

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. Fires set for the purpose of bona fide training of public or industrial employees in firefighting methods, provided that written notification is postmarked or delivered to the director at least ten working days before such action commences. Notification shall be made in accordance with 40 CFR Section 61.145, “Standard for demolition and renovation,” of the asbestos National Emission Standards for Hazardous Air Pollutants, as amended through January 16, 1991. All asbestos-containing materials shall be removed prior to the training fire. Asphalt shingles may be burned in a training fire only if the notification to the director contains testing results indicating that none of the layers of the asphalt shingles contain asbestos. Each fire department may conduct no more than two training fires per calendar year 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. Rubber tires may 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 shingles 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.

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.

23.2(4) Unavailability of exemptions in certain areas. Notwithstanding 23.2(2) and 23.2(3) "b," "d," "f," and "i," no person shall allow, cause or permit the open burning of trees or tree trimmings, residential or landscape waste or agricultural structures in the cities of: Cedar Rapids, Marion, Hiawatha, Council Bluffs, Carter Lake, Des Moines, West Des Moines, Clive, Windsor Heights, Urbandale, and Pleasant Hill.

This rule is intended to implement Iowa Code section 455B.133.

567—23.3(455B) Specific contaminants.

23.3(1) General. The emission standards contained in this rule shall apply to each source operation unless a specific emission standard for the process involved is prescribed elsewhere in this chapter, in which case the specific 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 24.

a. Process weight rate. The emission of particulate matter from any process shall not exceed the amount determined from Table I, except as provided in 567—21.2(455B), 23.1(455B), 23.4(455B) and 567—Chapter 24. If the director determines that a process complying with the emission rates specified in Table I is causing or will cause air pollution in a specific area of the state, an emission standard of 0.1 grain per standard cubic foot of exhaust gas may be imposed.

TABLE I
ALLOWABLE RATE OF EMISSION BASED ON PROCESS WEIGHT RATE*

Process Weight Rate		Emission Rate		Process Weight Rate		Emission Rate	
Lb/Hr	Tons/Hr	Lb/Hr	Lb/Hr	Lb/Hr	Tons/Hr	Lb/Hr	Lb/Hr
100	0.05	0.55	16,000	8.00	16.5		
200	0.10	0.88	18,000	9.00	17.9		
400	0.20	1.40	20,000	10.00	19.2		
600	0.30	1.83	30,000	15.00	25.2		
800	0.40	2.22	40,000	20.00	30.5		
1,000	0.50	2.58	50,000	25.00	35.4		
1,500	0.75	3.38	60,000	30.00	40.0		
2,000	1.00	4.10	70,000	35.00	41.3		
2,500	1.25	4.76	80,000	40.00	42.5		
3,000	1.50	5.38	90,000	45.00	43.6		
3,500	1.75	5.96	100,000	50.00	44.6		
4,000	2.00	6.52	120,000	60.00	46.3		
5,000	2.50	7.58	140,000	70.00	47.8		
6,000	3.00	8.56	160,000	80.00	49.0		
7,000	3.50	9.49	200,000	100.00	51.2		
8,000	4.00	10.4	1,000,000	500.00	69.0		
9,000	4.50	11.2	2,000,000	1,000.00	77.6		
10,000	5.00	12.0	6,000,000	3,000.00	92.7		
12,000	6.00	13.6					

*Interpolation of the data in this table for process weight rates up to 60,000 lb/hr shall be accomplished by the use of the equation

$$E=4.10 P^{0.67},$$

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

$$E=55.0 P^{0.11}-40,$$

where E = rate of emission in lb/hr, and
P = process weight in tons/hr

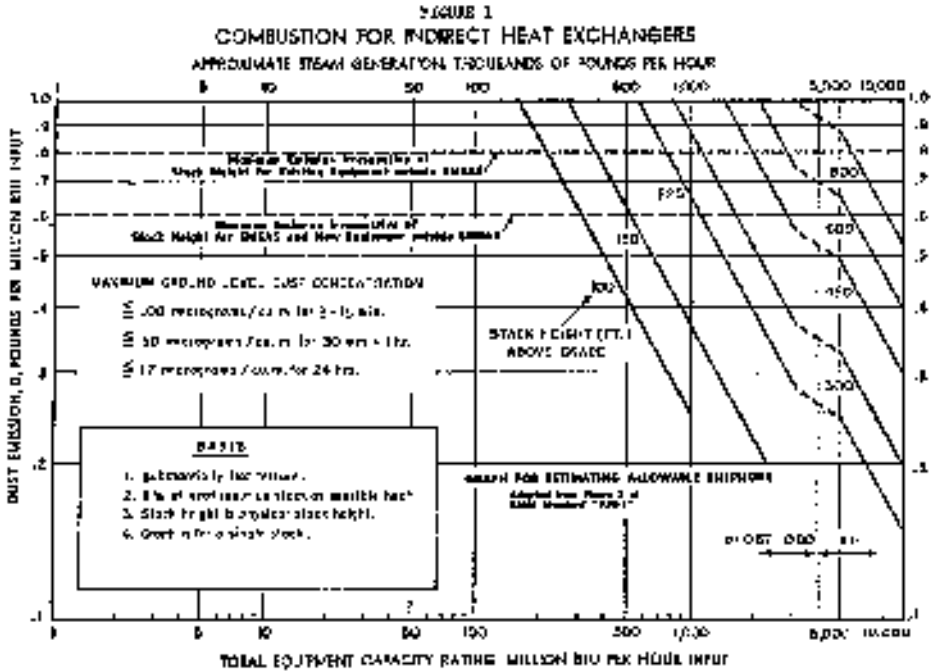
b. Combustion for indirect heating. Emissions of particulate matter from the combustion of fuel for indirect heating or for power generation shall be limited by the ASME Standard APS-1, Second Edition, November, 1968, "Recommended Guide for the Control of Dust Emission—Combustion for Indirect Heat Exchangers." For the purpose of this paragraph, the allowable emissions shall be calculated from equation (15) in that standard, with $C_{max} = 50$ micrograms per cubic meter. Allowable emissions from a single stack may be estimated from Figure 1. 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 paragraph 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; 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; except that the maximum allowable emission rate for the stack serving Unit #1 of Iowa Public Service at Port Neal shall be 0.50 pound of particulate matter per million Btu heat input and the maximum allowable emission rate for the stack serving boiler #6 of Muscatine Power and Water during periods when only boiler #6 is operating shall be 0.65 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. No person shall allow, cause or permit 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 public roads, without taking reasonable precautions to prevent particulate matter in quantities sufficient to create a nuisance, as defined in Iowa Code section 657.1, from becoming airborne. 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 which 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.

(2) Nonattainment areas. Subparagraph (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 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 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*,” adopted by the commission on May 19, 1981.

*Available from the department

(3) Reclassified areas. Reasonable precautions implemented pursuant to the nonattainment area provisions of subparagraph (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 24.

(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 which 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, (i.e., a unit which was in operation or for which components had been purchased, or which was under construction prior to September 23, 1970), 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, Lousia, 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, (i.e., a unit which was in operation or for which components had been purchased, or which was under construction prior to September 23, 1970), 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 subparagraph 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 (i.e., a unit which was not in operation or for which components had not been purchased, or which was not under construction prior to September 23, 1970) which 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.

(4) Subparagraphs (1) through (3) notwithstanding, a fossil fuel-fired steam generator to which 23.1(2)“a,” 23.1(2)“z” or 23.1(2)“ccc” applies shall comply with 23.1(2)“a,” 23.1(2)“z” or 23.1(2)“ccc,” respectively.

b. Sulfur dioxide from use of liquid fuels. 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. Notwithstanding this paragraph, a fossil fuel-fired steam generator to which 23.1(2)“a,” 23.1(2)“z” or 23.1(2)“ccc” applies shall comply with 23.1(2)“a,” 23.1(2)“z” or 23.1(2)“ccc.”

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.

This rule is intended to implement Iowa Code section 455B.133.

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 section 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 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 determined from Table I of these rules, except as provided in 567—Chapter 24.

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 Table II of these rules, except as provided in 567—Chapter 24.

TABLE II
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 which 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.* No person shall cause, allow or permit the operation of equipment at a permanent installation, for the handling or processing of grain, grain products and grain by-products such that the particulate matter discharged to the atmosphere exceeds 0.1 grain per 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, which consume more than ten 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. Phosphoric acid manufacture. No person shall allow, cause or permit the operation of equipment for the manufacture of phosphoric acid that was in existence on October 22, 1974, in a manner that produces more than 0.04 pound of fluoride per ton of phosphorous pentoxide or equivalent input.

b. Diammonium phosphate manufacture. No person shall allow, cause or permit the operation of equipment for the manufacture of diammonium phosphate that was in existence on October 22, 1974, in a manner that produces more than 0.15 pound of fluoride per ton of phosphorous pentoxide or equivalent input.

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 "a" through "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. No person shall cause, allow or permit the operation of an incinerator unless provided with appropriate control of emissions of particulate matter and visible air contaminants.

*Introductory paragraph, effective July 1, 1978

a. *Particulate matter.* No person shall cause, allow or permit the operation of an incinerator with a rated refuse burning capacity of 1000 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.

No person shall cause, allow or permit the operation of an incinerator with a rated refuse burning capacity of less than 1000 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.* No person shall 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 60 percent opacity may be emitted for a period or period 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.

This rule is intended to implement Iowa Code section 455B.133.

567—23.5(455B) Anaerobic lagoons.

23.5(1)* *Evaluation of application for permits for animal feeding operations using anaerobic lagoons.*

a. General.

(1) **Depth.** A liquid depth of 15-20 feet is preferred if soil and other site conditions allow. Anaerobic lagoons with liquid depth less than 8 feet are unapprovable.

(2) **Inlet.** One subsurface inlet at the center of an anaerobic 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 lagoon.

(3) **Shape.** Long, narrow lagoons shapes decrease waste 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) **Waste loading frequency.** The anaerobic lagoon loading frequency shall be at least once per week.

(6) **Design procedure.** Total anaerobic lagoon volume shall be determined by summation of: minimum design volume; minimum dilution volume (not less than 50 percent of minimum design volume); waste storage between periods of disposal; and precipitation storage between periods of disposal.

(7) **Waste storage period.** Annual or more frequent waste removal, preferably prior to May 1 or after September 15 of the given year, from the anaerobic lagoon shall be practiced to minimize odor production. Design waste storage volume between disposal periods shall not exceed the volume required to store 14 months’ waste production.

b. Minimum design volume and loading rate.

(1) For all animal species other than beef cattle, there shall be 1000 cubic feet minimum design volume for each 5 pounds of volatile solids produced per day if the volatile solids produced per day are 6000 pounds or fewer and for each 4 pounds if the volatile solids produced per day are more than 6000 pounds. For beef cattle, there shall be 1000 cubic feet minimum design volume for each 10 pounds of volatile solids produced per day.

(2) In Lyon, Sioux, Plymouth, Woodbury, Osceola, Dickinson, Emmett, 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 1000 cubic feet minimum design volume for each 4.5 pounds of volatile solids produced if the volatile solids produced per day are 6000 pounds or fewer. However, if a water analysis as required by 567—subparagraph 22.1(1)“e”(5), indicates that the sulfate level is below 500 milligrams per liter, then the rate is 5.0 pounds of volatile solids per 1000 cubic feet.

(3) In determining design volume under this paragraph, credit shall be given for removal of volatile solids from the waste 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 adjustment shall be at the rate of .50 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 (1)).

(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 waste 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 III.

TABLE III
SUMMARY OF CREDIT FOR MECHANICAL AERATION

% of Oxygen Supplied	Pounds Volatile Solids per 1000 cubic feet			
	Beef	Other than Beef		
	daily max in all counties	less than or equal to 6000 lb v.s. daily max	less than or equal to 6000 lb v.s. daily max in special counties of 23.5(3) "b"(2)	greater than 6000 lb v.s. daily max in all counties
0-50	10.0	5.0	4.5	4.0
50	12.5	6.3	5.6	5.0
60	13.3	6.6	6.1	5.5
70	14.0	7.0	6.5	6.0
80	14.8	7.4	6.9	6.5
90	15.5	7.8	7.4	7.0
100	16.3	8.1	7.8	7.5
110	17.0	8.5	8.3	8.0
120	17.8	8.9	8.7	8.5
130	18.5	9.3	9.1	9.0
140	19.3	9.6	9.6	9.5
150	20.0	10.0	10.0	10.0

(5) If a credit for solids removal is given in accordance with subparagraph (3), the credit for qualified aeration shall still be given. The applicant shall submit evidence of the biochemical oxygen demand (five day) (BOD_5) of the waste after the solids removal so that the aeration credit can be calculated based on an adjustment rate of .50 pound for each pound of solids removed.

(6) American Society of Agricultural Engineer's Standards, "Manure Production and Characteristics," D384, shall be used in determining the biochemical oxygen demand (five day) production and volatile solid production of various animal species.

- c. Rescinded, effective 12/19/79.
- d. *Sulfate*. It is recommended that, if the sulfate content of the water supply exceeds 250 mg/l, then an alternate supply of water for dilution should be sought.
- e. *Initial lagoon loading*. Prior to the discharge of any waste to the lagoon, the lagoon shall be filled to a minimum of 50 percent of its minimum design volume with fresh water and until the lagoon is filled to its minimum design volume, equal amounts of fresh water shall be added to the lagoon at any time wastes are discharged to the lagoon.

23.5(2) Criteria for approval of industrial anaerobic lagoons.

- a. Lagoons designed to treat 100,000 gpd or less.
 - (1) The sulfate content of the water supply shall not exceed 250 mg/l. However, this paragraph does not apply to an expansion of an industrial anaerobic lagoon facility which was constructed prior to February 22, 1979.
 - (2) The design loading rate for the total lagoon volume shall not be less than 10 pounds nor more than 20 pounds of biochemical oxygen demand (five day) per thousand cubic feet per day.
- b. Lagoons designed to treat more than 100,000 gpd.
 - (1) The sulfate content of the water supply shall not exceed 100 mg/l. However, this paragraph does not apply to an expansion of an industrial anaerobic lagoon facility which was constructed prior to February 22, 1979.
 - (2) The design loading rate for the total lagoon volume shall not be less than 10 pounds nor more than 20 pounds of biochemical oxygen demand (five day) per thousand cubic feet per day.

This rule is intended to implement Iowa Code section 455B.133.

567—23.6(455B) Alternative emission limits (the “bubble concept”). Emission limits for individual emission points included in 23.3(455B) (except 23.3(2) “d,” 23.3(2) “b”(3), and 23.3(3) “a”(3)) and 23.4(455B) (except 23.4(12) “b” and 23.4(6)) may be replaced by alternative emission limits. The alternative emission limits must be consistent with 567—22.7(455B) and 567—subrule 25.1(12). 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.

Rules 23.3(455B) to 23.6(455B) are intended to implement Iowa Code section 455B.133.

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