. The department may deny the use of a deep soil standard associated with a residential land use or require a modification to the standard due to site-specific considerations including topography, development potential, and actual development plans. The use of a site-specific standard for deep soil in a residential land-use area shall be supported by an institutional control that permanently records the existence of contaminants above statewide standards in deep soils and restricts excavation resulting in deep soils being placed on the surface.

b. Nonresidential land use. The nonresidential land-use designation will be applicable to areas that are not classified as residential. Site-specific soil standards, except for lead, for nonresidential areas may be based on Formula I using the risk and exposure factors shown in Table III. A value of 1,100 mg/kg may be used as a site-specific soil standard for lead in soils less than 2 feet deep in a nonresidential land-use area. In lieu of this default site-specific lead standard, a site-specific standard for lead in soil less than 2 feet deep may be calculated using the most current version of EPA's Exposure Model for Assessing Risk Associated with Adult Exposures to Lead in Soil. The site-specific standard for lead in soils greater than 2 feet deep in a nonresidential land-use area shall be calculated using the most current version of EPA's Exposure Model for Assessing Risk Associated with Adult Exposures to Lead in Soil. The use of a nonresidential land-use classification must be supported by an environmental protection easement that prevents a change in land use to residential.

Table III

Input Variables for Site-Specific Soil Standards for Individual Contaminants for Nonresidential Area Land-Use Designation

Parameter	Units	Cancer Group	Soil Depth (ft.)	
			≤ 2	≥ 2
TR	unitless	A, B	1×10^{-4}	1×10^{-4}
SF (oral)	$[(\text{mg/kg})/\text{day}]^{-1}$	A, B, C*	Chem.-spec.	Chem.-spec.

Parameter	Units	Cancer Group	Soil Depth (ft.)	
			≤ 2	≥ 2
SF (dermal)	$[(\text{mg/kg})/\text{day}]^{-1}$	A, B, C*	Chem.-spec.	Chem.-spec.
THQ	unitless	C*	0.1/1	0.1/1
		D, E	1	1
RfD (oral)	(mg/kg)/day	C, D, E	Chem.-spec.	Chem.-spec.
RfD (dermal)	(mg/kg)/day	C, D, E	Chem.-spec.	Chem.-spec.
AT	years	A, B	70	70
		C, D, E	1	1
Abs (oral)	unitless	A - E	1	1
Abs (dermal)	unitless	A - E	Chem.-spec.	Chem.-spec.
ER _c	mg/day	A - E	0	0
EF _c	days/yr	A - E	0	0
ED _c	years	A - E	0	0
BW _c	kg	A - E	15	15
ER _a (oral)	mg/day	A, B	100	330
		C, D, E	330	330
ER _a (dermal)	mg/day	A, B	660**	990**
		C, D, E	660**	990**
EF _a	days/yr	A, B	225	200
		C, D, E	200	200
ED _a	years	A, B	25	1
		C, D, E	1	1
BW _a	kg	A - E	70	70
CF	kg/mg	A - E	10^{-6}	10^{-6}

NOTE: Oral and dermal factors are the same unless otherwise noted.

*The risk-based concentration using Formula I for Cancer Group C chemicals that have an SF value established per paragraph 137.5(3) "c" will be the larger of a value based on the risk factor for protection from noncancer health risks with a THQ = 0.1 or the risk factor for protection from cancer health risks. Risk-based concentrations using Formula I for Cancer Group C chemicals that do not have an SF value established per paragraph 137.5(3) "c" will be a value based on the risk factor for protection from noncancer health risks with a THQ = 1.

**Dermal exposure rate is based on 3,300 cm² of exposed skin on an adult with 0.2 mg/cm² of shallow soil adhering to the skin and 0.3 mg/cm² of deep soil adhering to the skin per each dermal exposure event. A dermal exposure event is assumed to be one event per day of exposure.

c. *Restricted access land use.* Rescinded IAB 7/21/04, effective 8/25/04.

137.6(7) *Site-specific cumulative risk for residential exposures to soil.* A cumulative risk standard may be used as a site-specific standard for soil in lieu of statewide standards that are provided in subrule 137.5(5) for individual chemicals and soil. Cumulative risk will be determined using the toxicity values and exposure factors (i.e., the input variables less TR and THQ) from Table II in subrule 137.5(5). Criteria for compliance with the cumulative risk standard are specified in subrule 137.10(7). No institutional control will be required with the use of this site-specific standard.

137.6(8) *Site-specific surface water standards.* The department will establish site-specific surface water standards at the request of the participant. The participant shall provide the department with information necessary to make this determination upon request from the department. Site-specific surface water standards will be generally equivalent to effluent limitations under a National Pollutant Discharge Elimination System (NPDES) permit pursuant to 567—Chapter 62. Mixing zones and allocation of contaminant loads in a surface water body will be considerations in attainment of in-stream water quality standards. If the site-specific surface water quality standards are met, best practical control technology currently available will not be imposed.

137.6(9) Site-specific air standards. If there are air quality concerns at a site, they will normally be addressed with site-specific standards until such time as ambient air quality or source-specific standards are adopted for hazardous air pollutants.

a. Explosivity. In no case shall contaminants from the enrolled site cause an explosivity level in a confined space of greater than 10 percent of the lower explosivity limit.

b. Background. In addition to the establishment of a background standard pursuant to rule 137.4(455H), a site-specific air standard may be set at twice the typical background level based on published information for a comparable setting, if approved by the department.

c. Health risk. The U.S. Department of Labor Occupational Safety and Health Administration (OSHA) limits for air contaminants pursuant to 29 CFR 1910, Subpart Z, may be utilized for site-specific standards in workplace settings where the OSHA standards are applicable and the contaminant of concern is used. For locations where OSHA standards are not applicable, site-specific standards for air in a confined space shall be risk-based using the chemical-specific toxicity values of inhalation unit risk (UR) and inhalation reference concentration (RfC) determined in accordance with paragraph 137.5(3)“c.” Formulas II and III shall be used to calculate risk-based, site-specific air standards based on carcinogenic and noncarcinogenic effects, respectively, where C is the risk-based contaminant concentration in air. If a value for both RfC and UR exists for a compound, the risk-based site-specific standard will be the smaller of C resulting from Formulas II and III.

(Formula II)

$$C = AF \times TR \div UR$$

(Formula III)

$$C = AF \times RfC$$

The UR and RfC toxicity values are based on a continuous exposure of 20 cubic meters per day by a 70 kg adult. The adjustment factor (AF) in Formulas II and III may be used to adjust for site-specific exposure conditions. A target cancer risk (TR) of 10^{-4} shall be used unless another value is approved by the department.

d. Institutional or technological controls. Institutional or technological controls may be used to prevent future exposure to contaminants in air in confined spaces and will be required to prevent residential use of the affected area when a nonresidential air standard is used.

137.6(10) Site-specific standards based on site-specific factors. Numerical site-specific standards (i.e., target levels) for groundwater or soil may be established using site-specific exposure factors in Formula I. Site-specific pumping rates greater than specified in paragraph 137.6(3)“d” herein may be used when approved by the department. Site-specific exposure factors must be approved by the department. For the department to approve any such site-specific factor there must be well documented rationale for doing so and appropriate institutional or technological controls must be provided.

137.6(11) Site-specific standards or approaches not anticipated by this rule. Nothing in this rule precludes the use of site-specific standards derived in some way not anticipated by this rule, provided that the rationale is adequately presented and the approach is both approved by the department and provides a level of protection comparable to standards set forth under this rule.

567—137.7(455H) Institutional and technological controls.

137.7(1) Technological controls. The purpose of a technological control is to effectively sever a pathway by use of technologies such that an applicable receptor could not be exposed to hazardous substances above an applicable target risk level. Subject to limitations in this chapter, technological controls are an acceptable response action either alone or in combination with other remediation systems and institutional controls. The purpose of technological controls may be to control plume migration through use of containment technologies, barriers, or other methods, as an interim or permanent response action or to permanently sever a pathway to a receptor. Technological controls may also be appropriate to treat or control contamination at the point of exposure. Any technological control proposed as a permanent response action option without meeting the reduction in contaminant concentrations objectives must establish that the pathway to a receptor will be permanently severed or controlled. The effectiveness of a technological control must be monitored under a department-approved plan. The department may require

reasonable proof of financial assurance when necessary to ensure that a technological control remain effective.

137.7(2) *Institutional controls.* The purpose of an institutional control is to restrict access to or use of an affected area such that an existing or future receptor could not be exposed to hazardous substances addressed by the controls for as long as the target level is exceeded at applicable points of exposure and compliance. Single or multiple institutional controls may be used alone or in combination and may also be employed with technological controls and response action to effectively achieve, maintain and enforce an approved level of risk reduction and risk management. The following enumeration of types of institutional and technological controls is not a finding that each is per se an effective control. The effectiveness of any institutional or technological control or combination of controls must be evaluated on a case-by-case basis and in accordance with specified conditions in this chapter. Institutional and technological controls include:

- a.* A state or federal law or regulation which can be shown to effectively achieve, maintain and enforce the required land-use restrictions and controls.
- b.* An ordinance of any political subdivision of the state which can be shown to effectively achieve, maintain and enforce the required land-use restrictions and controls.
- c.* A contractual obligation recorded and executed in a manner satisfying Iowa Code chapter 558. Recorded notices and affidavits, including a no further action letter as provided in rule 137.11(455H), which do not create rights or obligations or restrict land use but serve to put current and future property owners on notice of present or future conditions within the affected area.
- d.* A control which the participant demonstrates to the department reduces or manages the risk from a release through the period necessary to comply with the applicable standards, including but not limited to informational devices such as public notices, informational registries, notices to regulatory authorities and continuing site activities such as periodic inspections, equipment repair and maintenance, and soil and groundwater monitoring.
- e.* An environmental covenant established in accordance with 2005 Iowa Code Supplement chapter 455I, 2005 Iowa Code Supplement section 455H.206, and 567—Chapter 14.

137.7(3) *Environmental covenants.* Participants may submit a draft environmental covenant to the department for review and approval in accordance with 567—Chapter 14.

137.7(4) *Public notification.* The department shall prepare a public notice prior to approval of any no further action classification which is conditioned upon use of institutional or technological control(s). The public notice will describe the results of the risk assessment conducted in the affected area, any proposed or completed response action, the vertical and horizontal extent and concentrations of existing soil and groundwater contamination in the affected area, and the actual and potential pathways of exposure the controls are intended to address. The notice will describe the purpose of the institutional and technological control(s) being proposed and the predicted period of coverage. The notice will provide the opportunity for members of the public to review department files, make written comments and request a public hearing. The department may schedule a public hearing on the basis of requests from the public and when it determines the particular remedial options proposed for a site warrant public consideration, for example, when issues of whether and to what concentrations gross contamination should be allowed to remain within the affected area given the relative effectiveness of institutional controls and other community concerns and development plans.

- a.* The notice will be served by certified mail on all property owners that the actual or modeled data indicates are or may be affected by the present or future conditions addressed by the control. The notice will be published in a newspaper of general circulation most likely to reach persons in the immediate locality.
- b.* If the controls are intended to restrict surface or subsurface future land use, the notice shall be sent to each local regulatory body having jurisdiction and control over or a direct interest in regulation of these activities. These may include but are not limited to municipal or county zoning boards, municipal building authorities, public utilities and economic development agencies. If the controls are intended to restrict groundwater use, the notice shall be sent to the county or city board of health responsible for private well permitting.

c. Failure to provide notice to an interested party shall not constitute a basis for invalidating a subsequently approved no further action classification.

137.7(5) *No further action certificates.* Any no further action certificate shall contain a specific reference to any applicable institutional and technological control and shall meet the requirements in rule 137.11(455H). The reference must identify the location of any recorded instrument, contractual agreement or other documents applicable to the control, provide a brief description of the terms of the control and, where appropriate, site diagrams.

137.7(6) *Enforcement of institutional and technological controls.* Institutional and technological controls which have been incorporated into a no further action certificate pursuant to rule 137.10(455H), or have been approved prior to issuance of a no further action certificate, may be enforced in Iowa district court by the department, a political subdivision of this state, the participant or any successor in interest to the participant as provided in Iowa Code section 455H.206(4). Enforcement of the terms of an environmental covenant shall be in accordance with 2005 Iowa Code Supplement chapter 455I, 567—Chapter 14, and the terms of the environmental covenant.

137.7(7) *Failure of an institutional and technological control(s).* The effectiveness of institutional and technological controls may be jeopardized for several reasons including situations where the technological controls are no longer effective in achieving their technical objectives, the validity of technological or institutional control is challenged due to a pending or final administrative or judicial action or legislative action changing its regulatory effect (e.g., change in an ordinance), or persons fail to comply with the terms of the institutional or technological control. The effect of the failure of a technological or institutional control to achieve its intended purpose is to remove the no further action classification and put all interested parties in the same position had the no further action classification not been made. When the department has reason to believe technological or institutional control(s) is jeopardized or determines that the control is no longer effective, the following policy and procedure shall apply:

a. The department shall make reasonable efforts to provide notice of the failure or noncompliance to the participant(s), protected parties, persons having legal standing to enforce the terms of the controls, other persons who may be legally responsible for contamination at the site and persons legally obligated to comply with the terms of the controls. The notice shall inform these parties of the consequences of failure of the controls and provide the opportunity for one or more of them to correct the deficiency by taking further response action or undertaking enforcement action to obtain compliance with the terms of the controls.

b. The participant(s) and other persons legally responsible for contamination at the site shall have primary responsibility to correct deficiencies or seek enforcement of the terms of controls, if they wish to maintain a no further action classification and any attendant statutory protections. The department may in its discretion seek enforcement of controls where persons fail to comply with the terms when it determines there is a strong likelihood of success, other participant(s) or legally responsible persons are unable or unwilling to undertake enforcement, and utilization of the controls remains consistent with these rules and site conditions currently in effect at the site. However, the department is not obligated to seek enforcement of the terms of any technological or institutional controls nor does the election not to undertake enforcement constitute a defense to further action by responsible parties or a basis for challenging the rescission of the no further action classification.

c. The department may also elect to require statutorily responsible parties to correct the deficiency as an alternative to rescinding the no further action classification.

d. Failure of a participant to timely undertake additional response action and response may result in termination of enrollment and loss of benefits under these rules and Iowa Code Supplement chapter 455H. Any person found to have intentionally violated an environmental protection easement or other institutional or technological control, whether included in a no further action letter or as part of an approved response action, may lose any of the benefits under these rules or Iowa Code Supplement chapter 455H.

137.7(8) *Modification and termination of institutional and technological controls.* A participant or successor in interest to a participant, or an owner of property subject to an institutional or technological control, may seek approval from the department for the removal, discontinuance, modification or termination of an institutional or technological control. The person must demonstrate that the control in its

present form is no longer required to ensure compliance with applicable standards. The person seeking revision must undertake sufficient risk assessment and provide sufficient assessment data to establish that the applicable compliance standards can be met based on the proposed modification. The department may also determine based on a revised assessment that the applicable controls are no longer effective to meet compliance standards and may require other response action. The department shall issue an amendment to any previously issued no further action letter specifying the approved modification of the institutional or technological controls. Modification and termination of an environmental covenant shall be consistent with these rules and shall conform with 2005 Iowa Code Supplement chapter 455I and 567—Chapter 14.

567—137.8(455H) Site assessment.

137.8(1) Purpose. The purpose of the site assessment is to define the nature and extent of contamination, along with identifying likely exposure pathways, with the aim of characterizing potential, current and future risks and making an informed decision concerning an appropriate response in the context of probable future land uses at the site and in the surrounding area. Assessment is to be conducted with the recognition that contaminant fate and transport may alter the current areal extent and depth of contamination. It is recognized that the scope of such an assessment may be appropriately varied dependent upon interrelated factors including the nature and severity of the contamination, the complexity of specific details of the site and its setting, and the nature of the chosen response, if known.

137.8(2) Site assessment plan. The participant is encouraged, but not required, to submit for department review a site assessment plan, prior to proceeding with the site assessment. Participants choosing to initiate site assessment without department review and approval of a work plan shall notify the department in writing of their intentions. Likewise, participants choosing to proceed to the risk evaluation/response action phase in accordance with rule 137.9(455H) without seeking review of the site assessment report shall give prior notice to the department of their intentions. The notice shall include a schedule for implementation and completion, a description of the area to be assessed and the scope of the proposed assessment to be undertaken, any planned construction activities in the affected area and a proposed date for submission of the site assessment report for department review. If the notice includes an intention to go directly to the risk evaluation/response action phase, it shall also include a general description of the site assessment results, a schedule for submission of the risk evaluation/response action document and the reasons for not requesting department review and approval of the site assessment report.

The plan is intended to lay out the rationale to be followed in the conduct of the site assessment. The purpose for this optional stage is to provide an opportunity for the participant and the department to reach a consensus regarding the appropriate scope of the site assessment. The development of a consensus should serve to diminish the likelihood that the department will find the final site assessment to be deficient and, for the benefit of the participant, to avoid the expenditures and time associated with the collection of what may ultimately prove to be unnecessary data.

In order to accomplish this, it is suggested that the plan should address relevant, known characteristics related to the site and its history as well as plans for addressing pertinent details spelled out in the subsequent sections on the site assessment and the site assessment report. Departmental review may result in suggestions from the department regarding perceived shortcomings or proposed activities which are deemed to be unnecessary.

The participant may find it desirable to conduct some preliminary investigation in order to develop a site assessment plan.

137.8(3) Site assessment details. In order to meet the stated purpose of the site assessment, it will be necessary to characterize numerous attributes related to the enrolled site and its setting. The following objectives are intended to provide a framework in which to accomplish this purpose. It is recognized that these objectives may exceed the appropriate scope of some site assessments and that there may be situations in which it may be necessary to define additional objectives. Any such deviation would preferably be addressed in a site assessment plan. The department may also develop guidance documents that recommend more specific procedures for accomplishing site assessment objectives. Such guidance documents will be readily available to the public. In general, an acceptable site assessment should address the following items.

a. Identify and address the medium or media of concern associated with the contamination situation for which the site is enrolled. The regulatory classification or jurisdiction of contaminants shall be indicated if applicable and, if known, e.g., the compound is regulated under the Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), or Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

b. Characterize the nature, extent, and degree of contamination in both horizontal and vertical dimensions. This should involve appropriate sample numbers and locations within the contaminated area and beyond the area contaminated in excess of the background or statewide standard. Analyses should be conducted for the contaminants of concern, breakdown products, and other contaminants likely to be present at significant levels. The department may also require analyses for additional contaminants which are not the focus of enrollment in the program, but which may be of special concern. Special concerns might include waste handling or treatment problems posed by the additional contaminants, or unacceptable risks remaining unaddressed within the affected area, due to the presence of the additional contaminants. In the case of groundwater, attention should also be given to the possibility of contaminant accumulation in strata overlying confining layers and to the possible presence of non-aqueous phase liquids (NAPL). In the case of groundwater, more than one round of sampling shall be incorporated, appropriately separated in time. In the case of soils, particular attention should be given to characterizing shallow soil contamination, from zero to six inches in depth.

c. Characterize the nature of the source of contamination or propose a conceptual model explaining the presence of the contamination of concern.

d. Characterize local contamination maxima or hot spots for the purposes of evaluation against relevant standards and to identify handling or treatment concerns that they may pose.

e. Characterize the stratigraphy. This should be done to a depth extending to the first significant confining layer below the deepest contamination. Descriptions should rely primarily on results gathered in the site assessment, but relevant reference materials or geologic logs from other sources may be incorporated as a supplement.

f. Characterize the hydrologic properties of the site and its vicinity to a distance appropriate to the fate, transport and exposure concerns associated with the site. This characterization should consider both horizontal and vertical components of groundwater movement as well as other influences on groundwater hydrology such as pumping wells, injection wells, surface water bodies, effects of seasonal or precipitation-driven variability, and possible aquifer interconnections, including those related to existing or abandoned wells. Water level measurements, related to a common datum, screening of appropriate depth intervals, and determination of hydraulic conductivity will generally be considered as necessary.

g. Characterize physical and chemical properties of the site and its environs associated with contaminant fate and transport, e.g., percent organic matter, redox potential, soil bulk density, and transmissivity.

h. Characterize topographic and cultural features of the site and its immediate vicinity. Cultural features may include, but not be limited to, buildings, basements, paved areas, roadways, utilities, storage tanks and associated piping, piles, impoundments, wells, and waste disposal systems.

i. Evaluate concerns related to whether the contamination situation is dynamic or stable; if dynamic, address fate and transport and breakdown products appropriately.

j. Identify and characterize receptor or exposure concerns. This most clearly involves concerns for drinking water and exposures to contaminated soils, as suggested by the statewide standards, but additional concerns should be identified and addressed by the participant or the department, as the situation warrants, e.g., vapors to basements, threats to water supply lines, threats to surface waters, or environmental threats.

k. Characterize current and probable future uses of the site and its surroundings. If probable future uses differ significantly from current uses, then characterize them separately and conduct the assessment in a fashion which addresses concerns arising from the possible change in use.

l. Evaluate the potential for contaminants to migrate from one medium to another. The following subparagraphs prescribe requirements for assessing potential migration of contamination from one medium to another. Requirements in the following subparagraphs may be waived if it can be demonstrated in accordance with procedures established in 567—Chapter 135 or the latest version of ASTM Standards

related to the Phase II environmental site assessment process that migration of contamination from one medium to another will not cause a violation of the applicable standard in the receiving medium. The assessment activities prescribed in the following subparagraphs are intended to determine if significant migration of contamination from one medium to another has occurred. If evidence of significant migration of contamination from one medium to another (i.e., generally a contaminant concentration in the receiving medium in excess of the statewide standard) is discovered, full-scale characterization of the receiving medium may be required.

(1) The water from any pond or lake on the site or within 300 feet of the site shall be sampled and analyzed for the contaminants of concern, if it is reasonably possible that contaminants from the site could impact the pond or lake. Any surface stream that runs through the site or within 300 feet of the site should be sampled at a location downstream of any potential impact from the site and analyzed for the contaminants of concern. Depending on the characteristics of the contaminants (e.g., solubility), associated sampling and analysis of sediments may be required.

(2) Groundwater at the location most likely to be impacted by each known substantial area of soil contamination shall be sampled and analyzed for the contaminants of concern. If the area of soil contamination exceeds 10,000 square feet, additional groundwater samples may be required.

(3) Soil vapors in each area that is most likely to be impacted by known groundwater or soil contamination shall be sampled and analyzed for the volatile organic contaminants of concern. If the area of soil or groundwater contamination exceeds 10,000 square feet, additional soil vapor samples may be required. If vapors may be impacting an existing enclosed space, a soil vapor sample shall be collected from a location that is most likely to have vapor contamination adjacent to the enclosed space.

If the potential for the existence of problematic concentrations of the vapors in the enclosed space cannot be dismissed based on soil vapor sampling, sampling and analysis of vapors inside the enclosed space may be conducted to determine whether or not a problem exists. Appropriate measures for distinguishing between contaminant vapors originating from within the enclosed space versus those from the external sources that are under investigation may be made with the approval of the department.

Ambient air sampling may be required if a very large area or extremely high concentrations of highly volatile contaminants exist in shallow soil or evidence of vapor contamination exists, such as odors or a high vapor reading on a vapor-screening instrument.

(4) If a water line exists within the zone of known organic contamination of soil, groundwater or soil vapor and the potential for significant diffusion of contaminants into the water line cannot otherwise be dismissed, a sample from the water line shall be collected at the nearest location where any impact may exist and that sample shall be analyzed for the organic contaminants of concern. All such samples should be collected at times following minimum movement within the water line (e.g., early morning following a weekend).

137.8(4) *Site assessment report.* The site assessment report shall include the presentation of all information gathered relative to the foregoing description of the site assessment, arranged in appropriate sections of the report. It shall include a summary of preliminary information on which the site assessment is based, e.g., background and site history. The report shall discuss the sampling strategy and methods used in the assessment. The department encourages the use of innovative or screening techniques to expedite investigations and to control costs, provided that such techniques are approved by the department and are supported through verification by accepted scientific practices. The report shall also include a description of the quality assurance/quality control (QA/QC) protocols followed during the investigation. QA/QC protocols shall be consistent with accepted scientific practices, including those set forth in appropriate EPA or ASTM guidance or otherwise approved by the department.

The presentation should be organized so as to facilitate the assimilation of information by the reader. Maps to be presented, as appropriate, might include maps illustrating the location of the site in a larger geographical context; maps showing cultural features associated with the site and its environs; maps illustrating the contamination extent and concentration in three dimensions; maps illustrating the site hydrology in three dimensions; and maps illustrating receptors, potential receptors, and relevant pathways of exposure. Cross-sectional diagrams should be included to illustrate stratigraphy, geological boring information, and hydrologic and contaminant factors with depth. Tables and graphs should be designed for

the purpose of summarizing data in a meaningful fashion, including information about successive rounds of sampling. Appendices should include well logs, copies of laboratory analytical reports, and raw data used to calculate parameters presented elsewhere in the report. Appended material shall be labeled in a fashion permitting the cross-referencing of appended materials and the body of the report.

137.8(5) *Approval of site assessment report.* The department suggests, but does not require, that the site assessment report be approved prior to proceeding with the subsequent risk evaluation/response action phase. Unless notice has already been given prior to initiation of the site assessment, participants choosing to proceed to the risk evaluation/response action phase without department review and approval of the site assessment report must notify the department in advance as provided in subrule 137.8(2).

137.8(6) *Public notification.* Before or upon completion of the site assessment, the participant shall provide the department with the names and addresses of the owners and occupants of all property adjacent to the site enrolled in the land recycling program and any additional properties where contaminants from the enrolled site have migrated or are likely to migrate in the future. The department shall notify by direct mailing all such property owners and occupants, the city or county in which the property is located, and officials of any potentially impacted public water supply of the site's enrollment in the land recycling program and of the scope of work described in the participation agreement. The department shall give the notified parties the opportunity to obtain updates regarding the status of activities relating to the site that is enrolled in the land recycling program. The department may also require the participant of a site enrolled in the land recycling program to publish public notice in a local newspaper if the department determines that widespread interest in the site exists or is likely to exist. The department may provide additional opportunities for public participation if, after consultation with the participant, the department determines such opportunities are warranted.

567—137.9(455H) Risk evaluation/response action.

137.9(1) *Purpose.* The purpose of risk evaluation/response action is to utilize information from the site assessment as a basis for:

- a.* Determining whether current exposures result in risks deemed to be excessive, based on evaluation against appropriate background, statewide, or site-specific standards.
- b.* Determining whether future exposures may result in risks deemed to be excessive, based on evaluation against appropriate background, statewide, or site-specific standards. This will likely include:
 - (1) Evaluation of potential changes in usage, e.g., installation of a new well, change in land use, or other activities, which result in unacceptable, potential exposures not evaluated as current exposures, and
 - (2) Evaluation of exposure concerns related to the movement of contamination such that potential exposures might arise which are not considered under current exposure assumptions, e.g., groundwater plume migration creating a potential for future contamination of existing wells or creating newly contaminated areas in which new well installation may result in unacceptable exposures.
- c.* Proposing an appropriate and acceptable response action or strategy to address the identified, unacceptable exposures or potential exposures.
- d.* Establishing the test criteria to be applied under rule 137.10(455H) for determining final compliance with the selected standard. In some cases this may consist of proving that standards are currently met; in other cases it may result in an assessment of whether the response action succeeds in bringing about compliance with a selected standard.

The risk evaluation/response action is intended only for application to the specific contaminants and situations for which the site is enrolled.

137.9(2) *Risk evaluation.* The risk evaluation/response action document shall identify all locations or areas, and associated exposure pathways, where exposure currently exceeds a statewide standard or where a statewide standard may be exceeded in the future, due to either a change in exposure-related usage or contaminant migration. Current and future exposure pathways shall be evaluated and presented separately. This evaluation shall not be limited to exposure pathways for which the department has formulated risk-based values in rule 137.5(455H) (the statewide standard) or 137.6(455H) (the site-specific standard) but should include any pathway related to the situation for which the site is enrolled, for which a no further action certificate is sought, or for which an unacceptable risk may now or in the future exist, e.g., high

concentrations of volatile compounds in proximity to a confined space, high concentrations of solvents in proximity to a water distribution line, or environmental concerns unrelated to human health.

In a case where a background standard is to be applied and there is no violation of a statewide standard, it will be necessary to identify only locations or areas where the background standard is exceeded.

In some instances it is anticipated that the risk evaluation may be appropriately abbreviated from the preceding description, based on the specific details of the contamination and the proposed response action. Participants are strongly urged to discuss the appropriate scope of their risk evaluation with the department.

137.9(3) *Establishing cleanup standards.* The risk evaluation/response action document shall identify the cleanup standards to be applied in accordance with rule 137.4(455H), 137.5(455H), or 137.6(455H) of this chapter, outlining respectively the background, statewide, or site-specific standards. These standards may be applied in any combination to address specific components of the contamination problem for which the site is enrolled. If cleanup standards other than those specifically formulated under the statewide standard (rule 137.5(455H)) are to be applied, then the rationale behind the determination of such standards shall be justified, in the document, to the department's satisfaction.

137.9(4) *The use of models.* The department recognizes that the use of numerical models will likely be necessary in order to evaluate potential future exposures or that models may be used to develop target levels.

a. Standard models. Standard models may be used to predict future contaminant concentrations at potential points of exposure to contaminants or at other locations used for determining compliance when such models are appropriate, as determined by the department. Applicable Tier 2 models approved for use in accordance with 567—Chapter 135 for underground storage tanks (USTs) and applicable Tier 2 models provided in American Society for Testing of Materials (ASTM) standards are acceptable standard models. Models which provide a two-dimensional representation of groundwater flow will not be considered to be appropriate when significant three-dimensional components to groundwater flow are anticipated. Default values for input parameters for ASTM and UST Tier 2 models, as provided in applicable ASTM standards and approved for use in accordance with 567—Chapter 135, may be utilized without approval by the department. The department will maintain a guidance document which includes a list of other chemical-specific default values for all chemicals having statewide standards. The use of other, site-specific input parameters is addressed under site-specific modeling in paragraph “b” below.

b. Site-specific models. Site-specific models may be used to predict future contaminant concentrations at potential points of exposure to contaminants or at other locations used for determining compliance when such models are appropriate, as determined by the department. Site-specific models may include standard models with site-specific input parameters or models utilizing more sophisticated analytical techniques. The department will utilize versions of A Modular Three-Dimension Finite-Difference Ground-Water Flow Model (MODFLOW) as developed by the United States Geological Survey in conjunction with A Modular Three-Dimensional Transport Model (MT3D) by S.S. Papadopoulos & Associates, Inc. as a site-specific model for assessment of potential future exposures to contaminants in groundwater. MODFLOW and MT3D will be considered to be appropriate site-specific groundwater and contaminant transport models for any situation. Other site-specific groundwater and contaminant transport models may be utilized with the approval of the department. In general, a site-specific groundwater model shall have proven reliability and be able to simulate, as needed:

- A fixed contaminant source,
 - Groundwater and contaminant flow in three dimensions,
 - Groundwater and contaminant flow through as many distinct geologic layers as necessary for the site in question,
 - Effects of pumping,
 - Effects of groundwater recharge and discharge,
 - Impacts of hydrologic boundaries,
 - Contaminant advection, dispersion and chemical reactions, as appropriate for the site in question,
- and
- Other site-specific variables as appropriate.

Default values for input parameters approved for standard models will be approved for use in site-specific models. Otherwise, input parameters used in site-specific models are subject to the department's approval.

137.9(5) *Response action.* The risk evaluation/response action document shall include a proposal for a response action or strategy to achieve and maintain compliance with the selected standard(s). This may consist of activities designed to remove or treat contaminants, prevention of exposure to unacceptable levels of contamination through technological/institutional controls or monitoring, or it may consist of a combination thereof. If the response action involves the use of a standard which is less stringent than the statewide standard, it will generally be necessary to implement institutional controls to prevent the type of exposure on which the statewide standard is based. It is the intent of the department to permit the participant to identify and carry out those options by which this may be accomplished, insofar as the department deems the selected options to be reasonable, protective of human health and the environment, and consistent with provisions of the rule.

137.9(6) *Free product and gross contamination.* The response action or strategy for an enrolled site shall take into account a stated policy of the Act to encourage environmental cleanup. To this end, the department requires that contaminants present as free product and gross contamination shall not be addressed through the implementation of institutional or technological controls. For purposes of this rule, gross contamination will be considered to be contamination present at concentrations in excess of a standard by an amount sufficient to reasonably expect that institutional or technological controls will not be adequately protective of human health or the environment.

The department recognizes that treatment or removal of free product or gross contamination may not, in some cases, be feasible. In such cases the department may grant a variance to this portion of the rule. It will be the responsibility of the participant to make a sufficient case that such a variance is warranted.

137.9(7) *Compliance verification strategy.* The risk evaluation/response action document shall outline a strategy for determining whether the relevant standards are met by the site and will continue to be met in the future. In some cases this may consist of sampling and statistical tests to verify that the standard has already been met, while in other cases the sampling and statistics may be used to demonstrate that a response action has achieved its stated goals and the site is now in compliance with standards. Some response strategies may also call for longer term monitoring. In this latter case, standard-based values shall be identified which, if exceeded, would indicate a failure of the response action and necessitate the development and implementation of a new response action. The terms under which monitoring may cease should also be proposed. The proposed strategy shall be consistent with rule 137.10(455H), dealing with demonstration of compliance, and shall indicate the standard to be applied and the point of compliance at which it is to be applied, consistent with rules 137.4(455H), 137.5(455H), and 137.6(455H) (the background, statewide, and site-specific standards, respectively).

137.9(8) *Risk evaluation/response action document submission.* A risk evaluation/response action document shall be submitted for review by the department. When considered in conjunction with the site assessment report, these documents shall present a complete picture of the site from its characterization, through the evaluation of risk, to the development of a strategy to address the situation. An effort shall be made to ensure that the reviewer, or other interested parties, can easily move back and forth through the documents to gain an understanding of the existing situation and proposed actions. The risk evaluation/response action document shall include a summary of findings regarding present risks and potential future risks; a pathway-specific identification of the standards to be applied, including the supporting rationale, if appropriate; a discussion of the proposed response actions, including remedial actions to be taken and institutional or technological controls to be implemented; and a discussion of the proposed verification strategy. Any modeling used for purposes of assessing future risk or establishing site-specific standards shall be presented in sufficient detail to permit evaluation of the results by the department. Any permits which will be necessary to implement the response action shall be identified to the department for inclusion in a consolidated standards permit.

137.9(9) *Department review and approval.* It is strongly recommended that the document be submitted for review and approval prior to proceeding with implementation of the response action. The final, department-approved document will be the basis for assessing subsequent activities at the site. Parties

choosing to proceed with response actions without prior review and approval by the department proceed at their own risk and may not assume the response action implemented will result in a no further action certificate.

Parties choosing to implement a response action without prior review and approval by the department shall submit to the department a proposed risk evaluation/response action document accompanied by an explanation of the reason(s) for proceeding without prior approval. Documentation shall also include a schedule for implementation, a description of construction or other activities to be undertaken, and date for submission of the final report demonstrating compliance, as described in rule 137.10(455H).

The department shall provide opportunity to comment on proposed response actions to any party that is potentially impacted by off-site migration of contaminants for which notification is required in accordance with subrule 137.8(6). The department shall consider reasonable comments from potentially impacted parties in determining whether to approve or disapprove a proposed response action or site closure.

567—137.10(455H) Demonstration of compliance.

137.10(1) Purpose. The purpose of the demonstration of compliance section is to provide a mechanism by which to verify that:

- a. Appropriate and acceptable standards are complied with and that compliance can be reasonably expected to continue in the future;
- b. Any and all remedial measures proposed under rule 137.9(455H) have achieved their purpose; and
- c. Appropriate institutional and technological controls, or monitoring mechanisms, have been successfully put in place.

In some cases the demonstration of compliance may mark the final step, taken by the participant, prior to the issuance of a no further action certificate. In other cases it may mark the transition to the longer term closure activities associated with the site, such as monitoring, maintenance of technological controls, and continuing enforcement of institutional controls. In this latter case, demonstration of compliance activities may or may not result in the issuance of a no further action certificate, depending on the approach proposed in the response action. In some cases it may be necessary to successfully complete a monitoring program (or to fulfill other agreed-upon obligations) prior to the issuance of the no further action certificate.

In all cases, sampling of environmental media shall comply with QA/QC requirements addressed elsewhere in this rule.

137.10(2) General requirements for demonstrating compliance with soil standards.

a. For the standard being applied, the demonstration of compliance shall be at the point of compliance or point of exposure as set forth in rule 137.4(455H), 137.5(455H), or 137.6(455H) relating to background standards, statewide standards, and site-specific standards, and described in a site-specific context pursuant to subrule 137.9(7), relating to risk evaluation/response action.

b. Minimum sample numbers for the demonstration of compliance with the background standard for soils (paragraph 137.10(4)“b”) or with the statewide standard when applying subparagraph 137.10(5)“a”(1) shall be based on the volume of soil to which the selected standard is being applied as follows:

- (1) For volumes less than or equal to 125 cubic yards, a minimum of 8 samples.
- (2) For volumes greater than 125 cubic yards, but less than or equal to 3,000 cubic yards, a minimum of 12 samples.
- (3) For each additional volume of less than or equal to 3,000 cubic yards, a minimum of 12 additional samples.
- (4) Additional samples may be required based on site-specific conditions.

c. When applying the 95 percent upper confidence limit, according to EPA guidance, to demonstrate compliance with the statewide standard for soils (subparagraph 137.10(5)“a”(2)) or a site-specific standard for soils (subrule 137.10(6)), the minimum sample number shall be as specified in that guidance.

d. Sample locations for demonstration of compliance shall be selected in a systematic random fashion to be representative, both horizontally and vertically, of the volume of soil being evaluated for compliance.

e. Sampling for the purposes of demonstrating compliance shall be conducted after the completion of site assessment activities and after the implementation of applicable remedial measures.

137.10(3) General requirements for demonstrating compliance with groundwater standards.

a. For the standard being applied, the demonstration of compliance shall be at the point of compliance or point of exposure as set forth in rule 137.4(455H), 137.5(455H), or 137.6(455H), relating to background standards, statewide standards, and site-specific standards, and described in a site-specific context pursuant to subrule 137.9(7), relating to risk evaluation/response action.

b. Monitoring wells installed for the purpose of demonstrating compliance shall be of sufficient number and appropriate location to evaluate all hydrologic strata of concern, based on site-specific considerations, as identified pursuant to subrule 137.9(7), relating to risk evaluation/response action.

c. For statistical methods under subparagraph 137.10(5) "b"(1), compliance with the statewide groundwater standard shall be based on eight consecutive quarters of groundwater data.

As an alternative, the department may accept four consecutive quarterly sampling events or less with written approval from the department under the following conditions:

(1) There is adequate spatial monitoring of the plume upgradient which indicates a decreasing concentration trend toward the downgradient property boundary.

(2) Parameters affecting the fate and transport of regulated substances within the plume have been fully evaluated.

(3) Concentrations of regulated substances in the plume at the point of compliance monitoring wells along the downgradient property boundary are all less than or equal to the groundwater standard or the limit relating to the PQL, whichever is higher, in all samples collected during the quarters of monitoring.

(4) One of the following is met:

1. The age of the plume is sufficiently well known to permit a judgment to be made regarding its stability.

2. The remediation includes source removal or containment actions which would reduce chemical flux into the plume.

d. When applying the 95 percent upper confidence limit, according to EPA guidance, to demonstrate compliance with the statewide standard for groundwater (subparagraph 137.10(5) "b"(2)) or a site-specific standard for subrule groundwater (137.10(6)), the minimum sample number shall be as specified in that guidance.

e. Sampling for the purposes of demonstrating compliance shall be conducted after the completion of site assessment activities and after the implementation of applicable remedial measures.

137.10(4) *Demonstration of compliance with a background standard.*

a. To apply a background standard the participant shall demonstrate to the department, in writing, that the apparent background contamination at the site is due to widespread or naturally occurring contamination and shall obtain the department's approval to use this subrule. Data collected for the purpose of determining the applicable background standard is subject to department approval, interpretation, and manipulation, if necessary for the purpose of establishing a meaningful background standard.

b. For soil, the minimum sample number to determine the background standard shall be 10 (unless a lesser number is approved by the department) and the number of samples from the affected area shall be based on volume as described in 137.10(2) "b." No sample collected from the affected area may exceed the sum of the background arithmetic mean and three times the sample standard deviation, as calculated based on the background sampling.

c. For groundwater, a minimum of 12 locations shall be sampled in the background reference area (unless a lesser number is approved by the department) and an equal number shall be collected from the affected area. In areas involving more than one hydrologic strata, more samples may be required. Sampling shall be conducted concurrently in the background reference area and the affected area. No sample collected from the affected area may exceed the sum of the background arithmetic mean and three times the sample standard deviation, as calculated based on the background sampling.

137.10(5) *Demonstration of compliance with the statewide standard.* The following requirements shall be met in order to demonstrate compliance with the statewide standard. Testing shall be performed individually for each contaminant being addressed and for which a no further action certificate is sought.

a. To demonstrate compliance with the statewide standard for soils in each affected area, in addition to (1) or (2) as follows, all other applicable requirements of this rule shall be met.

(1) Seventy-five percent of all soil samples, collected during a single event, shall be less than or equal to the statewide standard, with no individual sample exceeding 10 times the statewide standard.

(2) In accordance with EPA-approved methods, the 95 percent upper confidence limit of the arithmetic mean of soil sample values from the affected area shall be at or below the statewide standard.

b. To demonstrate compliance with the statewide standard for groundwater in each compliance monitoring well, in addition to (1) or (2) as follows, all other applicable requirements of this rule shall be met.

(1) Seventy-five percent of all samples collected in each compliance monitoring well over time shall be less than or equal to the statewide standard, with no individual sample exceeding 10 times the statewide standard.

(2) In accordance with EPA-approved methods, the 95 percent upper confidence limit of the arithmetic mean of samples collected from a compliance well over time shall be at or below the statewide standard.

137.10(6) *Demonstration of compliance with a site-specific standard.* To demonstrate compliance with a site-specific standard, the participant shall use the tests identified in 137.10(5) "a"(2) and 137.10(5) "b"(2), except that the 95 percent upper confidence limit of the arithmetic mean for samples from the medium of concern shall be at or below the site-specific standard.

137.10(7) *Compliance with cumulative risk.* In addition to or, for soil only, in lieu of compliance with standards for individual contaminants as prescribed above, cumulative risk criteria must be attained. Cumulative carcinogenic health risks shall not exceed 1 in 10,000. Noncarcinogenic health risks affecting the same target organ shall not exceed a cumulative hazard quotient of 1. Cumulative risk criteria are applicable to multiple contaminants in the same medium and multiple media in which exposure is likely to occur to the same individual. Cumulative risks shall be based on the same exposure assumptions that are used for determining the selected standard.

Risks associated with background levels of contaminants shall not be included in the cumulative risk determination. Background levels of contaminants shall be determined in accordance with subrule 137.10(4) or, if approved by the department, by the use of generally available information on background levels of contaminants.

In situations where the risk associated with exposure to a contaminant at a concentration equal to the selected standard is greater than the acceptable cumulative risk, the cumulative risk may be calculated assuming the risk associated with exposure to the contaminant at a concentration equal to the selected standard is equal to the acceptable cumulative risk criterion. The department will provide a guidance document for calculating cumulative risk and make it readily available to the public.

137.10(8) *Final report.* A final report shall be submitted which documents the accomplishment of all provisions set forth in the risk evaluation/response action document. This shall include, as applicable to the specific situation, discussions related to verification of compliance with selected standards; successful completion of approved remedial actions; implementation of necessary institutional or technological controls; and initiation of any required monitoring strategy. Sufficient details shall be included to permit the department to verify that the terms proposed in the response action have been met with regard to the statistical determination of compliance with standards.

137.10(9) *Department review and approval.* The final report is subject to review and approval by the department. Following review, the department will either approve the report or make a written response indicating the reason(s) why the report is unacceptable. Acceptance of the report may result in the issuance of a no further action certificate or it may mark a transition to the long-term closure activities associated with the site, as proposed in the response action. A decision that the report is unacceptable may be based upon an insufficiency of the report or it may be based on a judgment that the terms of the response action have not been met.

In cases where a participant has elected to proceed through this program without department interaction and without submitting site assessment (pursuant to rule 137.8(455H)) or risk evaluation/response action documents (pursuant to rule 137.9(455H)), the final report shall contain the substantive information related to those rules in addition to information required under this rule. The intent is to create a document for departmental review and approval which clearly sets forth, in substance, the same process which would

have been developed had the participant engaged in a stepwise approach including interaction with the department during the process.

567—137.11(455H) No further action classification.

137.11(1) *Eligibility.* An enrolled site shall be eligible to obtain a no further action classification, when the department determines the participant has met all compliance standards of this chapter applicable to the affected area and the hazardous substances actually identified and evaluated such that no further response action is required other than maintenance of institutional or technological controls or certain specified continuing site activities. Upon request of a participant or a protected party and compliance with applicable standards, the department will issue a no further action letter to each protected party requesting it.

A no further action classification may be conditioned upon the continued maintenance and effectiveness of any applicable institutional or technological control in accordance with rule 137.7(455H).

137.11(2) *No further action certificate.* A no further action letter shall be in a form recordable in the county real estate records as provided in Iowa Code chapter 558 and consistent with the model forms developed by the department. The no further action letter may be recorded as provided by law.

137.11(3) *No further action certificates conditioned on institutional and technological controls.* A no further action certificate conditioned upon the continuing effectiveness and maintenance of institutional and technological controls or other continuing requirements must be recorded with the consent of the fee titleholder for each parcel of affected property subject to the controls and for parcels of property for which prevention of exposure is dependent upon the continuing effectiveness and maintenance of the controls. If a participant is not able to record the no further action letter on a parcel within the affected area due to objections of the fee titleholder or other legal restraints, this alone shall not be a basis for denying or rescinding the no further action classification or the certificate or the legal protections attendant to the no further action classification. Any modification or termination of institutional and technological controls shall be noted in an amended no further action certificate and shall be recorded as to any property subject to an earlier recorded certificate or institutional control. If a no further action certificate is required to be recorded, the no further action classification is not effective until the document is recorded with the county recorder.

137.11(4) *Scope of liability protection.* Upon issuance of the no further action letter by the department, the liability protection provisions contained in Iowa Code Supplement chapter 455H, subchapter 3, apply. The scope of the no further action classification and the scope of liability protection extend only to that area of affected property as defined by actual and modeled contaminant data and the specific environmental condition for which a regulatory standard has been met and approved by a no further action classification. The scope of protection corresponds to the scope of the site assessment conducted by the participant, the exposure pathways actually evaluated by the assessment report and reviewed by the department, and the hazardous substances identified in that assessment for which compliance with a department-approved standard has been achieved. Liability protection does not apply to releases, sources of contamination, hazardous substances or other environmental conditions not expressly addressed in the participant's site assessment, response action or specifically referenced in the no further action certificate.

The no further action classification and certificate shall be void if the department demonstrates by clear, satisfactory, and convincing evidence that any approval under this chapter was obtained by fraud or material misrepresentation, knowing failure to disclose material information, or false certification to the department.

137.11(5) *Reopener and reclassification conditions.*

a. The department shall have grounds to reopen and rescind a no further action classification and consider reclassification of the affected area if specified conditions of the no further action classification and certificate are not maintained, or if institutional or technological controls fail to meet their intended purpose or are determined to be ineffective and unenforceable. If the conditions upon which the no further action classification was issued cannot be corrected or reinstated, the department may rescind the classification. The effect of termination is to put all parties in the same position as if the no further action letter had not been issued.

b. If a no further action certificate is issued without conditions or technological and institutional controls and conditions should arise which might require further corrective action, the department may require further response action by a participant or protected party only as provided in Iowa Code Supplement section 455H.301. The department may require further response action against a statutorily responsible party who is not a participant or a protected party. If the participant was a person having control over a hazardous substance, as defined in Iowa Code section 455B.381, at the time of the release, a no further action certificate may provide or the department may require further response action to protect against an imminent and substantial threat to public health, safety, and welfare. A protected party who was a person having control over a hazardous substance, as defined above, may be required by the department to conduct a further response action, where appropriate, to protect against an imminent and substantial threat to public health, safety, and welfare.

These rules are intended to implement Iowa Code Supplement chapter 455H.

[Filed emergency 10/27/98 after Notice 8/12/98—published 11/18/98, effective 10/27/98]

[Filed 7/1/04, Notice 4/14/04—published 7/21/04, effective 8/25/04]

[Filed 6/28/06, Notice 3/15/06—published 7/19/06, effective 8/23/06]

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CHAPTERS 138 and 139
Reserved

TITLE X
HAZARDOUS WASTE

CHAPTER 140
SCOPE OF TITLE—DEFINITIONS—FORMS—RULES OF PRACTICE
[Prior to 12/3/86, Water, Air and Waste Management[900]]
Rescinded IAB 6/13/12, effective 7/18/12

CHAPTER 141
HAZARDOUS WASTE
[Prior to 7/1/83, DEQ Ch 45—Chapter 45 was previously adopted by the Solid Waste Disposal Commission on September 18, 1980, after full notice and public participation. The Environmental Quality Commission formally adopted Chapter 45, effective 1/20/81]
[Prior to 12/3/86, Water, Air and waste Management[900]]
Rescinded IAB 6/13/12, effective 7/18/12

CHAPTER 142
Reserved

CHAPTER 143
USE OF RECYCLED OILS FOR ROAD OILING,
DUST CONTROL, AND WEED CONTROL
[Prior to 12/3/86, Water, Air and Waste Management[900]]
Rescinded IAB 8/18/93, effective 9/22/93

CHAPTER 144
HOUSEHOLD HAZARDOUS MATERIALS
Rescinded **ARC 3995C**, IAB 9/12/18, effective 10/17/18

CHAPTER 145 HOUSEHOLD BATTERIES

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—145.1(455B,455D) Scope. This chapter is intended to assist the implementation of the provisions of Iowa Code sections 455D.10A and 455D.10B. These sections limit the amount of mercury added to an alkaline manganese battery and prohibit the disposal of batteries specified in 455D.10A(3)“a”(1) as part of the mixed municipal solid waste stream. All consumers shall be informed of this prohibition on disposal. These sections further require the establishment of a system or systems that would require any or all of the following: elimination or reduction of heavy metals or other toxic components, establishment of a comprehensive recycling program, or collection, transport, and proper disposal of the specified batteries.

Household batteries in rechargeable consumer products shall be easily removable or contained in a battery pack. The rechargeable battery, the instruction manual, and the product package shall be labeled to notify the consumer of the need to recycle and of the type of electrode used in the battery.

These provisions will further ensure the protection of the state’s groundwater resources while protecting the health and safety of the citizens of Iowa and the environment as a whole.

567—145.2(455B,455D) Definitions. As used in this chapter, in addition to the definitions set forth in Iowa Code section 455D.10A, the following definitions apply:

“*Alkaline manganese battery*” means a battery consisting of a manganese dioxide positive electrode, a zinc negative electrode and an alkaline electrolyte.

“*Battery pack*” means one or more batteries enclosed in a housing.

“*Collection entity*” is defined in 455D.10A(3)“b”(1).

“*Collection system*” means a system or systems in which household batteries, as specified in 455D.10A(3)“a”(1), are collected by several methods to be recycled or properly disposed. The methods include, but are not limited to: point of purchase return, mail-in return, a combination of both or a collection entity.

“*Dealer*” means any person who sells or otherwise offers household batteries to a consumer.

“*Department*” means the Iowa department of natural resources.

“*Distributor*” means any person who sells or otherwise offers household batteries to dealers.

“*Institutional generator*” is defined in 455D.10A(1)“e.”

“*Manufacturer*” means any person who manufactures or offers household batteries for sale to distributors or dealers. The manufacturer’s name that appears on the battery or rechargeable consumer product shall be presumed to be the manufacturer.

“*Mercuric oxide battery*” means a battery consisting of a mercuric oxide positive electrode and a zinc negative electrode.

“*Nickel-cadmium battery*” means a battery consisting of a nickel positive electrode and a cadmium negative electrode.

“*Participants in the stream of commerce*” means any dealer, distributor or manufacturer who is involved in the manufacturing, distribution, or sale of household batteries specified in 455D.10A(3)“a”(1).

“*Sealed lead-acid battery*” means a battery consisting of positive and negative electrode materials which are leads or compounds thereof, used in nonvehicular applications and weighing less than 25 pounds.

“*Unreasonable hazard to public health, safety, or the environment*” means a situation caused by the improper disposal of an item that is flammable, corrosive, toxic, or reactive, as defined by EPA regulations, that may result in harm to the public health, safety, or the environment. The harm created from improper disposal may be evident immediately or after a period of time. This definition relates to 455D.10B(2)“c.”

567—145.3(455B,455D) Household batteries. Any and all batteries specified in 455D.10A and 455D.10B that are used for any and all purposes are covered by these rules, except those batteries subject to regulation under the federal Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.

145.3(1) Only button cell batteries containing mercuric oxide are included in this collection program for recycling or proper disposal. Mercuric oxide button cell batteries shall bear an appropriate identification mark. (Non-mercuric oxide button cell batteries are not included in this collection program for recycling or proper disposal.)

145.3(2) Only rechargeable dry cell batteries containing nickel-cadmium (i.e., rechargeable kitchen appliances, rechargeable power tools and other household applications) are included in this collection program for recycling or proper disposal. (This collection or proper disposal program would not include nonrechargeable batteries used in radios, flashlights and other household applications.)

145.3(3) Only sealed lead-acid batteries used in nonvehicular rechargeable (i.e., camcorders, computers, cellular phones and other household applications) products weighing less than 25 pounds are included in this collection program for recycling or proper disposal.

567—145.4(455B,455D) Recycling/disposal requirements for household batteries.

145.4(1) It is the responsibility of all participants in the stream of commerce, either individually or collectively, to establish and maintain a system or systems for the proper collection, transportation and recycling or disposal of waste batteries, specified in 455D.10A(3) “a,” for consumers and institutional generators in Iowa, beginning July 1, 1996.

145.4(2) The manufacturers shall provide a plan to the department, by May 1, 1996, that specifically identifies a system or systems for the proper collection, transportation and recycling or disposal of the specified waste household batteries. This information shall identify, to the extent possible, transporters and recycling or disposal destinations.

145.4(3) A consumer that is not an institutional generator shall not be required to pay for any collection, disposition and recycling activities after the original purchase of the battery. However, these charges may be built into the original cost of the product. An institutional generator shall provide for the on-site source separation and collection of used mercuric oxide batteries, nickel-cadmium rechargeable batteries, and sealed lead-acid rechargeable batteries.

145.4(4) As part of the requirement of informing each consumer of the safe and convenient return process available for recycling or proper disposal of waste batteries, pursuant to Iowa Code section 455D.10A(3) “b”(2), a manufacturer shall provide a telephone number to each consumer of the specified batteries that provides information on returning these batteries for recycling or proper disposal. This telephone number shall also be provided to the department.

567—145.5(455B,455D) Exemptions for batteries used in rechargeable consumer products. A rechargeable consumer product manufacturer may apply to the department for exemption from the requirements of 455D.10B(1). An application for exemption from these requirements shall be submitted on 8½- x 11-inch paper and contain:

1. The name, address, and telephone number of the applicant and the applicant’s contact;
2. A statement setting forth the specific basis upon which the exemption is sought.

The information required pursuant to this rule shall be furnished to the department for each specified rechargeable consumer product for which an exemption is sought. The department shall approve or deny an exemption upon receipt of an application therefor. Allowable exemptions are specified in 455D.10B(2) “a” through “d.”

These rules are intended to implement Iowa Code sections 455B.301 to 455B.316, 455D.10A and 455D.10B.

[Filed 7/28/95, Notice 12/21/94—published 8/16/95, effective 9/20/95]

CHAPTERS 146 and 147
Reserved

CHAPTER 148
REGISTRY OF HAZARDOUS WASTE OR HAZARDOUS SUBSTANCE DISPOSAL SITES
Rescinded IAB 6/13/12, effective 7/18/12

CHAPTER 149
FEES FOR TRANSPORTATION, TREATMENT AND DISPOSAL OF
HAZARDOUS WASTE

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—149.1(455B) Authority, purpose and applicability.

149.1(1) Authority. Pursuant to Iowa Code section 455B.424, the department has authority to collect fees for the transportation, treatment, and disposal of a hazardous waste. Moneys collected or received by the department shall be transmitted to the treasurer of the state for deposit in the hazardous waste remedial fund.

149.1(2) Purpose. The purpose of these rules is to provide an orderly and efficient process for the assessment and collection of fees for certain activities involving hazardous wastes. These rules clarify the applicability of the fees and set forth a fee schedule, means of filing, and record-keeping requirements.

149.1(3) Applicability. Unless subject to the criteria in rules 149.3(455B) and 149.9(455B) of this chapter, fees shall apply to the following persons:

- a. Any person who generates a hazardous waste and transports hazardous wastes off the site of generation as is defined by Iowa Code section 455B.412(2) and 567—Chapter 144.
- b. Any person who owns or operates a facility within Iowa which provides treatment or disposal of hazardous waste.

567—149.2 Reserved.

567—149.3(455B) Exclusions and effect on other fees.

149.3(1) Exclusions. A person shall be exempt from the payment of fees specified in rule 149.4(455B) if any one of the following criteria is met:

- a. The person is a duly authorized agent of the state of Iowa or a political subdivision of the state.
- b. The hazardous waste is reclaimed or reused for energy or materials.
- c. The hazardous waste is transformed into new products which are not regulated as wastes.
- d. The hazardous waste is created as a result of remedial actions at an abandoned or uncontrolled hazardous waste site.
- e. The waste is the influent to a facility which is subject to regulation under rules in 567—Chapter 62, “Effluent and Pretreatment Standards: Other Effluent Limitations or Prohibitions” or 567—Chapter 64, “Wastewater Construction and Operation Permits.” However, any hazardous waste created by such a treatment process is subject to the fees specified in this chapter.
- f. The hazardous waste which due to its physical, chemical or biological properties decomposes spontaneously within 24 hours of generation to yield a resultant waste which is no longer hazardous in accordance with 40 CFR Part 261 as adopted by reference by rule 567—141.2(455B).
- g. Hazardous waste which is generated outside the state of Iowa and transported through the state.

149.3(2) Other fees. A person exempt from payment of fees specified in rule 149.4(455B) is exempt only for the purpose of Iowa Code section 455B.424. Fees other than those specified in this chapter may still be assessed.

567—149.4(455B) Fee schedule.

149.4(1) Effective date. On and after July 1, 1985, fees shall begin to accrue for the transportation, treatment or disposal of hazardous waste within Iowa.

149.4(2) Hazardous wastes generated within Iowa. For hazardous waste generated within the state of Iowa, the generator shall be responsible for the following fees:

- a. A fee of \$2 is assessed for each ton of hazardous waste destroyed or treated in Iowa to render the hazardous waste nonhazardous. However, hazardous residues resulting from such treatment are subject to all applicable fees.
- b. A fee of \$10 for each ton of hazardous waste transported offsite of generation.

The water content weight of any waste that is transported to another facility under the ownership of the generator for the purpose of waste treatment or recycling shall not be considered when computing the weight of the waste.

c. A fee of \$40 is assessed for each ton of hazardous waste placed, deposited, dumped, or disposed of onto or into the land at a disposal facility in Iowa.

d. An Iowa facility which treats or disposes of hazardous waste is considered a generator for the purposes of paragraph 149.4(2)“b” if the wastes are subsequently transported off of the treatment or disposal facility site.

149.4(3) *Waste generated outside of Iowa.* For hazardous waste generated outside of the state of Iowa and imported into the state for treatment or disposal, the following fees shall be paid by the treatment or disposal facilities owner or operator:

a. A fee of \$2 is assessed for hazardous waste destroyed or treated at the disposal facility to render the hazardous waste nonhazardous. However, hazardous residues resulting from such treatment are subject to all applicable fees.

b. A fee of \$40 is assessed for each ton of hazardous waste placed, deposited, dumped, or disposed of onto or into the land at a disposal facility in Iowa.

c. An Iowa facility which treats or disposes of hazardous waste is considered a generator for the purposes of paragraph 149.4(2)“b” if the wastes are subsequently transported off of the treatment or disposal facility site.

149.4(4) A person who is subject to the fee schedule set out in rule 149.4(455B) who generates, transports, treats or disposes of a fraction of a ton of hazardous waste shall pay a proportionate fee equal to the fraction of a ton.

567—149.5(455B) Form, manner, time and place of filing.

149.5(1) *Form.* Any person to whom this chapter applies must file a completed Form 179 “Hazardous Waste Program—Transportation, Treatment and Disposal Fees” which is provided by the department as specified in rule 567—140.6(455B).

149.5(2) *Manner, time and place.* Fees are due on April 15 for the previous calendar year. The person shall present or mail the completed form with the appropriate fees to: Accounting, Department of Natural Resources, Henry A. Wallace Building, 900 East Grand Avenue, Des Moines, Iowa 50319.

567—149.6(455B) Identification, sampling and analytical requirements.

149.6(1) The hazardous wastes to which the fee schedule listed in rule 149.4(455B) applies are those identified in 40 CFR Part 261 through October 23, 1985, as adopted by reference by rule 567—141.2(455B).

149.6(2) For the purposes of Iowa Code subsection 455B.424(1), the weight of the waste less its water content is determined using the total solids method 209A (for liquids) or 209F (for sludges or semisolids), 16th Edition of Standard Methods for the Examination of Water and Wastewater, 1985.

149.6(3) Petitions for equivalent testing or analytical methods are addressed in 40 CFR 260.21 as adopted by reference by 567—subrule 141.1(1).

567—149.7(455B) Reporting and record keeping.

149.7(1) Manifests. Those persons subject to the manifesting requirements of 40 CFR Part 262 as amended through July 15, 1985, as adopted by reference by 567—141.3(455B), shall maintain the manifests for the purpose of determining the amount of fees to be addressed as set out in rule 149.5(455B).

149.7(2) Operating records. Those persons who generate hazardous waste who are not subject to the manifesting requirements shall maintain operating records in accordance with rules 567—141.5(455B) and 567—141.6(455B).

149.7(3) A copy of completed Form 179 must be kept for a period of at least three years from the due date of the form.

149.7(4) All records required under this chapter must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of the department who is duly designated by the director.

567—149.8(455B) Failure to pay fees. If the director finds that a person has failed to pay the fees assessed by this chapter, the director shall enforce the collection of the delinquent fees. A penalty of 15 percent of the fee due in addition to the fee due shall be collected.

567—149.9(455B) Suspension of fees. If after collection of all fees due in a given year the hazardous waste remedial fund has a balance in excess of \$6 million by July 1 of a calendar year, the department shall suspend the collection of fees. If the balance falls below \$3 million, the fee collection shall be reimposed commencing the beginning of the next calendar quarter. Notices of suspension of fees and reinstatement of fees shall be provided by the department.

These rules are intended to implement Iowa Code section 455B.424.

[Filed 11/27/85, Notices 7/31/85, 10/9/85—published 12/18/85, effective 1/22/86]

[Filed emergency 11/14/86—published 12/3/86, effective 12/3/86]

CHAPTER 150
LOCATION AND CONSTRUCTION OF HAZARDOUS WASTE
TREATMENT, STORAGE AND DISPOSAL FACILITIES

[Prior to 12/3/86, Water, Air and Waste Management[900]]

Rescinded IAB 6/13/12, effective 7/18/12

CHAPTER 151
CRITERIA FOR SITING HAZARDOUS WASTE MANAGEMENT FACILITIES

Rescinded IAB 6/13/12, effective 7/18/12

CHAPTER 152
CRITERIA FOR SITING LOW-LEVEL RADIOACTIVE
WASTE DISPOSAL FACILITIES

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—152.1(455B) Authority, purpose and scope.

152.1(1) *Authority.* This chapter is authorized in Iowa Code section 455B.486, which relates to the siting of low-level radioactive waste disposal facilities.

152.1(2) *Purpose.* These rules establish criteria for identifying sites which are suitable for operation of low-level radioactive waste disposal facilities. The waste management authority will apply these criteria to identify and recommend to the commission sites suitable for locating these facilities.

152.1(3) *Scope.* These rules apply only to facilities which are owned or operated by the state of Iowa and privately owned or operated facilities which are located upon land owned by the state of Iowa which are used for low-level radioactive waste disposal pursuant to Iowa Code section 455B.486.

567—152.2(455B) Definitions. In addition to the definitions in Iowa Code section 455B.482, the following definitions apply to this chapter:

“Aquifers” means water-bearing geological formations, group of formations, or part of a formation capable of yielding significant amounts of groundwater for beneficial use.

“Conservation area” means any park, recreation area, wildlife area, forest, prairie, preserve, natural area, scenic area owned, managed, or under control of any government agency or organized conservation group on or before the effective date of these rules.

“Criterion” means a test, rule, measure, or model by which judgment will be made.

“Critical wildlife habitat” means any areas known to be inhabited on a seasonal or permanent basis by, or to be critical at any stage of the life cycle of, any wildlife or vegetation identified as “rare,” “threatened,” or “endangered” by official federal or state lists of species, or is under active consideration for listing.

“Cultural area” means any known property of recognized archaeological, architectural, cultural or historical significance as listed in or eligible for the National Register of Historic Places, the significant state site records of the Office of Historic Preservation, the office of the state archaeologist, or is under active consideration for listing. Archaeological property shall include, but is not limited to, ancient mortuary sites.

“Dam hazard area” means any area identified as an area of dynamic flooding below a dam (the inundation zone) or area of static flooding above a dam (flood pool). The inundation zone includes the area that would be flooded by a flood wave generated by dam failure during a 100-year flood. The static flooding zone is equal to the pool level reached during a 100-year inflow flood, or the top of the dam, whichever is greater.

“Drinking water source” means the groundwater or surface water intake of drinking water used for human consumption.

“Facility” means any hazardous waste management facility including land and structures, appurtenances, improvement and equipment for handling, treatment, storage or disposal of hazardous wastes.

“Floodplain” means the land adjacent to a stream which has been or may be inundated by a flood having the magnitude of the regional 100-year flood.

“Geological hazard structures” means any faults, fracture zones, or other structures that may provide pathways to groundwater.

“Karst areas” means a type of topography or surface area covered by alluvial or colluvial sediments that may form over limestone, dolomite, or gypsum formations by dissolving or solutions, and that are characterized by closed depressions or sinkholes, caves, and underground drainage.

“Mineral and energy resources” means minerals, construction materials, metals, coal, gas, and oil.

“Mining activity” means any area of past or present underground or surface mining, mineral extraction, or major exploration or production drilling for oil, gas, or mineral resources, and any area likely to be influenced by mining activity through subsidence or surface deformation.

“Nonattainment area” means any area not attaining the National Ambient Air Quality Standards as defined in Part D of the Clean Air Act.

“Population area” means any commercial, school, church, social, medical facility, elderly housing, correctional facility, mobile home park, or incorporated residential area.

“Prevention of significant deterioration” is defined in Part C of the Clean Air Act.

“Prime farmland” means any area identified as such by the United States Department of Agriculture, Soil Conservation Service.

“Protected basins” means any portion of the drainage basin of protected water areas within two miles of the water area. Protected water areas are those classified as such pursuant to Iowa Code chapter 462B, or high-quality waters, high-quality resource waters or Class “C” waters designated in 567—Chapter 61.

“Proximity to major generators” means within 50 miles of the central point of generation based on the latest available RCRA biennial report on hazardous waste generation in Iowa.

“Seismic risk” means the relative geologic stability of the site based on the likelihood of structural damage due to seismic events. Seismic risk categories, as developed by the National Oceanographic and Atmospheric Administration, will be used to rate relative stability.

“Site” means the land area upon which a facility is, or is proposed to be, physically located, including but not limited to adjacent land use for utility systems such as repair, storage, processing, or other areas incident to the facility or operation.

“Siting authority” means the party with the specific authority to select sites for facilities.

“Transportation routes” means any public all-weather hard-surfaced road with adequate capacity to carry the type and volume of commercial vehicular traffic serving the facility for the entire year with no embargoes, special permits or other restrictions on roads, overpasses or bridges that would prevent transportation to the facility.

“Utilities and services” means electricity, gas, water and sewer utilities, and police, fire protection, and emergency medical services.

“Wetlands” means any area inundated by surface or groundwater with a frequency sufficient to support, under normal circumstances, a prevalence of vegetation or wildlife requiring saturated or seasonally saturated soil conditions for growth or reproduction. These areas include swamps, marshes, bogs, sloughs, wet meadows, mudflats, sandflats, ponds, lakes, and similar areas.

567—152.3(455B) Siting criteria. The siting authority shall use the following criteria in selecting sites for facilities.

152.3(1) Exclusionary criteria. No facility shall be sited within:

- a. An area of seismic risk category of “4” or greater;
- b. A 100-year floodplain;
- c. A dam hazard area;
- d. An area with less than 100 feet of aquitard between the base of operation and the subjacent aquifer;
- e. One mile of a geologic hazard structure;
- f. One mile of a karst area;
- g. One mile of an area of past or present surface or underground mining activity;
- h. One mile of wetland;
- i. Any protected basin; or
- j. Ten miles of any nuclear power plant.

152.3(2) Quantitative criteria. The quantitative criteria and corresponding values which are to be applied are in Table 1 as follows:

Table 1

	Value Assigned		
	<u>5 points</u>	<u>2 points</u>	<u>Excluded</u>
Mineral and Energy Resources	No significance present within one mile	Significant presence with perpetual ban on recovery	—
Drinking Water Sources	No sources within one mile	Source permanently closed and alternative water source provided	—
Critical Wildlife Habitats	No habitat within one mile	Permanent buffer and no interference	Interference
Conservation Areas	No area within one mile	Permanent buffer and no interference	Interference
Cultural Areas	No area within one mile	Permanent buffer and no interference	Interference
Population Areas	No area within one mile	Permanent buffer and no interference	Interference
Prime Farmland	Less than 25% prime farmland	More than 25% prime farmland	—
Nonattainment With NAAQS	No significant impact predicted	Little significant impact predicted	—
Prevention of Significant Deterioration	Good data available and sufficient increments	Little data available but increment available	—
Transportation Routes	Within 5 miles of major highway, 10 miles of a rail line, and 50 miles of interstate highway	Beyond 5 miles from major highway, 10 miles of a rail line, or 50 miles from interstate highway	—
Proximity to Major Generators	Within 50 miles of major generators	Beyond 50 miles from generators	—
Utilities and Services	Accessible services available	Sites needing services extended	—

152.3(3) Methodology. The methodology to be used by the siting authority in applying these criteria is contained in the report “Hazardous Waste Management Facility Siting Criteria and Methodology, August 1987” which is adopted by reference. The criteria listed in this rule shall be applied in three steps as follows:

- a.* Step 1. The exclusionary criteria shall be applied to the entire state. Step 2 shall be applied to those areas remaining.
- b.* Step 2. The quantitative criteria shall be applied to the nonexcluded areas identified in Step 1. The values in Table 1 shall be applied and the potential sites ranked in order of priority.
- c.* Step 3. The top rated potential sites shall be subject to detailed evaluation. The best site for the facility shall be selected.

[Filed 11/25/87, Notice 9/9/87—published 12/16/87, effective 1/20/88]

CHAPTERS 153 to 208
Reserved

CHAPTER 209
LANDFILL ALTERNATIVES FINANCIAL ASSISTANCE PROGRAMS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—209.1(455B,455E) Goal. The goal of landfill alternatives financial assistance programs is to reduce through implementation of solid waste management projects the amount of solid waste being generated and the amount of solid waste being landfilled.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.2(455B,455E) Purpose. The purpose of these programs is to provide financial assistance to applicants implementing projects and programs leading to the diversion of solid waste from sanitary landfills.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.3(455B,455E) Definitions.

“Abandoned” means that the building has been unoccupied for a minimum of six continuous months.

“Asbestos-containing material” or *“ACM”* means any material that contains more than 1 percent of asbestos.

“Building renovation” means repairs that stabilize or improve the structural integrity of the building, including but not limited to roof repair or replacement, building stabilization, and the tuck-pointing of exterior walls.

“Cost share” means the applicant’s share of the eligible costs of the proposed project.

“Deconstruction” means the selective dismantlement of a building for the purpose of maximizing reuse and recycling opportunities through source separation while minimizing disposal costs.

“Demonstration project” means a project that is innovative or new to the state of Iowa.

“Department” means the Iowa department of natural resources.

“Derelict building grant eligibility” means any county or municipal government with a population of 5,000 or fewer is eligible to apply for a derelict building grant. An applicant may partner with a local nonprofit organization on a project.

“Eligible costs” means costs directly related to the project and for which financial assistance moneys may be used.

“Financial assistance” means monetary assistance in the form of grants, loans, or forgivable loans that is awarded under these rules to an applicant.

“Forgivable loan” means financial assistance that does not require repayment to the department.

“Indirect costs” means costs not directly arising from a specific product, function, or activity.

“Landfill diversion rate” means the weight of materials diverted from a sanitary landfill, divided by the total weight of the building and its contents, expressed as a percentage. Materials diverted from a sanitary landfill do not include material combusted without energy recovery or material dumped or discarded in violation of Iowa Code sections 455B.307 and 455B.307A.

“Loan” means an award of financial assistance with the requirement that the award be repaid including interest as applicable.

“Overhead costs” means expenses not chargeable to a particular part of the work or product, including but not limited to utilities, insurance, and rent.

“Phase I environmental assessment” means review of known environmental records and land use information about the site and vicinity.

“Phase II environmental assessment” means actual soil, groundwater and structural material sampling and testing to confirm or deny the presence of contamination.

“Recipient” means any applicant selected to receive financial assistance under these rules.

“Sanitary landfill” means a permitted disposal site where solid waste is buried between layers of earth.

“Solid waste alternatives program eligibility” means any unit of local government, public or private group, individual or business that has an interest in or has responsibility for solid waste management in

Iowa and is currently in compliance with all applicable state statutes and regulations is eligible to apply for the solid waste alternatives program (SWAP).

“Waste reduction” means practices which reduce, avoid, or eliminate the generation of solid waste at the source. Waste reduction is not merely the shifting of a waste stream from one medium to another medium.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.4(455B,455E) Role of the department. The department is responsible for the administration of funds for projects receiving financial assistance under these rules. The department will ensure that funds disbursed meet guidelines established by Iowa Code sections 455E.11(2)“a”(1)(e) and 455E.11(2)“a”(1)(f).

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.5(455B,455E) Funding sources. The department will use moneys that are appropriated by the legislature and that may be obtained from other sources for the purpose of achieving the goals outlined in these rules. The department will ensure that moneys appropriated meet both federal and state guidelines pertaining to their use.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.6(455B,455E) Reduced award. The department reserves the right to offer financial assistance in an amount less than that requested by the applicant. In the event that financial assistance offered is less than the amount requested by an applicant, the applicant may be asked to document the impact on the proposed project. Reduced awards shall be offered when the department determines that:

1. Program resources are insufficient to provide the level of financial assistance requested to all applicants to which the department intends to offer financial assistance.
2. The applicant could implement the project at a reduced level of financial assistance and achieve the project objectives and the goals of the program.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.7(455B,455E) Fund disbursement limitations. No funds shall be disbursed until the department has:

1. Determined the total estimated cost of the project;
2. Determined that financing for the cost-share amount is ensured by the recipient;
3. Received final design plans from the recipient, if applicable;
4. Received confirmation that all permits or permit amendments have been obtained by the recipient;
5. Received commitments from the recipient to implement the project;
6. Executed a written agreement with the recipient; and
7. Determined that the recipient is currently in compliance with all applicable state statutes and regulations.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.8(455B,455E) Minimum cost share. An applicant shall provide a minimum cash match for the purchase of each good and service for which department-awarded financial assistance will be used. The applicant’s minimum cost share shall be in accordance with subrule 209.16(3) for the derelict building grant program.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.9(455B,455E) Denial of financial assistance. An applicant may be denied financial assistance for any of the following reasons:

1. Funds are insufficient to award financial assistance to all qualified applicants.
2. An applicant does not meet eligibility requirements pursuant to provisions of subrule 209.15(1) for the solid waste alternatives program or subrule 209.16(1) for the derelict building grant program.
3. An applicant does not provide sufficient requested information on forms provided by the department pursuant to rule 567—209.12(455B,455E).

4. An applicant has previously received financial assistance under these rules and is determined by the department to be delinquent in repaying the loan or delinquent in submitting required documentation.

5. The goals or scope of the project is not consistent with rules 567—209.1(455B,455E) and 567—209.2(455B,455E).

6. The project does not meet the criteria of an eligible project in subrule 209.15(2) for the solid waste alternatives program or subrule 209.16(2) for the derelict building grant program.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.10(455B,455E) Eligible costs. Applicants may request, for the implementation and operation of a project, financial assistance which includes, but is not limited to, funds for the purpose of:

1. Purchase and installation of waste reduction equipment;
2. Purchase and installation of collection, processing, or hauling equipment;
3. Development, printing and distribution of educational materials;
4. Planning and implementation of educational forums, including but not limited to workshops;
5. Materials and labor for construction, deconstruction, or renovation of buildings;
6. Salaries directly related to implementation and operation of the project;
7. Laboratory analysis costs; and
8. Engineering or consulting fees.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.11(455B,455E) Ineligible costs. Financial assistance shall not be provided or used for costs including, but not limited to, the following:

1. Taxes;
2. Vehicle registration;
3. Overhead expenses;
4. Indirect costs;
5. Legal costs;
6. Contingency funds;
7. Proposal preparation;
8. Contractual project administration;
9. Land acquisition;
10. Office furniture, office computers, fax machines and other office furnishings and equipment;
11. Costs for which payment has been or will be received under another federal, state or private financial assistance program;
12. Costs incurred before a written agreement has been executed between the applicant and the department; and
13. Insurance premiums or other costs associated with insuring items purchased using program funds.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.12(455B,455E) Applications. Applicants shall submit applications on forms provided by the department. Applications are considered part of the public record. Unless otherwise designated in the solid waste alternatives program application forms or the derelict building grant program application guideline forms, applications will be accepted by the department during normal business hours throughout the year.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.13(455B,455E) Selection.

209.13(1) To receive consideration under these rules, applications for financial assistance submitted to the department must be provided to the agency responsible for submitting an approved solid waste comprehensive plan or a subsequent solid waste comprehensive plan or by solid waste agencies participating in the environmental management system for agency review and comment. Applications shall be provided to the agency in the area in which the proposed project is located or the area or areas in which the proposed project will be implemented.

209.13(2) The department shall coordinate evaluation of applications, and applicants will be awarded financial assistance based on review committee recommendations.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.14(455B,455E) Written agreement. Recipients shall enter into a contract with the department for the purposes of implementing the project for which financial assistance has been awarded. The agreement shall be signed by the appropriate department signatory and the recipient's authorized signatory. Conditions to successfully implement and manage agreements shall be expressed in the signed agreement. The department may terminate agreements and seek the return of funds released under the agreement for failure by the recipient to perform under the terms and conditions of the agreement. Amendments to agreements may be adopted by mutual written consent of the department and the recipient.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.15(455B,455E) Solid waste alternatives program. Financial assistance awarded under the solid waste alternatives program shall be used to implement activities that support the practical and beneficial use of solid waste materials and for activities leading to a reduction in the reliance on sanitary landfills for disposal of solid waste.

209.15(1) Eligible applicants. Any unit of local government, public or private group, individual or business that has an interest in or has responsibility for solid waste management in Iowa and is currently in compliance with all applicable state statutes and regulations is eligible to apply for the solid waste alternatives program.

209.15(2) Eligible projects. The department may provide financial assistance to applicants for the following types of projects that are consistent with the goal and purpose of this program:

- a. Best practices — practices and programs that will move Iowa toward long-term pollution prevention, waste reduction and recycling sustainability;
- b. Education — practices and programs that are consistent with a coordinated statewide message on pollution prevention, waste reduction, and recycling to ensure ongoing support of these integrated solid waste management activities; and
- c. Market development — practices and programs that develop a demand for value-added recyclables sufficient to provide increased and stable commodity markets.

209.15(3) Type of financial assistance. The type of financial assistance (forgivable loan, zero interest loan, low-interest loan) offered to an applicant is dependent upon factors such as, but not limited to, the amount of program funds awarded, level of new landfill diversion, profit generation and project uniqueness. The department reserves the right to offer any combination of types of financial assistance to any selected project.

209.15(4) Loans. The term of all loans executed under these rules shall be determined on a case-by-case basis and shall be based on the specific capital costs financed, as well as the terms of other financing provided for the project. The written agreement between the department and the recipient will establish other conditions or terms needed to manage or implement the project.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

567—209.16(455B,455E) Derelict building grant program. Financial assistance awarded under the derelict building grant program is available to communities of 5,000 or fewer to help improve the attractiveness and appearance of their jurisdictions by providing financial assistance for eligible projects. Each project must have a landfill diversion component.

209.16(1) Eligible applicants. Any county or municipal government with a population of 5,000 or fewer is eligible to apply for a derelict building grant. An applicant may partner with a local nonprofit organization on a project.

209.16(2) Eligible projects. A community's building is eligible for the program if the building meets the following criteria:

- a. The building is an abandoned commercial or public building of which a local government has ownership or an intent to own.
- b. The building is not on the National Register of Historic Places.

209.16(3) Eligible activities and amount of financial assistance. The eligible activities and amount of financial assistance for each are:

a. Asbestos-containing material inspections: 100 percent reimbursement for inspection costs conducted by a state of Iowa-licensed asbestos contractor.

b. Abatement of asbestos-containing material: 100 percent reimbursement, not to exceed \$10,000, for abatement of ACM performed by a state of Iowa-licensed asbestos contractor. A 50 percent cost share is required for those costs exceeding \$10,000.

c. Structural engineering analysis: 100 percent reimbursement not to exceed \$1,500 for a structural engineering analysis conducted by a licensed structural engineer or architectural historian to determine the ability to renovate the building. The recipient is responsible for all costs exceeding \$1,500.

d. Phase I environmental assessment: 100 percent reimbursement not to exceed \$3,000 for conducting a Phase I environmental assessment. The recipient is responsible for all costs exceeding \$3,000.

e. Phase II environmental assessment: 50 percent reimbursement not to exceed \$2,500 for conducting a Phase II environmental assessment. The recipient is responsible for all costs exceeding \$5,000. The need for this assessment is determined by the results of the Phase I environmental assessment and involves the sampling of structure components, soil, and groundwater to confirm or deny the presence of contamination.

f. Building renovation: 50 percent reimbursement not to exceed \$50,000 for renovation costs, including but not limited to:

- (1) Restoration or removal of materials for reuse, either at the site or off site, or for recycling.
- (2) Roof repair or replacement.
- (3) Building stabilization.
- (4) Tuck-pointing of exterior walls.

g. Deconstruction: 50 percent reimbursement not to exceed \$50,000 for costs related to deconstruction. All deconstruction projects must achieve a minimum landfill diversion rate of 30 percent of the structure by weight to receive reimbursement for deconstruction costs.

209.16(4) *Deconstruction cost-share incentive.* For every additional 10 percent above 30 percent of landfill diversion by weight that is documented upon completion of the project, the applicant's cost share is reduced by 5 percent and the grant award amount will increase by 5 percent. The maximum grant award for deconstruction projects shall not exceed \$75,000.

[ARC 2314C, IAB 12/23/15, effective 1/27/16]

These rules are intended to implement Iowa Code sections 455B.301A and 455E.11.

[Filed emergency 2/18/88 after Notice 12/30/87—published 3/9/88, effective 2/19/88]

[Filed 12/23/88, Notice 10/19/88—published 1/11/89, effective 2/15/89]

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[Filed 3/25/94, Notice 1/19/94—published 4/13/94, effective 5/18/94]

[Filed 3/19/99, Notice 1/13/99—published 4/7/99, effective 5/12/99]

[Filed ARC 2314C (Notice ARC 2140C, IAB 9/16/15), IAB 12/23/15, effective 1/27/16]

CHAPTER 210
BEAUTIFICATION GRANT PROGRAM
Rescinded **ARC 1956C**, IAB 4/15/15, effective 5/20/15

CHAPTER 211

FINANCIAL ASSISTANCE FOR THE MANAGEMENT OF HOUSEHOLD HAZARDOUS MATERIALS AND HAZARDOUS WASTE FROM VERY SMALL QUANTITY GENERATORS

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—211.1(455E,455F) Purpose. The purpose of this program is to reduce the amount of hazardous materials disposed of in Iowa's sanitary landfills, thereby protecting groundwater resources, the health and safety of Iowa citizens, and the environment.

The costs and accessibility of hazardous materials management can be improved by the establishment and maintenance of a system of regional collection centers (RCCs) and satellite facilities for the safe and proper management of household hazardous materials and hazardous materials from very small quantity generators (VSQGs). Therefore, the department may provide financial assistance for costs associated with establishing or improving RCCs and satellite facilities, when such funding is available. The department may also provide financial assistance for ongoing collection and disposal activities which result in eligible pounds, when such funding is available.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—211.2(455E,455F) Definitions. For the purposes of this chapter, these terms shall have the following meanings:

"Applicant for RCC or satellite facility financial assistance" means an RCC or satellite facility operated by a private agency, a local government or a public agency representing local governments pursuant to Iowa Code chapter 28E.

"Department" means the Iowa department of natural resources.

"Eligible pounds" means household hazardous waste or hazardous waste from VSQGs which is disposed of or recycled by a licensed hazardous waste contractor. VSQG hazardous waste for which an RCC is required to charge a fee under Iowa Code section 455F.8A is considered eligible pounds if there is a corresponding disposal charge from a hazardous waste contractor. "Eligible pounds" means net weight as shown on the final disposition documents. A manifest shows an estimated weight and cannot be used to determine eligible pounds. VSQG hazardous waste or household hazardous waste which has no disposal cost, or for which RCCs receive compensation or charge a fee, is not eligible pounds. Materials such as cathode ray tubes, electronics, and used oil which are not destined for final disposal, but are instead recycled for reuse of components, are not eligible pounds.

"Financial assistance" means monetary assistance including grants, cash payments, or support by other financial means.

"Hazardous waste" or *"HW"* means the same as defined in Iowa Code section 455B.411.

"Hazardous waste contractor" means a private company that provides management (e.g., recycling, disposal) of household hazardous waste or VSQG hazardous waste in compliance with federal regulations. "Hazardous waste contractor" does not include regional collection centers.

"Household hazardous materials" or *"HHM"* means the same as defined in Iowa Code section 455F.1.

"Household hazardous waste" or *"HHW"* means an HHM as defined in Iowa Code section 455F.1 which has served its intended use and is designated for disposal.

"Indirect costs" means costs that are not identifiable with a specific product, function or activity.

"Overhead costs" means expenses not chargeable to a particular part of the work or product including, but not limited to, utilities and insurance.

"RCC mobile unit" means a truck or trailer owned and operated under the direction of a regional collection center that can be moved to different sites within a region. A mobile unit is used to perform collection events and to transport collected materials to the RCC for sorting and consolidation.

"Regional collection center" or *"RCC"* means the same as defined in Iowa Code section 455F.1.

"Satellite facility" means the same as defined in Iowa Code section 455F.1.

"Very small quantity generator" or *"VSQG"* means a generator that generates less than or equal to the following amounts in a calendar month:

1. 100 kilograms (220 lbs) of non-acute hazardous waste;

2. 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e);
3. 100 kilograms (220 lbs) of any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).

[ARC 8518B, IAB 2/10/10, effective 3/17/10; ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—211.3(455E,455F) Role of the department. The department is responsible for the administration of financial assistance sponsored under this chapter. The department shall ensure that funds disbursed meet guidelines established in Iowa Code chapters 455E and 455F. An applicant for financial assistance under this chapter may submit any eligible project as defined in the application provided by the department. The department shall determine which projects, if any, will receive funding after review of all applications, subject to available funding.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—211.4(455E,455F) Funding sources. The department will use funds appropriated by Iowa Code sections 455E.11(2)“a”(2)(d) and 455E.11(2)“c” to achieve the purpose of this chapter. The department shall ensure that moneys appropriated meet both federal and state guidelines pertaining to the use of the moneys.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—211.5(455E,455F) Eligible costs. Applicants may request financial assistance for eligible expenses including, but not limited to, the following:

211.5(1) Materials and labor for construction and the purchase cost of structures or RCC mobile units to be used in the operation of an RCC or satellite facility, including but not limited to site excavation for the structure and modifications to control runoff.

211.5(2) Education programs for households and VSQGs within the RCC service area. Eligible education expenses may include but are not limited to:

- a. Public education and awareness materials and supplies.
- b. Fees for public service announcements.

211.5(3) Equipment relating directly to the RCC or satellite facility operation.

[ARC 8518B, IAB 2/10/10, effective 3/17/10; ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—211.6(455E,455F) Ineligible costs. Applicants for RCC financial assistance cannot request monetary assistance for the following costs:

1. Taxes.
2. Vehicle registration.
3. Indirect or overhead costs.
4. Legal costs.
5. Contingency funds.
6. Land acquisition.
7. Disposal of hazardous materials.
8. Office equipment.
9. Staffing costs.
10. Site and building design fees.

[ARC 8518B, IAB 2/10/10, effective 3/17/10; ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—211.7(455E,455F) RCC and satellite facility financial assistance.

211.7(1) An applicant for RCC and satellite financial assistance shall submit to the department a completed application on a form provided by the department.

211.7(2) The department shall coordinate the evaluation of proposals. Applications will be evaluated based on selection criteria contained in the application form. Prior to receiving financial assistance from the department, an RCC must obtain a regional collection center license. A satellite facility shall provide documentation of a contractual arrangement with a licensed RCC for removal of the waste to be collected.

211.7(3) The applicant must be in compliance with applicable federal and state statutes and regulations.

[ARC 8518B, IAB 2/10/10, effective 3/17/10; ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—211.8(455E,455F) Grant denial. An application may be denied for the following reasons, including but not limited to:

1. The applicant does not meet eligibility requirements pursuant to the provisions of this chapter.
2. The applicant does not provide sufficient information requested in the application proposal pursuant to this chapter.
3. The project goals or scope is not consistent with this chapter.
4. Funds are insufficient to award financial assistance to all qualified applicants.
5. The applicant has not met contractual obligations of previous grant awards.
6. The department received the application after the deadline stated in the application and guidelines.
7. The applicant is found to be out of compliance with applicable federal or state statutes or regulations.

[ARC 3995C, IAB 9/12/18, effective 10/17/18]

567—211.9(455E,455F) RCC collection and disposal support funding.

211.9(1) All RCCs are eligible to receive funding support, when available, from the department to properly manage eligible pounds of VSQG hazardous waste and household hazardous waste. To receive funding, an RCC must be in compliance with applicable federal and state statutes and regulations. The source for this funding is described in Iowa Code section 455E.11(2) “a”(2)(d) and (e).

211.9(2) To be eligible to receive support and disposal-funding assistance, an RCC must:

- a. Have household hazardous waste and VSQG hazardous waste removed by a licensed hazardous waste contractor.
- b. Correctly complete the hazardous materials collection semiannual report on a form supplied by the department.
- c. Attach the following documentation:
 - (1) Hazardous waste contractor invoices depicting cost and hazardous waste types.
 - (2) The net weight calculations of household hazardous waste and VSQG hazardous waste obtained by subtracting container weight from final disposal weight, not the manifest weight.
 - (3) Documentation that all household hazardous waste and VSQG hazardous waste was disposed of by a licensed hazardous waste contractor.
 - (4) Documentation of materials shipped using final disposal receipts.
- d. Submit regional collection center semiannual reports by September 15 for the portion of the current calendar year January 1 through June 30, and by March 15 for the portion of the previous calendar year July 1 through December 31. Reports submitted after the due date without prior approval by the department are not eligible for funding.

211.9(3) Fall collection and disposal funding will be based on the regional collection center semiannual report due September 15 and on available funding. An RCC will receive a percentage of the available funding in an amount proportional to the amount of eligible pounds the RCC recycled or disposed of through a hazardous waste contractor, as reported on the regional collection center semiannual report form, compared to the total amount of eligible pounds recycled or disposed of by all RCCs as reported on the regional collection center semiannual report form.

Spring collection and disposal funding will be based on the total eligible pounds reported for the calendar year and on available funding. An RCC will receive a percentage of the available funding for the calendar year minus the amount received for the fall payment, in an amount proportional to the amount of eligible pounds the RCC recycled or disposed of through a hazardous waste contractor, as reported on the regional collection center semiannual report form for the calendar year, compared to the total amount of eligible pounds recycled or disposed of by all RCCs as reported on the regional collection center semiannual report form.

[ARC 8518B, IAB 2/10/10, effective 3/17/10; ARC 3995C, IAB 9/12/18, effective 10/17/18]

These rules are intended to implement Iowa Code sections 455F.8A and 455F.8B.

[Filed 2/26/93, Notice 12/9/92—published 3/17/93, effective 4/21/93]
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[Filed emergency 3/30/01—published 4/18/01, effective 3/30/01]
[Filed 2/1/02, Notice 10/17/01—published 2/20/02, effective 3/27/02]
[Filed 1/27/06, Notice 11/9/05—published 2/15/06, effective 3/22/06]
[Filed ARC 8518B (Notice ARC 8313B, IAB 11/18/09), IAB 2/10/10, effective 3/17/10]
[Filed ARC 3995C (Notice ARC 3826C, IAB 6/6/18), IAB 9/12/18, effective 10/17/18]

CHAPTER 212
LOANS FOR WASTE REDUCTION AND
RECYCLING PROJECTS
Rescinded IAB 2/20/02, effective 3/27/02

CHAPTER 213
PACKAGING—HEAVY METAL CONTENT

Chapter rescission date pursuant to Iowa Code section 17A.7: 1/1/28

567—213.1(455D) Purpose. The purpose of this chapter is to implement the provisions of Iowa Code section 455D.19, which seeks to reduce toxicity of packaging waste by eliminating the addition of heavy metals such as lead, mercury, cadmium, and hexavalent chromium in packaging and packaging components.

567—213.2(455D) Applicability. This chapter applies to manufacturers and distributors of packaging and packaging materials offered for sale or for promotional purposes in the state.

567—213.3(455D) Definitions. The following terms, as used in this chapter, shall have the following meanings:

“Department” means the department of natural resources as created under Iowa Code section 455A.2.

“Distributor” means a person who takes title to one or more packages or packaging components purchased for promotional purposes or resale. A person involved solely in delivering or storing packages or packaging components on behalf of third parties is not a distributor.

“Incidental presence” means that these elements were not intentionally introduced during manufacturing or distribution and are below the concentration levels established by the department in subrule 213.4(3).

“Intentional introduction” means an act of deliberately utilizing a regulated metal in the formulation of a package or packaging component where its continued presence is desired in the final package or packaging component to provide a specific characteristic, appearance, or quality. Intentional introduction does not include the use of a regulated metal as a processing agent or intermediate to impart certain chemical or physical changes during manufacturing, if the incidental presence of a residue of the metal in the final package or packaging component is neither desired nor deliberate and if the final package or packaging component is in compliance with Iowa Code section 455D.19(4), paragraph “c.” Intentional introduction also does not include the use of recycled materials as feedstock for the manufacture of new packaging materials, if the recycled materials contain amounts of a regulated metal and if the new package or packaging component is in compliance with Iowa Code section 455D.19(4), paragraph “c.”

“Manufacturer” means a person who produces one or more packages or packaging components.

“Manufacturing” means physical or chemical modification of one or more materials to produce packaging or packaging components.

“Offer for promotional purposes” means any transfer of title or possession, or both, of packaging or products in packaging without consideration.

“Offer for sale” means any transfer of title or possession, or both, exchange, barter, lease, rental, conditional or otherwise, of packaging or products in packaging for a consideration in any manner or any means whatsoever.

“Package” means a container which provides a means of marketing, protecting, or handling a product, including a unit package, an intermediate package, or a shipping container. Package also includes, but is not limited to, unsealed receptacles, such as carrying cases, crates, cups, pails, rigid foil and other trays, wrappers and wrapping films, bags, and tubs.

“Packaging component” means any individual assembled part of a package, including, but not limited to, interior and exterior blocking, bracing, cushioning, weatherproofing, exterior strapping, coatings, closures, inks, labels, and tin-plated steel.

“Regulated metal” means any metal regulated under this chapter.

“Reusable entities” means packaging or packaging components having a controlled distribution and reuse subject to the exemption provided in Iowa Code section 455D.19(5), paragraph “e.”

“Tin-plated steel” means a material that meets the American Society for Testing and Materials (ASTM) specification A-623 and shall be considered as a single package component. Electrogalvanized coated steel

and hot-dipped coated galvanized steel that meets the American Society for Testing and Materials (ASTM) specifications A-879 and A-529 shall be treated in the same manner as tin-plated steel.

567—213.4(455D) Prohibition—schedule for removal of incidental amounts.

213.4(1) *Prohibition of packaging.* A manufacturer or distributor shall not offer for sale or sell, or offer for promotional purposes, a package or packaging component in this state, which includes in the package itself or in any packaging component inks, dyes, pigments, adhesives, stabilizers or any other additives, any lead, cadmium, mercury, or hexavalent chromium which has been intentionally introduced as an element during manufacturing or distribution. This prohibition does not apply to the incidental presence of any of these elements. In addition, this prohibition does not apply to any refillable glass and ceramic package or packaging component that is managed under a comprehensive system resulting in reuse and where the lead and cadmium from the component do not exceed the Toxicity Characteristic Leachability Procedures (TCLP) of leachability of lead and cadmium as set forth by the United States Environmental Protection Agency.

213.4(2) *Prohibition of sale of product in packaging.* Rescinded IAB 10/8/97, effective 11/12/97.

213.4(3) *Concentration levels.* The sum of the concentration levels of lead, cadmium, mercury, and hexavalent chromium present in a package or packaging component shall not exceed 100 parts per million by weight, or 0.01 percent. Concentration levels of lead, cadmium, mercury, and hexavalent chromium shall be determined using American Standard of Testing Materials test methods, as revised, or U.S. Environmental Protection Agency test methods for evaluating solid waste, S-W 846, as revised.

213.4(4) *Substitute materials.* No material used to replace lead, cadmium, mercury, or hexavalent chromium in a package or packaging component may be used in a quantity or manner that creates a hazard as great or greater than the hazard created by the lead, cadmium, mercury, or hexavalent chromium. The Certificate of Compliance will require an assurance to this effect.

567—213.5(455D) Certification of compliance. A manufacturer or distributor of packaging or packaging components shall make available to purchasers, to the department, and to the general public upon request, certificates of compliance conforming to the requirements of this rule. Certificates provided shall substantially conform with either or both, as applicable, of the following forms:

REDUCTION OF TOXICS IN PACKAGING LAW
CERTIFICATE OF COMPLIANCE

We certify that all packaging and packaging components sold to _____
(Company Name)

or its subsidiaries in the State of Iowa comply with the requirements of this law, namely that the sum of the incidental concentration levels of lead, mercury, cadmium, and hexavalent chromium present in any package or package component shall not exceed the following:

600 Parts Per Million by weight
(Effective July 1, 1992)
250 Parts Per Million by weight
(Effective July 1, 1993)
100 Parts Per Million by weight
(Effective July 1, 1994)

We further certify that in cases where the regulated metals are present at levels less than the schedule stated above, the regulated metals were not intentionally added during the manufacturing process.

We further certify that no material used to replace the regulated metals are present in a quantity or manner that creates a hazard as great or greater than the hazard created by the regulated materials.

We will maintain adequate documentation of this certification for inspection upon request.

Company Name _____

Address _____

Certified by: _____

(Name)

(Signature)

(Title)

Date: _____

REDUCTION OF TOXICS IN PACKAGING LAW
CERTIFICATE OF COMPLIANCE—EXEMPTION STATUS

We certify that all packaging and packaging components sold to _____
(Company Name)
or its subsidiaries in the State of Iowa are in compliance with the law. However, certain packages or
packaging components produced by _____
(Company Name)

are exempt from this law for one or more of the following reasons:

Package or packaging components were made or delivered before the law was signed into effect:

(List package or packaging component) _____

Package or packaging component contains heavy metals in order to comply with state or federal health and
safety requirements or there is no feasible alternative (i.e., the regulated substance is essential to the
production, safe handling, or function of the package's contents):

(List package or packaging component) _____

Package or packaging component is made from postconsumer material:

(List package or packaging component) _____

Alcoholic beverage bottled prior to effective date:

(List package or packaging component) _____

We will maintain adequate documentation of this certification for inspection upon request.

Company Name _____

Address _____

Certified by: _____

(Name)

(Signature)

(Title)

Date: _____

If the manufacturer or distributor of the package or packaging component reformulates or creates a new
package or packaging component, the manufacturer or distributor shall provide an amended or new
Certificate of Compliance for the reformulated or new package or packaging component.

567—213.6(455D) Exemptions. The following packaging and packaging components are exempt from the requirements of Iowa Code section 455D.19:

1. Packaging or packaging components with a code indicating a date of manufacture prior to July 1, 1990, and packaging or packaging components used by the alcoholic beverage industry or the wine industry prior to July 1, 1992.

2. Packages or packaging components to which lead, cadmium, mercury, or hexavalent chromium have been added in the manufacturing, forming, printing, or distribution process in order to comply with health or safety requirements of federal law or for which there is no feasible alternative if the manufacturer of a packaging or packaging component petitions the department for an exemption from the provisions of this paragraph for a particular packaging or packaging component. The department may grant a two-year exemption, if warranted by the circumstances, and an exemption may, upon meeting either criterion of this paragraph, be renewed for two years. For purposes of this paragraph, a use for which there is no feasible alternative is one in which the regulated substance is essential to the protection, safe handling, or function of the package's contents.

3. Packages or packaging components that would not exceed the maximum contaminant levels established but for the addition of recycled materials.

4. Packages or packaging components that are reused, but exceed contaminant levels set forth in Iowa Code section 455D.19(4), paragraph "c," if all of the following criteria are met:

- The product being conveyed by the package, including any packaging component, is regulated under federal or state health or safety requirements.
- Transportation of the packaged product is regulated under federal or state transportation requirements.
- The disposal of the packages or packaging components is performed according to federal or state radioactive or hazardous waste disposal requirements.

The department may grant a two-year exemption if warranted by the circumstances and an exemption may, upon meeting the criteria of this paragraph, be renewed for additional two-year periods.

5. Packages or packaging components which qualify as reusable entities that exceed the contaminant levels set forth in Iowa Code section 455D.19(4), paragraph "c," if the manufacturers or distributors of such packages or packaging components petition the department for an exemption and receive approval from the department according to the following standards based upon a satisfactory demonstration that the environmental benefit of the controlled distribution and reuse is significantly greater than if the same package is manufactured in compliance with the contaminant levels set forth in Iowa Code section 455D.19(4), paragraph "c." The department may grant a two-year exemption, if warranted by the circumstances, and an exemption may, upon meeting the four criteria listed in paragraphs "1" to "4" of this rule, be renewed for additional two-year periods.

In order to receive an exemption, the application must ensure that reusable entities are used, transported, and disposed of in a manner consistent with the following criteria:

- A means of identifying in a permanent and visible manner those reusable entities containing regulated metals for which an exemption is sought.
- A method or regulatory and financial accountability so that a specified percentage of the reusable entities manufactured and distributed to another person are not discarded by the person after use, but are returned to the manufacturer or the manufacturer's designee.
- A system of inventory and record maintenance to account for the reusable entities placed in, and removed from, service.
- A means of transforming returned entities that are no longer reusable into recycled materials for manufacturing or into manufacturing wastes which are subject to existing federal or state laws or regulations governing manufacturing wastes to ensure that these wastes do not enter the commercial or municipal waste stream.

The application for an exemption must document the measures to be taken by the applicant as set out in Iowa Code section 455D.19(5), paragraph "e," subparagraphs (1) to (4).

567—213.7(455D) Inspection and penalties.

213.7(1) *Inspection.* The department may inspect, with the consent of the owner or agent, any property or building to determine compliance with the requirements of this chapter.

213.7(2) *Violation.*

a. Violations of this chapter are subject to the provisions of Iowa Code Supplement sections 455D.22 to 455D.25.

b. Each package or packaging component in violation constitutes the basis of a separate offense for purposes of the calculation of penalties pursuant to Iowa Code Supplement section 455D.25(2).

These rules are intended to implement Iowa Code Supplement section 455D.19.

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CHAPTER 214
HOUSEHOLD HAZARDOUS MATERIALS PROGRAM
Rescinded **ARC 3995C**, IAB 9/12/18, effective 10/17/18

CHAPTER 215
MERCURY-ADDED SWITCH RECOVERY FROM END-OF-LIFE VEHICLES
Rescinded **ARC 5897C**, IAB 9/8/21, effective 10/13/21

CHAPTER 216
REGENTS TIRE-DERIVED FUEL PROGRAM
Rescinded IAB 8/18/04, effective 9/22/04

CHAPTER 217
WASTE TIRE END-USER INCENTIVE PROGRAM
Rescinded IAB 8/18/04, effective 9/22/04

CHAPTER 218
WASTE TIRE STOCKPILE ABATEMENT PROGRAM
Rescinded **ARC 1956C**, IAB 4/15/15, effective 5/20/15

CHAPTER 219
BENEFICIAL USES OF WASTE TIRES
Rescinded IAB 5/15/02, effective 6/19/02