

NOTICE OF RULEMAKING HEARING
NEBRASKA OIL AND GAS CONSERVATION COMMISSION

NOTICE is hereby given that the Nebraska Oil and Gas Conservation Commission will hold a rulemaking hearing on January 25, 2022, commencing at 10:00 a.m. (MT) at the Office of the Nebraska Oil and Gas Conservation Commission, 1625 Dorwart Drive, Sidney, Nebraska 69162.

This hearing will be held on amendments to Title 267, Nebraska Administrative Code, Chapter 1, Chapter 3, Chapter 6, and the addition of a new Chapter 7.

The REASON for the amendments and addition is to develop regulations as per LB 650, the Nebraska Geologic Storage of Carbon Dioxide Act (2021). Sections 57-1603 through 1624

The FISCAL IMPACT statement for this hearing draft may be obtained and inspected at the Office of the Nebraska Oil and Gas Conservation Commission.

This hearing is being conducted under the provisions of Neb. Rev. Stat. § 84-907 (Cum. Supp. 2016), which provides that DRAFT COPIES OF THE PROPOSED RULES ARE AVAILABLE for public examination on the Nebraska Oil and Gas Conservation Commission website, <http://www.nogcc.ne.gov/>, and at the Office of the Secretary of State website, <https://www.nebraska.gov/nesos/rules-and-regs/regtrack/index.cgi>.

All INTERESTED PERSONS are invited to ATTEND and TESTIFY at the location of the hearing. Interested persons may also submit written comments to the Nebraska Oil and Gas Conservation Commission prior to the hearing and those comments will be made a part of the record at the time of the hearing.

Dated at Sidney, Nebraska, this 14th day of December 2021.

Nebraska Oil and Gas Conservation Commission
Stan Belieu, Director

EXPLANATORY STATEMENT FOR PROPOSED REGULATION(S)

TITLE: 267

CHAPTERS: 1, 3, 6, and an addition of new chapter 7

SUBJECT: Rules for the geologic storage of Carbon Dioxide

PREPARED BY: Stan Belieu

DATE: 12/14/2021

The Nebraska Oil and Gas Conservation Commission (NOGCC) is amending and drafting these regulations as provided by law and is submitting this Explanatory Statement to accompany the regulations and describe their purposes and the changes made during the rulemaking process.

As required by the Administrative Procedure Act, information on the proposed regulations were provided on 12/14/21 to: Governor's Office, Executive Board of the Legislative Council, Policy Research Office, Attorney General, and Secretary of State.

Reasons for Rulemaking Process:

The proposed changes will: Provide rules for the geologic storage of Carbon Dioxide. Ethanol and power generation industries wishing to store carbon dioxide would be subject to this rule. This rule could impact surface/pore space owners based on the underlying geology.

Necessity of the Proposed Regulation: Comply with legislative directive

Identify the applicable specific legislative bill (session year) or authorizing statute: LB 650, 2021 57-1602-1624

Statement Indicating Proposed Regulation is Consistent w/Legislative Intent:

Public Hearing: Public hearings are scheduled to be held at the Commission office, 1625 Dorwart Drive, Sidney on January 25th, 2022 and February 22nd, 2022.

Changes in Text between Public Hearing Notice and Adoption and the reasons for changes:

Efforts to address issues of groups or individuals who have commented: Are the comments incorporated into the final regulations? If yes, which issues? If not, why not? (See attached example of summary chart to address this requirement)

A stake holder committee was formed, two draft rules meetings have been conducted. Represented on the committee were; co-regulators, NGO's, and academia, representatives from these groups have been instrumental in developing draft regulations

Fiscal Impact: Please see the attached fiscal impact statement which includes a description and

Revised August 2016

quantification of fiscal impact of the proposed regulation.

FTE Impact: NOGCC will add one FTE

Unfunded Mandate?: No

Issues of Unique Interest, If Applicable:

Was Negotiated Rulemaking Process Used?:

DRAFT/FINAL FISCAL IMPACT STATEMENT

Agency: Nebraska Oil and Gas Conservation Commission	
Title: 267	Prepared by: Stan Belieu
Chapter: 1, 3, 6 and new chapter 7	Date prepared: 12/14/2021
Subject: Geologic Storage of Carbon Dioxide	Telephone: 308 254 6919

Type of Fiscal Impact:

	State Agency	Political Sub.	Regulated Public
No Fiscal Impact	()	()	()
Increased Costs	(x)	()	(x)
Decreased Costs	()	()	()
Increased Revenue	(x)	()	(x)
Decreased Revenue	()	()	()
Indeterminable	()	()	()

Provide an Estimated Cost & a Description of Impact:

State Agency: NOGCC has received \$200,000 from the general fund to begin implementation of this program, after two years the program hopes to be self-funded

Political
Subdivision:

Regulated

Public: An applicant wishing a permit to store Carbon Dioxide will have highly variable costs. The cost of obtaining a permit will be in multiple millions of dollars

If indeterminable, explain why:

State Agency:.

Regulated Public: .

BEFORE THE NEBRASKA OIL AND GAS CONSERVATION COMMISSION

IN THE MATTER OF THE APPLICATION OF)
THE NEBRASKA OIL AND GAS CONSERVATION)
COMMISSION, ON ITS OWN MOTION FOR AN) CASE NO. 21-08
AN ORDER REVISING TITLE 267, CHAPTERS)
1, 3, 6 AND THE ADDITION OF CHAPTER 7)
FOR THE NEBRASKA STORAGE OF CARBON)
DIOXIDE ACT.)

APPLICATION

Comes now the Nebraska Oil and Gas Conservation Commission, Petitioner, and requests that Title 267, Chapters 1, 3, 6, be updated and a Chapter 7 be added to develop regulations as per LB 650, the Nebraska Geologic Storage of Carbon Dioxide Act (2021). Sections 57-1603 through 1624.

Now, therefore, the Rules and Regulations of the Nebraska Oil and Gas Conservation Commission should be revised as follows:

Add 025 to Title 267, Chapter 1

025 GS Act shall mean the Nebraska Geologic Storage of Carbon Dioxide Act, Nebraska Revised Statutes Sections 57-1601 to 57-1624.

CHAPTER 3 Drilling, Development, Producing and Abandonment

013-Location of Wells

033.05 The forgoing spacing restrictions shall not apply to approved unit operations, or secondary recovery projects or stratigraphy test holes drilled for geologic storage, or to any field where the Commission, after notice and hearing, ordered a different spacing pattern in special field rules.

~~Chapter~~ **CHAPTER 6 Rules of Practice and Procedure before the Oil and Gas Conservation Commission of the State of Nebraska**

004.08 Cost of Hearing

A petition filed with the Commission for a public hearing shall be accompanied by a filing fee of ~~two hundred fifty dollars (\$250)~~ twelve hundred dollars (\$1200).

006.01A Time of Notice; Emergency Orders

Before any rule, regulation, or order, or amendment thereof, shall be made by the Commission, there shall be held a public hearing upon at least ~~fifteen (15)~~ thirty (30) days notice at such time and place as may be prescribed by the Commission and any interested person shall be entitled to be heard, except that when an emergency

requiring immediate action is found by the Commission to exist, the Commission may issue an emergency order, without notice of hearing, which shall be effective upon promulgation but shall remain effective for no more than ~~twenty (20)~~ **thirty (30)** days.

006.04A2

006.04A3 there is an application for the entry of a unitization order under Section 57-910 to 57-910.12 R.S. Nebraska, notice of the hearing to be held on such application shall be served on the interested parties as hereinafter defined by certified mail at least ~~fifteen (15)~~ **thirty (30) days** prior to the date of the hearing.

For the purpose of pooling applications filed under Section 57-909, the term, "interested parties," shall mean those persons who own any oil or gas leasehold, mineral or royalty interest in the tracts to be pooled.

For the purpose of unitization applications filed under Section 57-910 to 57-910.12, the term, "interested parties," shall mean those persons whose names are required to be set forth in the application.

For the purpose of Carbon Dioxide Storage, the term "interested parties" shall mean those persons that own the Reservoir estate.

006.04G

In all cases where there is an application for Geologic Storage, in addition to notice of hearing as required by the Act, the applicant shall serve notice of hearing upon all interested parties. The term "interested parties" shall mean those persons who own any reservoir estate owner, leasehold, mineral, royalty interest and surface owner of land overlying the storage reservoir and within one-half mile of the storage reservoir boundaries. Applicant shall file a certificate showing the names and addresses of the interested parties, as above defined, upon whom notice has been or is being served.

006.04H

In all cases where there is an application for Geologic Storage, the notice of hearing shall include a statement that amalgamation of all storage reservoir estates is required to operate the storage facility, that the commission may require that the storage reservoir estates owned by nonconsenting owners be included in the storage facility and subject to geologic storage, and that the amalgamation of storage reservoir estates will be considered at the hearing.

Revise 006.04B, 006.04C, and 006.05 to add "or the GS Act" after "the Act".

Revise Title 267, Chapter 6 001.01 to add at the end "and to all proceedings relating to geologic storage of carbon dioxide and to the administration of the GS Act."

Laws 2021, LB650, § 8. Effective Date: August 28, 2021

TITLE 267 NEBRASKA OIL AND GAS CONSERVATION COMMISSION

CHAPTER 7- GEOLOGIC STORAGE OF CARBON DIOXIDE

DEFINITIONS. The terms used throughout this chapter have the same meaning as in title 267 chapter 1 and Nebraska Revised Statutes 57-1601, as included here with additional terms:

1. "Abandoned well" means a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.
2. "Activity" means any activity related to the geologic storage of carbon dioxide subject to regulation under this chapter and Neb Rev Stat 57-1601 et seq.
3. "Applicable underground injection control program" for each class of storage facility injection well means the program, or most recent amendment thereof, for that class of well in Nebraska as provided by federal law;
4. "Aquifer" means a geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well, spring, or other point of discharge.
5. "Area of review" means the region surrounding the geologic storage project where underground sources of drinking water may be endangered by the injection activity.
6. "Bond rating" means a rating assigned to any long-term senior secured indebtedness issued by or on behalf of the storage operator, including any indebtedness issued by any governmental authority with respect to which the storage operator is obligor.
7. "Carbon dioxide plume" means the extent underground, in three dimensions, of an injected carbon dioxide stream.
8. "Carbon dioxide stream" means carbon dioxide from anthropogenic sources, plus incidental associated substances derived from the source materials and the production or capture process, and any substances added to the stream to enable or improve the injection process if such substances will not compromise the safety of geologic storage and will not compromise those properties of a storage reservoir which allow the reservoir to effectively enclose and contain the stored carbon dioxide stream; This does not apply to any carbon dioxide stream that meets the definition of a hazardous waste.
9. "Casing" means a pipe or tubing of varying diameter and weight, which is installed into a well to maintain the structural integrity of that well.
10. "Closure period" means that period from permanent cessation of carbon dioxide injection until the commission issues a certificate of project completion.
Commission means the Nebraska Oil and Gas Conservation Commission;
11. "Confining zone" means a geologic formation, group of formations, or part of a formation stratigraphically overlying the injection zone that acts as a barrier to fluid movement. For injection wells operating under an injection depth waiver, confining zone means a geologic formation, group of formations, or part of a formation stratigraphically overlying and underlying the injection zone.
12. "Contaminant" means any physical, chemical, biological, or radiological substance or matter in water.
13. "Corrective action" means the use of commission-approved methods to ensure that wells within the area of review do not serve as conduits for the movement of fluids into underground sources of drinking water.
14. "Director" shall mean Director or authorized agent of the Oil and Gas Conservation Commission of the State of Nebraska.

15. "Exempted aquifer" means an "aquifer" or its portion that meets the criteria in the definition of "underground sources of drinking water" but which has been exempted by the Director.
16. "Facility area" means the areal extent of the storage reservoir.
17. "Fault" means a surface or zone of rock fracture along which there has been displacement.
18. "Flow lines" means pipelines transporting carbon dioxide from the carbon dioxide injection facilities to the wellhead.
19. "Fluid" means any material or substance which flows or moves, whether in a semisolid, liquid, sludge, gas, or any other form or state.
20. "Formation" means a body of rock characterized by a degree of lithologic homogeneity which is prevailing, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.
21. "Formation fluid" means fluid present in a formation under natural conditions as opposed to introduced fluids.
22. "Formation fracture pressure" means the pressure, measured in pounds per square inch, which, if applied to a subsurface formation, will propagate fractures in that formation.
23. "Geologic sequestration or storage" means the emplacement of a gaseous, liquid, or supercritical carbon dioxide stream in a geologic storage reservoir. This term does not apply to carbon dioxide capture or transport.
24. "Geologic storage project" means an injection well or wells used to emplace a carbon dioxide stream beneath the lowermost formation containing underground sources of drinking water; or, wells used for geologic storage that have been granted a waiver of the injection depth requirements; or, wells used for geologic storage that have received an expansion to the areal extent of an existing enhanced oil or gas recovery aquifer exemption. It includes the subsurface three-dimensional extent of the carbon dioxide plume, as well as the associated pressure front.
- Geologic storage means the permanent or short-term underground storage of carbon dioxide streams in a storage reservoir;
25. "Ground water" means water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated.
26. "Injection well" means a nonexperimental well used to inject carbon dioxide into or withdraw carbon dioxide from a reservoir.
27. "Injection zone" means a geologic formation, group of formations, or part of a formation that is of sufficient areal extent, thickness, porosity, and permeability to receive carbon dioxide through a well or wells associated with a geologic storage project.
28. "Mechanical integrity" means the absence of significant leakage within an injection well's tubing, casing, or packer (internal mechanical integrity), or outside of the casing (external mechanical integrity).
29. "Minerals" means coal, oil, and natural gas.
30. "Model" means a representation or simulation of a phenomenon or process that is difficult to observe directly or that occurs over long timeframes. Models that support geologic storage can predict the flow of carbon dioxide within the subsurface, accounting for the properties

and fluid content of the subsurface formations and the effects of injection parameters.

31. "Operational period" means the period during which injection occurs.

32. "Packer" means a device lowered into a well, which can be expanded or compressed to produce a fluid-tight seal.

33. "Permit" means a permit issued by the commission under the Nebraska Geologic Storage of Carbon Dioxide Act allowing a person to operate a storage facility;

34. "Person" means an individual, association, partnership, corporation, municipality, state, federal, or tribal agency, or an agency or employee thereof.

35. "Plug or plugging" means the act or process of sealing the flow of fluid into or out of a formation through a borehole or "well" penetrating that formation.

36. "Postclosure period" means that period after the commission has issued a certificate of project completion.

37. "Postinjection site care" means appropriate monitoring and other actions, including corrective action, needed following cessation of injection to ensure that underground sources of drinking water are not endangered. Postinjection site care may occur in the closure or postclosure periods.

38. "Pressure" means the total load or force per unit area acting on a surface.

39. "Pressure front" means the zone of elevated pressure and displaced fluids created by the injection of carbon dioxide into the subsurface. The pressure front of a carbon dioxide plume refers to a zone where there is a pressure differential sufficient to cause the movement of injected fluids or formation fluids into underground sources of drinking water.

40. "Project completion" means the point in time, as determined by the commission at which the certificate of project completion is issued and the storage operator is released from all regulatory requirements associated with the storage facility.

41. "Reservoir" means a subsurface stratum, formation, cavity, or void, whether natural or artificially created, suitable for or capable of receiving through a well and geologically storing a carbon dioxide stream;

42. "Reservoir estate" means ownership of any portion of a storage reservoir;

43. "Schedule of compliance" means a schedule of remedial measures included in a "permit," including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the "appropriate Act and regulations."

44. "Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

45. "Site closure" means the point/time, as determined by the Director following the requirements, under the applicable underground injection program at which the owner or operator of a geologic storage site is released from post-injection site care

46. "Stratum" (strata plural) means a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.

47. "Storage facility" means the storage reservoir, underground equipment, and surface facilities and equipment used or proposed to be used in a geologic storage operation. The term includes the injection well and equipment used to connect the surface facility and equipment to the storage reservoir and underground equipment. The term does not include pipelines used to transport carbon dioxide to the storage facility;

48. "Storage operator" means a person holding or applying for a permit under the act; and

49. "Storage reservoir" means the reservoir proposed, authorized, or used for storing one or more carbon dioxide streams pursuant to a permit. The term does not include reservoirs used for purposes other than storage of carbon dioxide streams.

50. "Subsurface observation well" means a well used to observe subsurface phenomena, including the presence of carbon dioxide, pressure fluctuations, fluid levels and flow, temperature, and in situ water chemistry.

51. "Transmissive fault or fracture" means a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

52. "Trapping" means the physical and geochemical processes by which injected carbon dioxide is sequestered in the subsurface. Physical trapping occurs when buoyant carbon dioxide rises in the formation until it reaches impermeable strata that inhibits further upward and lateral migration or is immobilized in pore spaces due to capillary forces. Geochemical trapping occurs when chemical reactions between the injected carbon dioxide and natural occurring minerals in the formation lead to the precipitation of solid carbonate minerals or dissolution in formation fluids.

53. "Underground source of drinking water" means an aquifer or any portion of an aquifer that supplies drinking water for human consumption, or in which the ground water contains fewer than ten thousand milligrams per liter total dissolved solids and is not an exempted aquifer as determined by the Director.

54. "Well" means a bored, drilled or driven shaft, or a dug hole, whose depth is greater than the largest surface dimension; or an improved sinkhole; or a subsurface fluid distribution system.

ALL OTHER WORDS used herein shall be given their usual customary and accepted meaning; and all words of a technical nature, or peculiar to the oil and gas industry, shall be given that meaning which is generally accepted in said oil and gas industry.

001- STORAGE FACILITY PERMIT

An application for a permit must include the following:

1. A site map showing the boundaries of the storage reservoir and the location of all proposed wells, proposed boreholes, and surface facilities within the carbon dioxide storage facility area;

2. A technical geologic and hydrogeologic evaluation of the proposed storage facility, including:

a. The immediate confining layer containment characteristics and all subsurface zones to be used for monitoring.

b. The evaluation must include any available geophysical data and assessments of any regional tectonic activity, local seismicity and regional or local fault zones, and a comprehensive description of local and regional structural and stratigraphic features.

c. The evaluation must describe the storage reservoir's mechanisms of geologic confinement, including rock properties, regional pressure gradients, structural features, and sorption characteristics with regard to the ability of that confinement to prevent migration of carbon dioxide beyond the proposed storage reservoir.

d. The evaluation must also identify any productive existing or potential commercially valuable mineral zones occurring within the facility area and any underground sources of drinking water in the facility area and within 1/2 mile of its outside boundary. The evaluation must include exhibits and plan view maps showing the following:

Commented [VVR1]: See LB650, section 10(14)

- i) All wells, including water, oil, and natural gas exploration and development wells, and other manmade subsurface structures and activities, within the facility area and within ½ mile of its outside boundary;
- ii) All manmade surface structures that are intended for temporary or permanent human occupancy within the facility area and within ½ mile of its outside boundary;
- iii) Any regional or local faulting;
- iv) An isopach map of the storage reservoirs;
- v) An isopach map of the primary and any secondary containment barrier for the storage reservoir;
- vi) A structure map of the top and base of the storage reservoirs;
- vii) Identification of all structural spill points or stratigraphic discontinuities controlling the isolation of stored carbon dioxide and associated fluids within the storage reservoir;
- viii) Evaluation of the pressure front and the potential impact on underground sources of drinking water, if any;
- ix) Structural and stratigraphic cross sections and any renderings that describe the geologic conditions at the storage reservoir;
- x) The location, orientation, and properties of known or suspected faults and fractures that may transect the confining zone in the area of review, and a determination that they would not interfere with containment;
- xi) Data on the depth, areal extent, thickness, mineralogy, porosity, permeability, and capillary pressure of the injection and confining zone, including facies changes based on field data, which may include geologic cores, outcrop data, seismic surveys, well logs, and names and lithologic descriptions;
- xii) Geomechanical information on fractures, stress, ductility, rock strength, and in situ fluid pressures within the confining zone. The confining zone must be free of transmissive faults or fractures and of sufficient areal extent and integrity to contain the injected carbon dioxide stream;
- xiii) Information on the seismic history, including the presence and depth of seismic sources and a determination that the seismicity would not interfere with containment;
- xiv) Geologic and topographic maps and cross sections illustrating regional geology, hydrogeology, and the geologic structure of the facility area;
- xv) Identify and characterize additional strata overlying the storage reservoir that will prevent vertical fluid movement, are free of transmissive faults or fractures, allow for pressure dissipation, and provide additional opportunities for monitoring, mitigation, and remediation.

(3) A review of the data of public record, conducted by a geologist or engineer, for all wells within the facility area, which penetrate the storage reservoir or primary or secondary seals overlying the reservoir, and all wells within the facility area and within 1/2 mile, or any other distance as deemed necessary by the commission, of the facility area boundary. The review must include the following:

(a) A determination that all abandoned wells have been plugged and all operating wells have been constructed in a manner that prevents the carbon dioxide or associated fluids from escaping from the storage reservoir;

(b) A description of each well's type, construction, date drilled, location, depth, record of plugging, and completion;

(c) Maps and stratigraphic and structural cross sections indicating the vertical and lateral limits of all underground sources of drinking water, water wells, and springs within the area of review; their positions relative to the injection zone; and the measured or inferred direction of water movement;

(d) A map of the area of review showing the number or name and location of all injection wells, producing wells, abandoned wells, plugged wells or dry holes, deep stratigraphic boreholes, state approved or United States Environmental Protection Agency approved subsurface cleanup sites, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells, other pertinent surface features, including structures intended for human occupancy, state, county, or Indian country boundary lines, and roads;

(e) A list of contacts, submitted to the commission, when the area of review extends across state jurisdiction boundary lines;

(f) Baseline geochemical data on subsurface formations, including all underground sources of drinking water in the area of review; and

(g) Any additional information the commission may require.

(4) The proposed calculated daily average and maximum daily injection rates, daily volume, and the total anticipated volume of the carbon dioxide stream using a method acceptable to and filed with the commission;

(5) The proposed average and maximum bottom hole injection pressure to be utilized at the reservoir. The maximum allowed injection pressure, measured in pounds per square inch gauge, shall be approved by the commission and specified in the permit. In approving a maximum injection pressure limit, the commission shall consider the results of well tests and other studies that assess the risks of tensile failure and shear failure. The commission shall approve limits that, with a reasonable degree of certainty, will avoid initiating a new fracture or propagating an existing fracture in the confining zone or cause the movement of injection or formation fluids into an underground source of drinking water;

(6) The proposed preoperational formation testing program to obtain an analysis of the chemical and physical characteristics of the injection zone and confining zone.

(7) The proposed stimulation program, a description of stimulation fluids to be used, and a determination that stimulation will not interfere with containment.

(8) A description of the site-specific processes that will result in carbon dioxide trapping, including immobilization by capillary trapping, dissolution, and mineralization at the site;

(9) The predicted rate of carbon dioxide trapping in the immobile capillary phase, dissolved phase, or mineral phase;

(10) Submitting a Class VI permit obtained from the applicable underground injection control program shall satisfy all of the requirements of subsections (1) through (9) of this section.

(11) Demonstrations with respect to the storage reservoir that:

(a) The storage operator has made a good-faith effort to obtain the consent of all persons who own reservoir estates within the storage reservoir;

(b) The storage operator has obtained the consent of persons who own reservoir estates comprising at least sixty percent of the physical volume contained within the defined storage reservoir; and

(c) All nonconsenting reservoir estate owners are or will be equitably compensated.

(12) Operation of a geologic storage project shall require issuance of a Class VI permit by the applicable underground injection control program.

Source: Laws 2021, LB650 § 6

Effective Date: August 28, 2021

PERMIT FEE

1. Any person filing a permit application or an application to amend an existing permit shall pay a processing fee. The fee will be based on actual processing costs, including computer data processing costs, incurred by the commission.

a. A record of all application processing costs incurred must be maintained by the commission.

b. Promptly after receiving an application, the commission shall prepare and submit to the applicant an estimate of the processing fee and a payment billing schedule.

c. After the commission's work on the application has concluded, a final statement will be sent to the applicant. The full processing fee must be paid before the commission issues its final decision on an application.

d. The applicant must pay the processing fee regardless of whether a permit is issued or denied, or the application withdrawn.

2. The commission has one year from the date an application is deemed complete to issue a final decision regarding the application.

Source: Laws 2021, LB650 § 7

Effective Date: August 28, 2021

002-STORAGE FACILITY PERMIT TRANSFER.

The storage operator and proposed transferee shall notify the commission in writing of any proposed permit transfer. The notice must contain the following:

a. The name and address of the person to whom the permit is to be transferred.

b. The name of the permit subject to transfer and location of the storage facility and a description of the land within the facility area.

c. The date that the storage operator desires the proposed transfer to occur.

d. A demonstration of financial assurance.

2. Commission review. The commission shall review the proposed transfer to ensure that the purposes are not compromised but are promoted. For good cause, the commission may deny a transfer request, delay acting on it, and place conditions on its approval.

3. Commission approval required. A permit transfer can occur only upon the commission's written order.

Source: Laws 2021, LB650, § 6.

Effective Date: August 28, 2021

003-HEARING NOTICE REQUIREMENTS

(This language is from TITLE 267 NEBRASKA OIL AND GAS CONSERVATION COMMISSION)

Revise 002.01 to add "or upon any question relating to geologic storage of carbon dioxide or to the administration of the GS Act."

Chapter 6 Rules of Practice and Procedure before the Oil and Gas Conservation Commission of the State of Nebraska

004.08 Cost of Hearing

A petition filed with the Commission for a public hearing shall be accompanied by a filing fee of ~~two hundred fifty dollars (\$250)~~ twelve hundred dollars (\$1200)

006.01A Time of Notice; Emergency Orders

Before any rule, regulation, or order, or amendment thereof, shall be made by the Commission, there shall be held a public hearing upon at least ~~fifteen (15)~~ thirty (30) days notice at such time and place as may be prescribed by the Commission and any interested person shall be entitled to be heard, except that when an emergency requiring immediate action is found by the Commission to exist, the Commission may issue an emergency order, without notice of hearing, which shall be effective upon promulgation but shall remain effective for no more than ~~twenty (20)~~ thirty (30) days.

006.04A2

006.04A3 there is an application for the entry of a unitization order under Section 57-910 to 57-910.12 R.S. Nebraska, notice of the hearing to be held on such application shall be served on the interested parties as hereinafter defined by certified mail at least ~~fifteen (15)~~ thirty (30) days prior to the date of the hearing.

For the purpose of pooling applications filed under Section

57-909, the term, "interested parties," shall mean those persons who own any oil or gas leasehold, mineral or royalty interest in the tracts to be pooled.

For the purpose of unitization applications filed under Section 57-910 to 57-910.12, the term, "interested parties," shall mean those persons whose names are required to be set forth in the application.

For the purpose of Carbon Dioxide Storage, the term "interested parties" shall mean those persons that own the Reservoir estate.

006.04G

In all cases where there is an application for Geologic Storage, in addition to notice of hearing as required by the Act, the applicant shall serve notice of hearing upon all interested parties. The term "interested parties" shall mean those persons who own any reservoir estate owner, leasehold, mineral, royalty interest and surface owner of land overlying the storage reservoir and within one-half mile of the storage reservoir boundaries. Applicant shall file a certificate showing the names and addresses of the interested parties, as above defined, upon whom notice has been or is being served.

006.04H

In all cases where there is an application for Geologic Storage, the notice of hearing shall include a statement that amalgamation of all storage reservoir estates is required to operate the storage facility, that the commission may require that the storage reservoir estates owned by nonconsenting owners be included in the storage facility and subject to geologic storage, and that the amalgamation of storage reservoir estates will be considered at the hearing.

Revise 006.04B, 006.04C, and 006.05 to add "or the GS Act" after "the Act".

Laws 2021, LB650, § 8. Effective Date: August 28, 2021

003-ISSUANCE OF PERMITS

(1) Before issuing a permit, the commission shall consult with the Department of Environment and Energy and the Underground Injection Control program permitting authority. (2) If the storage reservoir contains commercially valuable minerals, a permit may be issued only if the commission is satisfied that the interests of the mineral owners or mineral lessees will not be adversely affected or have been addressed in an arrangement entered into by the mineral owners or mineral lessees and the storage operator;

(3) The commission may include in a permit or order all things necessary to carry out the objectives of the Nebraska Geologic Storage of Carbon Dioxide Act and to protect and adjust the respective rights and obligations of persons affected by geologic storage.

(4) If a storage operator does not obtain the consent of all persons who own a reservoir estate within the storage reservoir, the commission may require that any reservoir estates owned by nonconsenting owners be included in a storage facility and subject to geologic storage.

(5) When the commission issues a permit, it shall also issue a certificate stating that the permit has been issued, describing the area covered, and containing other information the commission deems

appropriate. The commission shall file a copy of the certificate with the register of deeds in the county or counties where the storage facility is located.

Laws 2021, LB650, §§ 9-13. Effective Date: August 28, 2021

004-MINOR MODIFICATIONS OF PERMITS

Upon agreement between the storage operator and the commission, the commission may modify a permit to make the corrections or allowances without the storage operator filing an application to amend a permit. Any permit modification not processed as a minor modification under this section must be filed as an application to amend an existing permit in compliance with Chapter 6. Minor modifications may include:

1. Correct typographical errors;
2. Require more frequent monitoring or reporting by the storage operator;
3. Change an interim compliance date in a schedule of compliance, provided the new date is not more than one hundred twenty days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;
4. Allow for a change in ownership or operational control of a facility where the commission determines that no other change in the storage facility 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 storage operator has been submitted to the commission.
5. Change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the commission, would not interfere with the operation of the facility or its ability to meet conditions described in the permit;
6. Change well construction requirements approved by the commission, provided that any such alteration shall comply with the requirements of this chapter and no such changes are physically incorporated into construction of the well prior to approval of the modification by the commission; or
7. Amend a facility plan where the modifications clarify or correct the plan, as determined by the commission.

005-EMERGENCY AND REMEDIAL RESPONSE PLAN

The storage operator shall implement the commission-approved emergency and remedial response plan and the worker safety plan. This plan must include emergency response and security procedures. An emergency and remedial response plan approved as part of a Class VI permit issued under the applicable underground injection control program shall be sufficient to satisfy the emergency and remedial response plan requirements of this section. The plan, including revision of the list of contractors and equipment vendors, must be updated as necessary or as the commission requires. Copies of the plans must be available at the storage facility and at the storage operator's nearest operational office.

1. The emergency and remedial response plan requires a description of the actions the storage operator shall take to address movement of the injection or formation fluids that may endanger an underground source of drinking water during construction, operation, and post injection site care periods. The requirement to maintain and implement a commission-approved plan is directly enforceable

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regardless of whether the requirement is a condition of the permit. The plan must also detail:

a. The safety procedures concerning the facility and residential, commercial, and public land use within 1/2 mile, or any other distance set by the commission of the outside boundary of the facility area; and

b. Contingency plans for addressing carbon dioxide leaks from any well, flow lines, or other facility, and loss of containment from the storage reservoir, and identify specific contractors and equipment vendors capable of providing necessary services and equipment to respond to such leaks or loss of containment.

2. The storage operator shall review annually the emergency and remedial response plan developed under subsection 1. Based on this review, the storage operator shall submit to the commission an amended plan or demonstrate to the commission that no amendment to the plan is needed. Any amendments to the plan are subject to the commission's approval, must be incorporated into the storage facility permit, and are subject to the permit modification requirements. Amended plans or demonstrations that amendments are not needed shall be submitted to the commission as follows:

a. Within one year of an area of review reevaluation;

b. Following any significant changes to the facility, such as addition of injection or monitoring wells, on a schedule determined by the commission; or

c. When required by the commission.

3. Obtaining a Class VI permit obtained from the applicable underground injection control program and complying with the provisions of that permit shall satisfy all of the emergency and remedial response plan requirements of this section.

Source: Laws 2021, L8650, § 10.

Effective Date: August 28, 2021

006-REPORTING REQUIREMENTS.

1. The storage operator shall file with the commission all reports, submittals, notifications, and any other information that the commission requires including reports submitted to the applicable underground injection control program.

2. The storage operator shall give notice to the commission as soon as possible of any planned physical alterations or additions to the permitted storage facility or any other planned changes in the permitted storage facility or activity which may result in noncompliance with permit requirements.

3. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than thirty days following each schedule date.

4. The storage operator shall file with the commission semi-annually, or more frequently if the commission requires, a report on the volume of carbon dioxide injected into or withdrawn since the last report, the average injection rate, average composition of the carbon dioxide stream, wellhead and down-hole temperature and pressure data or calculations, or other pertinent operational parameters as required by the commission.

6. The quarterly report is due thirty days after the end of the quarter. The report must:

- a. Describe any changes to the physical, chemical, and other relevant characteristics of the carbon dioxide stream from the proposed operating data;
- b. State the monthly average, maximum, and minimum values for injection pressure, flow rate and volume, and annular pressure;
- c. Describe any event that exceeds operating parameters for annulus pressure or injection pressure specified in the permit;
- d. Describe any event which triggers a shutoff device required and the response taken;
- e. State the monthly volume and mass of the carbon dioxide stream injected over the reporting period and the volume injected cumulatively over the life of the project to date;
- f. State the monthly annulus fluid volume added; and
- g. State the results of monitoring

7. The storage operator shall file with the commission an annual report that summarizes the quarterly reports and that provides updated projections of the response and storage capacity of the storage reservoir. The projections must be based on actual reservoir operational experience, including any new geologic data and information. All anomalies in predicted behavior as indicated in permit conditions or in the assumptions upon which the permit was issued must be explained and, if necessary, the permit conditions amended. The annual report is due forty-five days after the end of the year.

8. The storage operator shall report, within thirty days, the results of any:

- a. Tests of mechanical integrity;
- b. Well workover; and
- c. Other test of the injection well conducted by the storage operator if required by the commission.

9. The storage operator shall report, within twenty-four hours:

- a. Evidence that the injected carbon dioxide stream or associated pressure front may cause an endangerment to an underground source of drinking water;
- b. Noncompliance which may endanger health and safety of persons or cause pollution of the environment, including:

(1) Monitoring or other information which indicates that any contaminant may cause an endangerment to underground sources of drinking water; or

(2) Noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water shall be provided verbally within twenty-four hours from the time the storage operator becomes aware of the circumstances. A written submission shall also be provided within five days of the time the storage operator becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

- c. Triggering of a shutoff system (e.g., down-hole or at the surface);
 - d. Failure to maintain mechanical integrity; or
 - e. Release of injected carbon dioxide to the atmosphere or biosphere as detected any required surface air and soil gas monitoring, or other monitoring technologies required by the commission.
10. The storage operator shall retain the following records until project completion:
- a. All data collected for the applications of the storage facility permit, injection well permit, and operation of injection well permit;
 - b. Data on the nature and composition of all injected fluids collected.
 - c. All records from the closure period, including well plugging reports, postinjection site care data, and the final assessment.
 - d. Upon project completion, the storage operator shall deliver any records required in this section to the commission.
11. The storage operator shall retain the following records for a period of at least ten years from the date of the sample, measurement, or report:
- a. Monitoring data collected and
 - b. Calibration and maintenance records and all original recordings for continuous monitoring instrumentation, and copies of all reports required by the storage facility permit.
 - c. This period may be extended by request of the commission at any time.
12. The storage operator shall report all instances of noncompliance not otherwise reported under this section, at the time monitoring reports are submitted.
13. Whenever the storage operator becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the commission, such facts or information shall be promptly submitted to the commission. Failure to do so may result in revocation of the permit, depending on the nature of the information withheld.
14. Obtaining a Class VI permit obtained from the applicable underground injection control program and complying with the provisions of that permit shall satisfy all of the requirements of this section.

Source: Laws 2021, LB650, § 11

Effective Date: August 28, 2021

007-STORAGE FACILITY FEES.

1. The storage operator shall pay the commission a fee of one cent on each ton of carbon dioxide injected for storage. The fee must be deposited in the carbon dioxide storage facility administrative fund.

2. The storage operator shall pay the commission a fee of seven cents on each ton of carbon dioxide injected for storage. The fee must be deposited in the carbon dioxide storage facility trust fund.

3. After notice and hearing, the commission may issue an order to adjust the fee amounts.

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Source: Laws 2021, LB650, § 16, § 17

Effective Date: August 28, 2021

Cross References

Nebraska Capital Expansion Act, see section 72-1269.

Nebraska State Funds Investment Act, see section 72-1260

008- GEOLOGICAL STORAGE FACILITY BOND REQUIREMENTS

Prior to commencing injection operations, the operator of any storage facility shall submit to the commission, and obtain its approval, a surety bond or cash bond in the amount specified by the commission. An alternative form of security may be approved by the commission. The operator of the storage facility shall be the principal on the bond provided to cover the storage facility. Each surety bond shall be executed by a responsible surety company or cash bond provided by operator authorized to transact business in Nebraska. The commission shall periodically review the bond amount and through public notice and hearing may issue an order to adjust that amount.

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009-POSTINJECTION SITE CARE AND FACILITY CLOSURE

The storage operator shall submit and maintain the post injection site care and facility closure plan as a part of the storage facility permit application to be approved by the commission. Obtaining a Class VI permit from the applicable underground injection control program and complying with the provisions of that permit shall satisfy all of the requirements of this section for submitting and maintaining a post injection site care and facility closure plan. The requirement to maintain and implement a commission-approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

1. The postinjection site care and facility closure plan must include the following information:

- a. The pressure differential between pre injection and predicted post injection pressures in the injection zone;
- b. The predicted position of the carbon dioxide plume and associated pressure front at cessation of injection as demonstrated in the area of review evaluation;
- c. A description of post injection monitoring location, methods, and proposed frequency;
- d. A schedule for submitting post injection site care monitoring results to the commission; and
- e. The duration of the post injection site care monitoring timeframe that ensures non endangerment of underground sources of drinking water.

2. The storage operator shall specify in the post injection site care and facility closure plan which wells will be plugged and which will remain unplugged to be used as subsurface observation wells. Subsurface observation and ground water monitoring wells as approved in the plan must remain in place for continued monitoring during the closure period.

3. Upon cessation of injection, the storage operator shall either submit an amended post injection site care and facility closure plan

or demonstrate to the commission through monitoring data and modeling results that no amendment to the plan is needed. Any amendments to the post injection site care and facility closure plan are subject to the commission's approval and must be incorporated into the storage facility permit.

4. At any time during the life of the geologic storage project, the storage operator may modify and resubmit the post injection site care and facility closure plan for the commission's approval.

5. Upon cessation of injection, all wells not associated with monitoring must be properly plugged and abandoned in a manner which will not allow movement of injection or formation fluids that endanger underground sources of drinking water. All storage facility equipment, appurtenances, and structures not associated with monitoring must be removed or repurposed. Following well plugging and removal of all surface equipment, the surface must be reclaimed to the commission's specifications that will, in general, return the land as closely as practicable to original condition.

6. The well casing must be cut off at a depth of four feet below the surface and a steel plate welded on top identifying the well name and that it was used for carbon dioxide storage.

7. The commission shall determine in conjunction with the storage operator whether any post closure monitoring will be conducted and, if so, develop a monitoring plan for the post closure period, including a review and final approval of wells to be plugged.

8. The storage operator shall continue to conduct monitoring during the closure period as specified in the commission-approved post injection site care and facility closure plan. The storage operator may apply for project completion with an alternative post injection site care monitoring timeframe. Once it is demonstrated that underground sources of drinking water are no longer endangered, the final assessment is complete, and the storage operator may apply to the commission for a certificate of project completion. If the storage operator is unable to demonstrate that underground sources of drinking water are no longer being endangered, the storage operator shall continue monitoring the storage facility until full compliance is met and such demonstration can be made.

9. Before project completion, the storage operator shall provide a final assessment of the stored carbon dioxide's location, characteristics, and its future movement and location within the storage reservoir. The storage operator shall submit the final assessment to the commission within ninety days of completing all postinjection site care and facility closure requirements.

a. The final assessment must include:

(1) The results of computational modeling performed pursuant to delineation of the area of review.

(2) The predicted timeframe for pressure decline within the injection zone, and any other zones, such that formation fluids may not be forced into any underground sources of drinking water or the timeframe for pressure decline to preinjection pressures;

(3) The predicted rate of carbon dioxide plume migration within the injection zone and the predicted timeframe for the cessation of injection induced migration;

(4) A description of the site-specific processes that will result in carbon dioxide trapping, including immobilization by capillary trapping, dissolution, and mineralization at the site;

(5) The predicted rate of carbon dioxide trapping in the immobile capillary phase, dissolved phase, or mineral phase;

(6) The results of laboratory analyses, research studies, or field or site specific studies to verify the information required in paragraphs 4 and 5;

(7) A characterization of the confining zone, including a demonstration that it is free of transmissive faults, fractures, and microfractures, and an evaluation of thickness, permeability, and integrity to impede fluid (e.g., carbon dioxide, formation fluids) movement;

(8) Any other projects in proximity to the predictive modeling of the final extent of the carbon dioxide plume and area of elevated pressures. The presence of potential conduits for fluid movement, including planned injection wells and project monitoring wells associated with the proposed geologic storage project;

(9) A description of the well construction and an assessment of the quality of plugs of all abandoned wells within the area of review;

(10) The distance between the injection zone and the nearest underground source of drinking water above and below the injection zone;

(11) An assessment of the operations conducted during the operational period, including the volumes injected, volumes extracted, all chemical analyses conducted, and a summary of all monitoring efforts. The report must also document the stored carbon dioxide's location and characteristics and predict how it might move during the post closure period;

(12) An assessment of the funds in the carbon dioxide storage facility trust fund to ensure that sufficient funds are available to carry out the required activities on the date on which they may occur, taking into account project-specific risk assessments, projected timing of activities (e.g., post injection site care), and interest accumulation in the trust fund; and

(13) Any additional site-specific factors required by the commission.

a. Information submitted to support the demonstration in subdivision a must meet the following criteria:

(1) All analyses and tests for the final assessment must be accurate, reproducible, and performed in accordance with the established quality assurance standards. An approved quality assurance and quality control plan must address all aspects of the final assessment;

(2) Estimation techniques must be appropriate and test protocols certified by the United States Environmental Protection Agency must be used where available;

(3) Predictive models must be appropriate and tailored to the site conditions, composition of the carbon dioxide stream, and injection and site conditions over the life of the geologic storage project;

(4) Predictive models must be calibrated using existing information when sufficient data are available;

(5) The sources and bases used for modeling assumptions must be disclosed to the commission whenever values are estimated on the basis of known, historical information instead of site-specific measurements;

(6) An analysis must be performed to identify and assess parameters of the post injection monitoring timeframe demonstration that contribute significantly to uncertainty. The storage operator shall conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration; and

(7) Any additional criteria required by the commission.

a. The storage operator shall provide a copy of an accurate plat certified by a registered surveyor which has been submitted to the county recorder's office designated by the commission. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks. The storage operator must also submit a copy of the plat to the United States Environmental Protection Agency regional administrator office and Nebraska Department of Environment and Energy.

10. The storage operator shall record a notation on the deed to the property on which the injection well was located, or any other document that is normally examined during title search, that will in perpetuity provide any potential purchaser of the property the following information:

a. The fact that land has been used to sequester carbon dioxide;

b. The name of the state agency, local authority, or tribe with which the survey plat was filed, as well as the address of the applicable United States Environmental Protection Agency regional office to which it was submitted; and

c. The volume of fluid injected, the injection zone or zones into which it was injected, and the period over which injection occurred.

010-DETERMINING STORAGE AMOUNTS

1. Upon application by a geologic storage project operator, the commission, after notice and hearing, shall issue an order determining the amount of injected carbon dioxide stored in a storage reservoir under a permit issued pursuant to Neb Rev Stat Section 57-1601 et seq.

2. The applicant shall pay a processing fee for a storage amount determination. The applicant shall pay a processing fee based on the commission's actual processing costs, including computer data processing costs, as determined by the commission. The following procedures and criteria will be utilized in establishing the fee:

a. A record of all application processing costs incurred must be maintained by the commission.

b. Promptly after receiving an application, the commission shall prepare and submit to the applicant an estimate of the processing fee.

c. After the commission's work on the application has concluded, a final statement will be sent to the applicant. The full processing fee must be paid before the commission issues its decision on the application.

d. The applicant must pay the processing fee even if the application is denied or withdrawn.

Source: Laws 2021, LB 650, § 24
Effective Date: August 28, 2021

011-STRATIGRAPHY TEST HOLES

(This language references, TITLE 267 NEBRASKA OIL AND GAS CONSERVATION COMMISSION)

All stratigraphic test holes must be drilled as per the rules contained in Chapter 3 Sections 003, 004, 006, 007) and Section 012 General Drilling Rules.

DONE, at Sidney, Nebraska, this 18th day of November 18, 2021

NEBRASKA OIL AND GAS CONSERVATION COMMISSION

By: _____
Stan Belieu, Director