

# Regulatory Elements Identified for a Class VI Primacy Program

Lily R. Barkau, P.G.  
Groundwater Section Manager  
Water Quality Division  
Department of Environmental Quality

Groundwater Protection Council  
Technical & Policy Issues Surrounding CCUS & Class VI UIC

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# Wyoming's Process

- ◆ Statute (2008)
- ◆ Rule Making (2010, 2013, 2019)
  - Crosswalk – Could not Incorporate by Reference
  - Stringency – Code of Federal Regulations

# Wyoming's Process

- ◆ Primacy Application (2017-2018)
  - Water Quality Rule, Chapter 24
  - Memorandum of Agreement between WDEQ and EPA
  - Attorney General Statement
  - Program Description – includes permit application and various inspection forms

# Wyoming's Process

- ◆ Primacy (2020)
- ◆ Rule Revision (2021)

# Next Steps

- ◆ Program Administration
  - Permit Application
  - Permit Issuance
  - Operations

# Permit Application

- ◆ Permit Application
  - Is the application complete?
  - What in-house expertise do we have to conduct the application review?
  - Are all of the statutory and regulatory requirements met?

# Permit Application

- ◆ Class VI Permit Application
- ◆ Water Quality Rules and Regulations, Chapter 24
- ◆ Wyoming Statute §35-11-313



WATER QUALITY DIVISION  
UNDERGROUND INJECTION CONTROL

PERMIT APPLICATION  
CLASS VI WELL

Mail one (1) hard copy with original signatures and one (1) digital copy to:

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

Office Use Only

UIC Facility Number: \_\_\_\_\_

UIC Permit Number: \_\_\_\_\_

Date Received: \_\_\_\_\_

A complete application for a Class VI well shall include all information required under Wyoming Water Quality Rules and Regulations (WQRR), Chapter 24 and this application consisting of Part I and II.

All data used to complete the permit application shall be kept by the applicant for the life of the geologic sequestration project and for ten (10) years following site closure.

**I. FORMS AND GENERAL INFORMATION AND SIGNATORY AUTHORITY**

**CLASS VI WELL DEFINITION: (WQRR CHAPTER 24, SEC 2)**

“Class VI well” means a well injecting a carbon dioxide stream for geologic sequestration, beneath the lowermost formation containing an Underground Source of Drinking Water (USDW); or a well used for geologic sequestration of carbon dioxide that has been granted a waiver of the injection depth requirements pursuant to requirements of WQRR Chapter 24, Section 10; or, a well used for geologic sequestration of carbon dioxide that has received an expansion to the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to WQRR Chapter 24, Section 5.

1. Facility name \_\_\_\_\_  
(This is the facility name that will appear on the permit.)
2. Type of application submittal \_\_\_\_\_

# Wyoming Class VI Checklist

Class VI Permitting Preparations: Assemble a permit application review team:						
<ol style="list-style-type: none"> <li>1. Site Characterization: geologists, hydrogeologists, geochemists log analysts/experts to review geologic data submitted with the permit application.</li> <li>2. Modeling: hydrogeologists and environmental/reservoir modelers to evaluate the models that will be used to delineate the AoR.</li> <li>3. Well construction and testing: well engineers, log analysts/experts, geologists to review well construction information and the results of well testing that will be performed during construction of the injection well.</li> <li>4. Finance: to review the financial responsibility demonstration, including cost estimates and the proposed financial instruments – IC personnel who are familiar with financial responsibility as well as accountants and economists.</li> <li>5. Risk analysis: to evaluate emergency and remedial response scenario probabilities and remediation cost estimates submitted with the Emergency and Remedial Response Plan.</li> <li>6. Policy, legal and regulatory expertise: UIC program and the Class VI Rule to evaluate compliance with Class VI Rule requirements.</li> </ol>						
GSDT reporting for operators and the State.					Will need to develop our way of reporting that will be suitable for reporting to EPA. Appears to be notification points to contact EPA so it is not a standalone State tool.	
Task	New Well	Class I or V Conversion	Class II Conversion	How is this evaluated?	Staff/Contractor	
			<p>3(b) In addition, these regulations shall apply to owners and operators of Class I industrial, Class II, or Class V experimental or demonstration carbon dioxide injection projects who seek to apply for a Class VI geologic sequestration permit for their well or wells.</p> <p>(i) Owners and/or operators of permitted Class I, Class II, or Class V injection well(s) seeking to convert their well(s) to a Class VI well shall apply for a Class VI permit and shall demonstrate to the Administrator that the well(s) was/were engineered and constructed to meet the requirements outlined in Section 9(a) of these regulations and ensure protection of USDWs, in lieu of requirements of Section 9(b) and Section 11(a) of this chapter. By December 10, 2011, owners or operators of either Class I wells previously permitted for the purpose of geologic sequestration or Class V experimental technology wells no longer being used</p>			



# Permit Application Checklist

- EPA Guidance Document  
*Underground Injection  
Control Program Class VI  
Implementation Manual  
for UIC Program  
Directors, EPA 816-R-18-  
001*



Geologic Sequestration of Carbon  
Dioxide

Underground Injection Control (UIC)  
Program Class VI Implementation  
Manual for UIC Program Directors

# Permit Application Review Team

1. Site Characterization: geologists, hydrogeologists, geochemists log analysts/experts to review geologic data submitted with the permit application.
2. Modeling: hydrogeologists and environmental/reservoir modelers to evaluate the models that will be used to delineate the AoR.
3. Well construction and testing: well engineers, log analysts/experts, geologists to review well construction information and the results of well testing that will be performed during construction of the injection well.

# Permit Application Review Team

4. Finance: to review the financial responsibility demonstration, including cost estimates and the proposed financial instruments – personnel who are familiar with financial responsibility as well as accountants and economists.
5. Risk analysis: to evaluate emergency and remedial response scenario probabilities and remediation cost estimates submitted with the Emergency and Remedial Response Plan.
6. Policy, legal and regulatory expertise: UIC program and the Class VI Rule to evaluate compliance with Class VI Rule requirements.

# Class VI, Permit Application

- ◆ Application Review by staff: 60 days (Regulatory timeframe allotted for completeness review)
  - Senior Geologist: Technical Review – geology, area of review: 40 hours
  - Senior Geologist: Technical Review – corrective action measures, geophysics, geochemistry: 40 hours
  - Two Mid-Level Geologist: Technical Review – geology, area of review, corrective action measures, geophysics, geochemistry, other permit application items as defined in the UIC Program Class VI Implementation Manual: 180 hours combined
- ◆ Financial Assurance:
  - Economist: 10 hours
  - Groundwater Section Manager: 10 hours
- ◆ Model Review:
  - Senior Geologist: Review and Meet with operator to go over model: 40 hours
  - Consultant support: 40 hours

# Class VI, Permit Application (cont)

- ◆ Draft Permit:
  - Junior Level Staff to draft permit: 80 hours
  - Mid-Level Geologist: 40 hours
  - Senior Geologist: Permit Review: 30 hours
  - Groundwater Section Manager: 20 hours
  - IPS Support: 5 hours
- ◆ Public participation:
  - Groundwater Section Manager: 15 hours
  - Senior Geologist: 15 hours
  - Mid-level Geologist: 15 hours
- ◆ Public Notice 60 days
- ◆ Public Hearing (if requested) 30 days

# Other Areas

- ◆ Data Management
  - A better understanding of the GSDT developed by EPA is needed.
  - Track Permitting, monitoring, other regulatory requirements for compliance.
  
- ◆ Reporting
  - Forms, frequency of reporting
    - Developed as part of the primacy package
    - Permit conditions

# Other Areas (cont)

- ◆ Field Process
  - Testing, Inspection, monitoring – these are set as permit conditions.
  
- ◆ Financial Assurance
  - Liability Insurance
  - Financial Assurance
  - Special Revenue Account

# Conclusion

- ◆ Primacy process
- ◆ What does the program look like after primacy?
  - Do we have what we need to review an application?
    - Staff, consultants
    - Computer Hardware/Software
- ◆ What is required in the Rules?
- ◆ Use Checklist as a guide.