



Carbon Storage and Geological Sequestration

Class VI Injection Wells and Facilities

Underground Injection Control Program

Informational Program Packet

Date August 3, 2023

Rev. 4

Class VI wells are issued by the director of the Department of Environmental Quality (department). This document provides guidance on obtaining a Class VI permit in the State of Wyoming. This document serves as an addendum to the 2013 Technical Memorandum No. 4, A Guide to Geologic Carbon Sequestration: Science, Technology, and Regulatory Framework (prepared for the department by the Wyoming Geological Survey - <https://sales.wsgs.wyo.gov/a-guide-to-geologic-carbon-sequestration-science-technology-and-regulatory-framework-2013/>). In addition, this document provides clarification of to the permitting process identified in Water Quality Rules, Chapter 24 – Class VI Injection Wells and Facilities Underground Injection Control Program.

To stay up-to-date on policies, guidance and other information for Underground Injection Control Class VI wells, sign up at:

https://public.govdelivery.com/accounts/WYDEQ/subscriber/new?topic_id=WYDEQ_48

General Information for Carbon Sequestration

1. Definitions

Wyoming Statute (W.S.) § 35-11-103(c) Specific definitions applying to Water Quality:

- ◆ (xx) "Geologic sequestration" means the injection of carbon dioxide and associated constituents into subsurface geologic formations intended to prevent its release into the atmosphere;
- ◆ (xxi) "Geologic sequestration site" means the underground geologic formations where the carbon dioxide is intended to be stored;
- ◆ (xxii) "Geologic sequestration facilities" means the surface equipment used for transport, storage, and injection of carbon dioxide.

Water Quality Rules, Chapter 24, Section 2, the following definition supplements the definitions contained in Section § 35-11-103 of the Wyoming Environmental Quality Act: “Geologic sequestration project” means an injection well or wells used to emplace a carbon dioxide stream into an injection zone for geologic sequestration. It includes the subsurface three-dimensional extent of the carbon dioxide plume, associated pressure front, displaced fluid, and the surface area above that delineated region.

2. Ownership

W.S. § 34-1-153 Ownership of material injected into geologic sequestration sites; liability for holding interests related to a sequestration site or giving consent to allow geologic sequestration activities.

(a) All carbon dioxide and other substances injected incidental to the injection of carbon dioxide, injected into any geologic sequestration site for the purpose of geologic sequestration shall be presumed to be owned by the injector of such material, and all rights, benefits, burdens and liabilities of such ownership shall belong to the injector. This presumption may be rebutted by a person claiming contrary ownership by a preponderance of the evidence in an action to establish ownership.

(b) No owner of pore space, other person holding any right to control pore space or other surface or subsurface interest holder, shall be liable for the effects of injecting carbon dioxide for geologic sequestration purposes or for the effects of injecting other substances for the purpose of geologic sequestration which substances are injected incidental to the injection of carbon dioxide, solely by virtue of their interest or by their having given consent to the injection.

3. Geologic Sequestration – Class VI Wells

The Underground Injection Control program consists of six classes of wells:

- Class I wells are used to inject hazardous and non-hazardous wastes into deep, isolated rock formations (<http://deq.wyoming.gov/wqd/underground-injection-control/resources/class-i/>).
- Class II wells are used exclusively to inject fluids associated with oil and natural gas production (<https://wogcc.wyo.gov/>).
- Class III wells are used to inject fluids to dissolve and extract minerals (<http://deq.wyoming.gov/lqd/>).
- Class IV wells are shallow wells used to inject hazardous or radioactive wastes into or above a geologic formation that contains a USDW (These wells are banned; <https://www.epa.gov/uic/class-iv-shallow-hazardous-and-radioactive-injection-wells>).
- Class V wells are used to inject non-hazardous fluids underground. Most Class V wells are used to dispose of wastes into or above underground sources of drinking water (<http://deq.wyoming.gov/wqd/underground-injection-control/resources/class-v/>).
- Class VI wells are used for injection of carbon dioxide (CO₂) into underground subsurface rock formations for long-term storage, or geologic sequestration (<http://deq.wyoming.gov/water-quality/groundwater/uic/class-vi/>).

4. Primacy

Section 1421 of the Safe Drinking Water Act (SDWA) requires the US EPA to develop UIC program requirements that protect underground sources of drinking water. Primary enforcement authority, often called primacy, refers to a state, territory, or tribal responsibility associated with implementing US EPA-approved UIC programs. Primacy programs are established under Sections 1422 and 1425 of the SDWA. Wyoming received primacy over Class I through V in 1983. The Wyoming Department of Environmental Quality received primacy over Class VI wells on September 3, 2020. Wyoming is one of two states to have received primacy for implementing the Class VI program; the other is North Dakota.

Wyoming's primacy documents can be found here:

<https://www.federalregister.gov/documents/2020/10/09/2020-20544/wyoming-underground-injection-control-program-class-vi-primacy>

5. Application Process

The following instructions outline the procedures to follow and information needed for a Class VI Injection Well Permit application as required by Wyoming Water Quality Rules (WWQR) Chapter 24. The Wyoming Department of Environmental Quality (Department) has sixty (60) days to determine application completeness. Permit applications have a mandatory sixty (60) day public notice period.

The following information sheets and forms are available to assist in applying for a Geologic Sequestration Permit (also referred to as Class VI Permit):

1. Informational Meeting
2. Site Characterization – Stratigraphic Test or Core Hole (if necessary)
3. Pre-Application Meeting
4. Geologic Sequestration Class VI Permit Application – General Information
5. Geologic Sequestration Class VI Permit Application – Technical Information

6. Injection Well Depth Waiver
7. Expansion to the Areal Extent of Existing Class II Injection Well Aquifer Exemptions for Class VI Injection Wells

6. Informational Meeting

Prospective owners or operators of a Geologic Sequestration Site are recommended to meet with the Water Quality Division of the Wyoming Department of Environmental Quality (Department) early in the project to ensure that the appropriate information is identified to complete the Class VI Injection Well and Facility Permit Application. Individuals interested in discussing the Class VI permitting process and their potential project may request an informational meeting. Contact Graeme Finley, Senior Project Geologist, at 307-473-3478 to request this meeting. This meeting will focus solely on learning about the Class VI permitting process. Meetings with individuals or agencies regarding surface and mineral ownership rights are strongly encouraged to begin at this step.

7. Confidentiality

Wyoming Statutes § 16-4-203 (Wyoming Public Records Act) and §35-11-1101 (Wyoming Environmental Quality Act) provide that certain documents or information may be entitled to protection as trade secrets or commercial/financial information with confidential treatment by the Wyoming Department of Environmental Quality (WDEQ). To request a trade secret/confidential commercial or financial information claim, please complete the CBI-TS External Claim Form and submit the form and associated documents in a hard copy format either by hand delivery or mail carrier services to:

Wyoming Department of Environmental Quality
Attn: Lily R. Barkau, Groundwater Section Manager, Water Quality Division
200 West 17th Street, 2nd Floor
Cheyenne, WY 82002

If you have any questions regarding confidential information, please contact WDEQ **before** submitting any information.

8. Siting a Class VI Well

Chapter 24, Section 12 identifies the minimum requirements for siting Class VI wells. Wells shall be sited in areas with a suitable geologic system. If the owner/operator believes that sufficient information has been collected to submit an application, a stratigraphic test may not be necessary. Collection of additional information may be collected during drilling activities of the Class VI well. If a stratigraphic test is determined to be needed, a permit through the Wyoming Oil and Gas Conservation Commission is required. Once completed, the stratigraphic test may be temporarily abandoned but cannot be converted to a Class VI well until the permitting process is complete. For more information on a stratigraphic test, see the attached Geologic Sequestration – Site Characterization informational sheet.

9. Wyoming State Lands and Bureau of Land Management Surface Ownership

Surface property owned by the State of Wyoming or the federal government will require permits for access or site characterization. Before submitting a Class VI permit application, a copy of any permits with the Office of State Lands and Investment or Bureau of Land Management will be required to proceed. For more information regarding permits/access, contact:

- Office of State Lands and Investments – Tyler Seno, Commercial Leasing, 307-777-5762 or tyler.seno@wyo.gov
- Bureau of Land Management – Duane Spencer, BLM WY Deputy State Director, Minerals and Lands, 307-775-6146 or dspencer@blm.gov.

10. Title

W.S. §35-11-318 requires the injector to hold title to any carbon dioxide the injector injects into and stores underground or within a unit area.

11. Pre-Application Meeting

A pre-application meeting is required at least 45 days before an application is submitted. During the pre-application meeting, the prospective owner or operator may meet with other Department coordinators from the Industrial Siting, Air Quality Division, and Water Quality Division, if requested. A representative from the Bonding Group may also be present to address questions regarding financial assurance. These groups may have requirements in addition to the Class VI permit. Please review the Pre-Application Meeting sheet and complete the form to bring to the meeting.

12. Application Fee

In accordance with W.S. 35-11-313(h), the applicant shall pay a fee to be determined by the director based upon the estimated costs of reviewing, evaluating, processing, serving notice on an application, and holding any hearings. Unused fees shall be returned to the applicant.

Following the pre-application meeting, the Department will submit instructions on submitting the application along with the fee required at the time an application is filed. The fee will be determined based on a cost estimate developed from the pre-application meeting.

Application fees are only accepted through an ACH bank transfer or by check at this time. For additional information on application fees or to request ACH bank transfer information, please contact Graeme Finley at 307-473-3478.

13. Unitization

Unitization of geologic sequestration sites, purposes, definitions, hearings on the application, order, modification, and economic benefits; liens are found in W.S. § 35-11-314 through § 35-11-317. An application for unitization is to be made to the Wyoming Oil and Gas Conservation Commission (<https://wogcc.wyo.gov/>) and contains the following:

- A copy of any permit or draft permit issued by the Department of Environmental Quality allowing sequestration or any application for such permit;
- A description of the pore space and surface lands proposed to be so operated termed the “unit area”;
- The names, as disclosed by the conveyance records of the county or counties in which the proposed unit area is situated, and the status records of the district office of the bureau of land management of:
- All persons owning or having an interest in the surface estate and pore space in the unit area, including mortgages and the owners of other liens or encumbrances; and
- All owners of the surface estate and pore space not included within but which immediately adjoins the proposed unit area or a corner thereof.

- f. The addresses of all persons and owners identified in subparagraphs of 3.a and 3.b above, if known. If the name or address of any person or owner is unknown, the application shall indicate;
- g. A statement of the type of operations contemplated in order to effectuate the purposes specified in W.S. 35-11-314 to comply with environmental requirements and to facilitate the use and production of Wyoming energy resources;
- h. A proposed plan of unitization applicable to the proposed unit area which the applicant considers fair, reasonable, and equitable and which shall include provisions for determining the pore space to be used within the area, the appointment of a unit operator, and the time when the plan is to become effective;
- i. A proposed plan for determining the quantity of pore space storage capacity to be assigned to each separately owned tract within the unit and the formula or method by which pore space will be allocated the economic benefits generated by the use of pore space in the unit area;
- j. A proposed operating plan providing the manner in which the unit area will be supervised and managed and, if applicable, costs allocated and paid, unless all owners within the proposed unit area have joined in executing an operating agreement or plan providing for such supervision, management, and allocation and, if applicable, payment of costs. All operating plans shall comply with all applicable environmental requirements.

The Wyoming Oil and Gas Conservation Commission may have additional requirements and forms to be completed as part of the unitization process. Questions regarding unitization should be directed to the Wyoming Oil and Gas Conservation Commission at (307) 234-7147 or <https://wogcc.wyo.gov/>.

14. Wyoming Conservation Executive Orders 2019-3 and 2020-1

- a) Sage Grouse Executive Order 2019-3 (SGEO). This applies to projects that will cause disturbance subject to this permit in Sage Grouse Core Area (SGCA), Connectivity Area, Winter Concentration Area, or within two miles of a Non-core Area sage-grouse lek as determined under the Governor's Executive Order 2019-3. See the Wyoming Game & Fish Department Sage Grouse Management Website (<https://wgfd.wyo.gov/Habitat/Sage-Grouse-Management>) for more information.

The SGEO requires project sponsors to conduct development in a manner that will be protective of Sage Grouse's habitat and populations. The SGEO requires development activities to be in accordance with certain practices and stipulations specified in the SGEO and in any additional correspondence from the Wyoming Game and Fish Department (WGFD). Applicants who have noted that some or all of their project lie within SGCA or non-core population areas protected under the SGEO shall:

1. Prior to submitting an application package, the applicant must consult with the WGFD about their project and its potential impacts on Sage Grouse in SGCA and/or non-core population areas.
2. The consultation process with the WGFD will result in either a letter of consistency with the SGEO or documentation that the project is considered *de minimus* under the SGEO.
3. Permittees must adhere to any relevant stipulations provided in the SGEO or through correspondence from the WGFD.

4. Projects that are determined to be consistent with the SGEO by the WGFD will continue with the permit application process. The permittee is required to abide by all relevant SGEO stipulations and all additional Sage Grouse-related stipulations from the WGFD.

5. SGEO 2019-3 can be found here:
https://wgfd.wyo.gov/WGFD/media/content/PDF/Habitat/Sage%20Grouse/Governor-Gordon-Greater-Sage-Grouse-EO-2019-3_August-21-2019_Final-Signed_2.pdf

b) Mule Deer and Antelope Migration Corridor Protection Executive Order 2020-1 (MCEO). Applicants for state-permitted projects within a designated migration corridor must consult with the WGFD to determine if the proposed project will adversely affect migration corridor (MC) functionality. The MCEO requires development activities to be conducted in accordance with certain practices and stipulations specified in the MCEO and in any additional correspondence from the WGFD. Applicants who have noted that some or all of their project lies within protected MCs shall:

1. Prior to submitting an application package, the applicant must consult with the WGFD about their project and its potential impacts on Migration Corridors.

2. Projects shall receive a letter of consistency with the WGFD indicating that the project is or is not consistent with the MCEO.

3. Sage Grouse in SGCA and/or non-core population areas.

4. Projects that are determined to be consistent with the MCEO by the WGFD will continue with the permit application process. The permittee is required to abide by all relevant MCEO stipulations and all additional Migration Corridor-related stipulations from the WGFD.

5. MCEO 2020-1 can be found here:
<https://drive.google.com/file/d/1TLuj1UGcRTjOvBklmP4qwjehSVmGjch8/view>

The WDEQ recommends that operators register for and use the Natural Resource and Energy Explorer (NREX) application (<https://nrex.wyo.gov/>) to determine their project's proximity to areas protected under the SGEO and/or MCEO. You will need to know the latitude and longitude of your project boundaries in order to identify any areas that are impacted by either executive order. If in doubt, please contact the WGFD Habitat Protection Program for assistance at (307) 777-4506 or wgfd.hpp@wyo.gov

15. General Instructions for Application Submittal

The applicant shall submit the application as one (1) hard copy and duplicate on a USB Flash Drive.

Submit hard-copy applications to the following address:

Wyoming Department of Environmental Quality, Water Quality Division
ATTN: Groundwater Section Manager
200 West 17th Street - 2nd Floor
Cheyenne, WY 82002

All applications for permits, reports, or information submitted to the Administrator shall be signed by a responsible corporate officer.

A responsible corporate officer means a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function or any other person who performs similar policy- or decision-making functions for the corporation. Further definitions for a corporation, partnership, sole proprietorship, and municipality, state, federal, or other public agency are found in Chapter 24, Section 2 (mm).

Applications are reviewed for completeness and technical adequacy. The applicant may be contacted for clarification or additional information during the completeness review. An application will be processed once all required information has been submitted. An application consists of:

- Permit Application – General Information and Signatory Authority (Part 1)
- Permit Application – Technical Information (in the report format provided by WDEQ) (Part 2)
- Permit Application Fee

Severely deficient applications, applications without original and required signatures, applications in a format that is not approved by the Administrator, applications with illegible information, or applications with information not submitted in a timely manner shall be returned to the applicant.

Once all parts of the permit application are received, a letter stating that the full permit application has been received and instructions will be provided to publish notice of the application in a newspaper of general circulation in each county of the proposed operation will be provided. The notice is published at weekly intervals for four (4) consecutive weeks, and a copy of the notice shall be mailed to all surface owners, mineral claimants, mineral owners, lessees, and other owners of record of subsurface interest that are located within one (1) mile of the proposed boundary of the geologic sequestration site.

If your application is deemed complete and technically adequate, the department shall prepare a draft permit. In addition, notification shall be provided to other interested entities and shall follow the process outlined in Chapter 24, Section 27. In accordance with W.S. 35-11-313 (f)(ii)(F) – The department may issue a draft permit contingent on obtaining a unitization order pursuant to W.S. § 35-11-314 through § 35-11-317.

A mandatory sixty (60)-day public comment period is required. A public hearing will be scheduled on the last day of the public comment period in the county the project is located at. If no comments are made during the public comment period, the Director shall make a final determination for permit issuance or denial within sixty (60) days after the public comment period. If unitization is required, authorization to inject may only be issued once the unitization Order is issued.

The Class VI application form is located on the Wyoming Department of Environmental Quality website at <https://deq.wyoming.gov/water-quality/groundwater/uic/class-vi/> under the ‘Forms and Guidance’ tab located at the top of the page.

16. Financial Assurance

Owners or operators of Class VI wells shall establish, demonstrate, and maintain financial responsibility for all applicable phases of the geologic sequestration project, including complete site reclamation in the event of default. The phases of a geologic sequestration project are:

- a. Permitting/characterization;

- b. Testing and monitoring, pursuant to Section 20 of Water Quality Rules, Chapter 24;
- c. Operations, including injection and well-plugging, pursuant to Sections 18 and 23 of Water Quality Rules, Chapter 24;
- d. Post-injection site care pursuant to Section 24 of Water Quality Rules, Chapter 24.

In addition, an owner or operator must obtain and maintain public liability insurance for a geologic sequestration project. Information regarding public liability insurance is provided in Water Quality Rules, Chapter 24, Section 26(l).

Forms required for bonds are located at: <https://deq.wyoming.gov/administration/bonding/> For additional information or assistance on bonding, please contact Frances Tormey, bond analyst, at 307-777-3767 or frances.tormey@wyo.gov.

17. Certificate of Project

W.S. §35-11-313(n) requires the department to issue a certificate upon issuance of a Class VI permit. The certificate will include a statement that the permit has been issued, a description of the area covered by the permit, and any other information that the department deems appropriate. The injector shall file a copy of the certificate with the county clerk in the county or counties where the geologic sequestration site is located.

18. Permit to Construct

A Class VI Permit to Construct is issued as follows:

- a. As described in number 15 above.
- b. Class VI injection well and associated monitoring wells are constructed.
- c. Data acquired during the construction of the Class VI injection well and associated monitoring wells may require a modification to the Class VI permit or the associated plans.
- d. Modifications to the construction of the injection well or associated monitoring wells is considered a minor permit modification.
- e. Modifications to required plans or the Area of Review or other sections of the permit are considered major permit modifications. Therefore, a permit modification application is required.
- f. Only those sections of the permit requiring modification will be addressed in the application. Permit modifications are subject to public notice requirements, but only the sections being modified are subject to public notice.

19. Aquifer Exemptions

New aquifer exemptions are not allowed for Class VI wells. Class VI wells are required to inject below the lowermost Underground Source of Drinking Water (USDW). The owner/operator may request a depth waiver to inject into a non-USDW provided they can demonstrate that the USDWs located above and/or below the injection zone will not be endangered. An Injection Depth Waiver Report will be submitted for WDEQ consideration and then submitted to the US EPA for review and concurrence. See *Injection Depth Waiver Report (Form 2)* for further information.

To expand the areal extent of an existing Class II aquifer exemption, a demonstration that the existing approved aquifer exemption needs to be expanded and that the CO₂ plume and pressure front will remain within the expanded exempted area is required. The US EPA is the regulatory agency to issue this

exemption. See *Expansion to the Areal Extent of Existing Class II Injection Well Aquifer Exemptions for Class VI Injection Wells* (Form 3) for further information.

20. Authorization to Inject

Following the construction of the injection well and associated monitoring wells and completion of any modifications to the permit, including public notice requirements and all financial assurance requirements are in place, an authorization to inject will be issued by the department through a modified Class VI Permit. Unitization, as presented in Section 13 of this packet, must be completed prior to issuance of the modified Class VI permit. Operations and injections may only occur once authorization is received from the department.

21. Special Revenue Account

W.S. §35-11-320 requires a fee to be paid by all permittees of geologic sequestration sites and facilities. This fee may include a per-ton injection or a closure fee during the period of injection of carbon dioxide. This fee and use of the fee are established in Water Quality Rules, Chapter 29.

22. Certificate of Project Completion

W.S. §35-11-319 provides information regarding the issuance of a Certificate of Project Completion. A certificate may only be issued after the owner/operator has applied for the certificate and has demonstrated plume stabilization, and met the site-closure requirements identified in Water Quality Rules, Chapter 24, Section 24 and W.S. §35-11-313.

If you have any questions, please contact the Groundwater Section of the Water Quality Division for further information.

Class VI Contact Information

Lily R. Barkau, P.G. – Groundwater Section Manager, 307-777-7072, lily.barkau@wyo.gov

Graeme Finley, P.G. – Senior Project Geologist, 307-473-3478, graeme.finley@wyo.gov

Tyler Harris, G.I.T – Natural Resource Program Principal, 307-777-5501, tyler.harris@wyo.gov