

CHAPTER 456
GEOLOGICAL SURVEY

Chapter transferred from chapter 460A in Code 2003 pursuant to Code editor directive;
2002 Acts, 2nd Ex, ch 1003, §260, 262

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456.1 Iowa geological survey created.

An Iowa geological survey of the state is created within the state university of Iowa, under the jurisdiction and authority of the state board of regents.

[C97, §2497; C24, 27, 31, 35, 39, §4549; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.1] [86 Acts, ch 1245, §1881](#)

C93, §460A.1

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.1

[2011 Acts, ch 25, §143; 2018 Acts, ch 1023, §12; 2019 Acts, ch 131, §34](#)

Referred to in [§418A.1](#)

456.2 State geologist — qualifications.

The state board of regents shall appoint the state geologist. The state geologist must, at a minimum, have a master’s degree in geology from an accredited college or university and must have at least five years of geological experience. The annual salary of the state geologist shall be determined by the state board of regents.

[R60, §180, 181; C97, §2498; C24, 27, 31, 35, 39, §4550; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.2]

[86 Acts, ch 1245, §1882](#)

C93, §460A.2

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.2

[2018 Acts, ch 1023, §13](#)

456.3 Survey.

The state geologist shall be director of the survey and shall make a complete survey of the natural resources of the state in all their economic and scientific aspects, including the determination of the order, arrangement, dip, and comparative magnitude of the various formations; the discovery and examination of all useful deposits, including their richness in mineral contents and their fossils; and the investigation of the position, formation, and arrangement of the different ores, coals, clays, building stones, glass sands, marls, peats, mineral oils, natural gases, mineral and artesian waters, and such other minerals or other materials as may be useful, with particular regard to the value thereof for commercial purposes and their accessibility.

[R60, §182; C97, §2499; C24, 27, 31, 35, 39, §4551; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.3]

C93, §460A.3

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.3

456.4 Investigations — collection.

The state geologist shall investigate the characters of the various soils and their capacities for agricultural purposes, the streams, and other scientific and natural resource matters that may be of practical importance and interest. A complete cabinet collection shall be made to illustrate the natural products of the state, and the state geologist may also furnish suites of materials, rocks, and fossils for colleges and public museums within the state, if it can be done without impairing the general state collection.

[R60, §182, 185, 187; C97, §2499; C24, 27, 31, 35, 39, §4552; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.4]

C93, §460A.4

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.4

[2003 Acts, ch 145, §286; 2018 Acts, ch 1023, §14](#)

456.5 Authority to enter lands.

For the purpose of carrying on investigations, the state geologist and the state geologist's assistants and employees shall have authority to enter and cross all lands within the state; provided that in so doing no damage is done to private property.

[C24, 27, 31, 35, 39, §4553; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.5]

C93, §460A.5

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.5

[2020 Acts, ch 1063, §245](#)

456.5A Long-range budget plan.

1. As used in [this section](#), “*planning period*” means a period comprised of five consecutive fiscal years each beginning July 1 and ending June 30.

2. Not later than January 10, 2022, and not later than January 10 of each subsequent five-year period, the state geologist shall publish a new long-range budget plan for the next planning period. The long-range budget plan shall describe how moneys appropriated, expected to be appropriated, or otherwise available or expected to be available to the Iowa geological survey for each fiscal year of that planning period are to be expended in a manner that best allows the Iowa geological survey to exercise its powers and carry out its duties or functions. The long-range budget plan shall include any performance goals and measures required by law or established by the state geologist. The state geologist shall annually evaluate the Iowa geological survey's progress in attaining those performance goals and shall revise the long-term budget plan as the state geologist determines necessary or desirable.

[2021 Acts, ch 143, §40; 2022 Acts, ch 1032, §107, 111; 2022 Acts, ch 1149, §17](#)

Referred to in [§456.7](#)

456.6 Detailed reports.

The state geologist and the state geologist's assistants shall make detailed maps and reports of counties and districts as fast as the work is completed, which reports shall embrace such geological, mineralogical, topographical, and scientific details as are necessary to make complete records thereof, which may include the necessary illustrations, maps, charts, and diagrams.

[R60, §184; C97, §2500; S13, §2500; C24, 27, 31, 35, 39, §4554; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.6]

C93, §460A.6

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.6

456.7 Annual report.

On or before January 10 of each year, the state geologist shall submit to the governor and the general assembly a full report of the work of the Iowa geological survey performed during the preceding year. The report shall include a summary of its current long-range budget plan

as provided in [section 456.5A](#). The report may be accompanied by such other reports and documents as the state geologist determines is necessary or desirable for publication.

[R60, §184; C97, §2498, 2500; S13, §2500; C24, 27, 31, 35, 39, §4555; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.7]

C93, §460A.7

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.7

[2018 Acts, ch 1023, §15; 2021 Acts, ch 143, §41; 2022 Acts, ch 1032, §108, 111](#)

456.8 Cooperation.

The state geologist shall cooperate with the United States geological survey, with other federal and state organizations, and with adjoining state surveys in the making of topographic maps and the study of geologic problems of the state when, in the opinion of the state geologist, such cooperation will result in profit to the state.

[S13, §2500; C24, 27, 31, 35, 39, §4556; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.8]

C93, §460A.8

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.8

456.9 Publication of reports.

The state geologist may direct the preparation and publication of special reports and bulletins of educational and scientific value or containing information of immediate use to the people.

[C97, §2501; S13, §2501; C24, 27, 31, 35, 39, §4557; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.9]

C93, §460A.9

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.9

Reports, [§7A.27](#)

456.10 Distribution of reports.

All publications of the Iowa geological survey shall be made available electronically via an internet site maintained for that purpose.

[C97, §2501; S13, §2501; C24, 27, 31, 35, 39, §4558; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, §305.10]

C93, §460A.10

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.10

[2018 Acts, ch 1023, §16; 2019 Acts, ch 131, §35](#)

456.11 Maps — surveys.

The operator of any underground mine shall comply with the following provisions relative to maps and surveys:

1. *Scale.* Each mine map shall be drawn to a scale of not more than two hundred feet to the inch.

2. *General specifications.* Each map shall show the name of the state, county, and township in which the mine is located, the designation of the mine, the name of the company or operator, the certificate of the mining engineer or surveyor as to the accuracy and date of the survey, the north point, and the scale to which the map is drawn.

3. *Boundaries and surface lines.* Every map shall correctly show the surface boundary lines of the mineral rights pertaining to each mine and all section or quarter section lines or corners within the same, the lines of town lots and streets, the tracks and sidetracks of all railroads, the location of all wagon roads, rivers, streams, and ponds, and reservations made of the mineral.

4. *Underground conditions.* For the underground workings, the map shall show all shafts, slopes, tunnels, or other openings to the surface or to the workings of a contiguous

mine; all excavations, entries, rooms, and crosscuts; the location of the escape ways, and of the fan or furnace or other means of ventilation and the direction of air currents, and the location of permanent pumps, hauling engines, engine planes, abandoned works, fire walls, and standing water.

5. *Separate maps.* A separate and similar map drawn to the same scale in all cases shall be made of each layer of minerals mined in any mine in this state. A separate map shall also be made of the surface whenever the surface buildings, lines, or objects are so numerous as to obscure the details of the mine workings if drawn upon the same sheet with them, and in such case the surface map shall be drawn upon transparent cloth or paper so that it can be laid upon the map of the underground workings and thus truly indicate the local relation of lines and objects on the surface to the excavations of the mine and any other principal workings of the mine.

6. *Rise and dip of minerals.* Each map of underground workings shall also show by profile drawing and measurement, the last one hundred fifty feet approaching the boundary lines, showing the rise and dip of the minerals.

7. *Copies.* The original or true copies of the maps shall be kept at the office of the mine, and true copies thereof shall also be furnished the state geologist within thirty days after the completion of the same.

8. *Extensions.* An accurate extension of the last preceding survey of every mine in active operation shall be made once in every twelve months prior to July 1 of every year and the result of such survey, with the date thereof, shall be promptly and accurately entered upon the original map, and a true, correct, and accurate copy of the extended map shall be forwarded to the state geologist so as to show all changes in plan of new work in the mine, and all extensions of the old workings to the most advanced face or boundary of the workings which have been made since the last preceding survey, and the parts of the mine abandoned or worked out after the last preceding survey shall be clearly indicated and shown by colorings, which copy must be delivered to the state geologist within thirty days after the last survey is made.

9. *Abandoned mine.* When any underground mine is worked out or is about to be abandoned or indefinitely closed, the operator of the same shall make or cause to be made a completed and extended map of the mine and the result of the same shall be duly extended on all maps of the mine and copies thereof so as to show all excavations and the most advanced workings of the mine, and their exact relation to the boundary or section lines on the surface, and deliver to the state geologist a copy of the completed map.

10. *Copies furnished.* The state geologist shall provide the division of soil conservation and water quality created within the department of agriculture and land stewardship pursuant to [section 159.5](#) a copy of each map and map extension received by the geologist under [this section](#).

[C97, §2485; S13, §2485, 2496-m; C24, 27, 31, 35, 39, §1245, 1351 – 1355, 1357, 1358; C46, 50, 54, 58, 62, 66, 71, 73, §82.28, 83.14 – 83.18, 83.20, 83.21; C75, 77, 79, 81, §305.12]

C93, §460A.12

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.11

[2015 Acts, ch 103, §44](#)

Referred to in [§456.13](#)

456.12 Failure to furnish map.

When the operator of any mine neglects or refuses for a period of ninety days to furnish to the state geologist the map or plan, or a copy thereof, of such mine or any extension thereof, as provided in [this chapter](#), the state geologist shall cause to be made an accurate map or plan of such mine or extension as the case may be, at the expense of the operator. The cost shall be paid by the state and recovered from such operator. It shall be the duty of the county

attorney of the county in which such mine is located, at the request of the state geologist, to bring action in the name of the state for such recovery.

[S13, §2485-a, 2496-m; C24, 27, 31, 35, 39, §1246, 1359; C46, 50, 54, 58, 62, 66, 71, 73, §82.29, 83.22; C75, 77, 79, 81, §305.13]

C93, §460A.13

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.12

Referred to in [§331.756\(46\)](#)

456.13 Maps property of state — custody — copies.

The maps so delivered to the state geologist shall be the property of the state and shall remain in the custody of the state geologist. They shall be kept at the office of the Iowa geological survey and be open to examination by all persons interested in the maps; but such examination shall only be made in the presence of the state geologist or a designee, and the state geologist shall not permit any copies of the maps to be made without the written consent of the operator or the owner of the property, except as provided in [section 456.11](#) or if the mine has been abandoned for at least five years.

[C97, §2485; S13, §2485, 2496-m; C24, 27, 31, 35, 39, §1247, 1356; C46, 50, 54, 58, 62, 66, 71, 73, §82.30, 83.19; C75, 77, 79, 81, §305.14]

C93, §460A.14

[2002 Acts, 2nd Ex, ch 1003, §260, 262](#)

C2003, §456.13

[2019 Acts, ch 131, §36](#)

456.14 Water resource management.

1. The state geologist shall maintain historical data, collect existing data, and compile new data regarding water resources, including surface water sources and groundwater sources, and geological formations that impact upon those water resources. Such data shall be managed in a manner that allows it to be made available for use by the department of natural resources and the public.

2. The state geologist shall measure, assess, and evaluate groundwater sources and subsurface geological formations in a manner that assists the department of natural resources in optimizing allocations and uses of groundwater sources in this state, including as provided in [chapter 455B, subchapter III, part 4](#). The state geologist may use data described in [subsection 1](#) to measure, assess, and evaluate all of the following:

- a. The sustainability and existing or potential vulnerabilities of groundwater sources.
- b. The risk, prediction, or indication of drought, the impacts of drought, and the presence, intensity, or duration of drought conditions.
- c. Subsurface geologic hazards to groundwater resources.
- d. The recharge of groundwater sources, including recharge rates.
- e. The presence of reserves of groundwater sources.
- f. The potential of groundwater sources present in subsurface geologic formations.

3. The state geologist shall develop and use management tools, computer programming, or modeling as necessary or convenient to administer [this section](#).

4. The state geologist shall prepare, use, and make available maps or other methods of presentation that provide for the geospatial visualization of data described in [subsection 1](#) as necessary or convenient to administer [this section](#).

5. Upon request by the department of natural resources, the state geologist shall assist the department in regulating water quantity from water resources as provided in [section 455B.262B](#).

[2018 Acts, ch 1167, §27; 2021 Acts, ch 76, §150](#)

Referred to in [§455B.262B](#)

456.15 Levees.

The Iowa geological survey shall assist the office of levee safety as provided in [chapter 418A](#).

[2023 Acts, ch 163, §9, 10](#)