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To: Senator Jeff Steinborn, Chair, Radioactive and Hazardous Materials Committee
Through: Paul Estok, Staff Attorney, Legislative Council Service
From: Ben Shelton, Deputy Secretary, Energy, Minerals and Natural Resources Department

Re: Carbon Dioxide (CO_2) Sequestration - Class VI Primacy

Questions provided by Paul Estok on behalf of Chair Steinborn in October 2025 following the briefing on Class VI Primacy for New Mexico to the Radioactive & Hazardous Materials Committee on September 2, 2025. The briefing was given by Ben Shelton, Deputy Secretary, Energy, Minerals and Natural Resources Department (EMNRD) and Albert Chang, Director, Oil Conservation Division, EMNRD.

A Class VI injection program represents the most recent addition to the series of underground injection control (UIC) permits issued by the U.S. Environmental Protection Agency (EPA) governing subsurface waste injection. Class VI permits specifically regulate the injection of CO_2 for the purpose of long-term geologic sequestration.

1. How many CO_2 sequestration sites are there in New Mexico at this time?
At present, there are no operational sites in New Mexico dedicated exclusively to the geologic sequestration of CO_2. This type of storage activity requires authorization under a Class VI Underground Injection Control (UIC) permit, which remains under the jurisdiction of the U.S. Environmental Protection Agency (EPA) in New Mexico. Currently, one Class VI permit application is under review by EPA Region 9 for a proposed site located in the San Juan Basin (more information on this below).

Separately, CO_2 is co-injected in 27 injection wells in New Mexico under a different regulatory category. These wells, known as Acid Gas Injection (AGI) wells, are permitted through the Class II UIC program administered by the New Mexico Oil Conservation Division (OCD). AGI wells are classified separately from Class VI, as the CO_2 (and associated hydrogen sulfide) is an oil and gas waste product resulting from the processing of natural gas. As a result, these wells are designed, constructed, and monitored to meet safety and performance standards that are broadly consistent with those applied to Class VI wells. This is especially true in New Mexico, where the OCD has applied higher standards than other states for decades, such as:

- **Stricter pressure limits**: New Mexico caps injection pressure at 0.2 pounds per square inch per foot of depth, compared to 0.5 in Texas. This lower pressure reduces risk of fractures or leaks.

- **Extra protective tubing**: Wells must have 300 feet of corrosion-resistant tubing and casing above the packer[1], adding a buffer against equipment failure.
- **Corrosion-resistant cement**: OCD requires cement that resists chemical breakdown, ensuring long-term well integrity.
- **Mandatory subsurface safety valves**: New Mexico requires underground automatic shut-off devices that can quickly stop the flow of injected gas if pressure, equipment, or integrity problems occur. These valves act as a fail-safe barrier, protecting groundwater and surface environments from sudden releases. Texas does not require them, meaning operators there rely solely on surface-level controls. By mandating subsurface valves, New Mexico adds an extra layer of protection that reduces both environmental risk and potential liability for the state.
- **High-grade packers**: OCD mandates inconel (a nickel-based alloy) packers, which are far more durable than the carbon steel allowed in Texas.

Box 1: Case Study - Four Corners Carbon Capture, LLC

There is currently one Class VI permit application in New Mexico under review by the EPA. The applicant, Four Corners Carbon Capture, LLC (a subsidiary of Tallgrass Energy), proposes a carbon storage hub in San Juan County. The project builds on CarbonSAFEstyle efforts to characterize the San Juan Basin for commercial scale CO_2 storage. This includes detailed geologic and environmental studies at three prospective sites, modeling of interactions with existing saltwater disposal and other storage projects, and preparation of an Environmental Information Volume to address NEPA requirements. The characterization program is designed to demonstrate that each site could safely store at least 50 million tons of CO_2, supported by risk mitigation planning and pipeline feasibility studies. Importantly, the complexity of this process underscores the value of New Mexico pursuing Class VI primacy, which would provide regulatory consistency for projects across administrations and ensure that permitting decisions reflect state-level standards and priorities rather than shifting federal approaches (i.e., Fast 41).

2. Are any of those sites operating at this time?

There are zero Class VI wells conducting injection operations in New Mexico at this time.

Currently, there are 15 active AGI wells in the NM OCD database, with 27 total AGI wells permitted. All are located in the southeast New Mexico in the Permian Basin in Lea and Eddy counties (see map below).

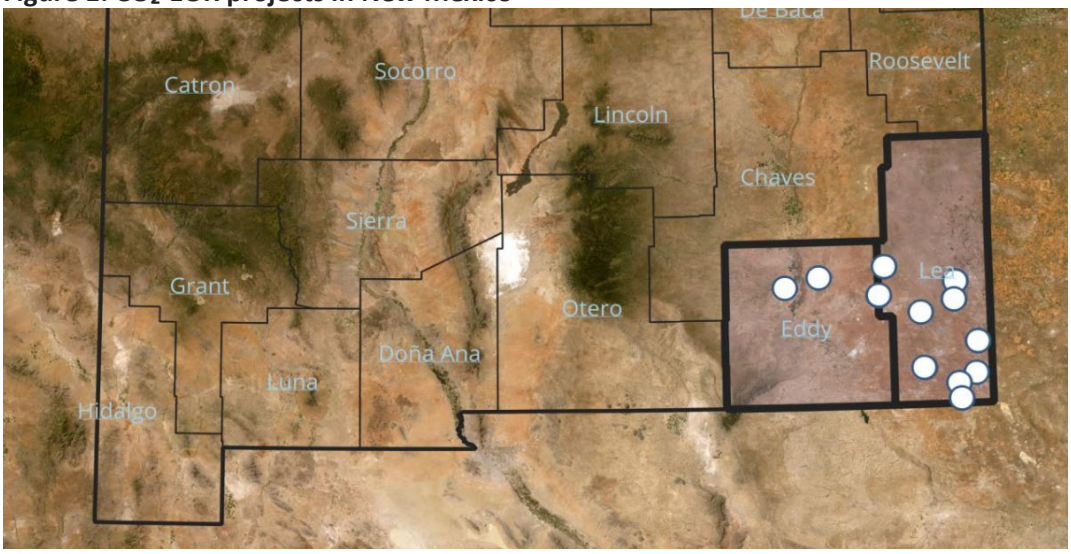
The UIC Class II program also allows for injection of CO_2 into oilfields to enhance the recovery of oil. These formations are distinct from permanent geologic sequestration sites, and are not eligible for Class VI.

There are 4 CO_2-EOR projects in New Mexico (per Advanced Resources International's U.S. CO_2-EOR Survey of 2023)

- Maverick, East Vacuum field.
- MorningStar, Central Vacuum field.
- Occidental, North Hobbs field.
- Occidental, South Hobbs field.

[1] A "packer" is a downhole sealing device placed inside a well to isolate sections of the casing and production tubing. It creates a secure barrier that prevents fluids or gases from migrating between zones, protects the casing from pressure and corrosion, and ensures that injection or production flows only where intended

Figure 1: CO_2-EOR projects in New Mexico



Source: New Mexico Tech, PRRC

3 & 4. Have environmental regulators done any research on what the cost to maintain CO_2 sites is?

Extensive research has been done by the U.S. EPA and other states that have received primacy, to determine reliable assessments for maintaining Class VI sites post-closure. Additionally, industry has had decades of experience demonstrating effective measures to maintain sites where CO_2 has been injected. CO2 has been used in the EOR (enhanced oil recovery) fields for decades and is also currently injected extensively in Acid Gas Injection (AGI) wells, both instances have been in operation in NM for decades.

It is an EPA requirement for Class VI permit applicants to include financial assurance cost estimates in their applications. All EPA requirements must be adopted by NM in the primacy application as minimum standards. These estimates do not cover all operational costs but include expenses for well plugging, post-injection monitoring, potential emergency and remedial response, and site closure. Cost estimates are project-specific and typically range from $10 million to $75 million, depending on project size and other factors. These financial assurance requirements ensure that the applicant, not the state, bears the cost of well plugging, postinjection monitoring, site closure, and emergency response from first injection to the first 5-years post closure.

Table 1: Class VI financial Assurance Cost Estimates By Activity

Activity	Typical Cost Range	Site-Specific Factors
Corrective Action on Abandoned Wells	$0.1M to $4M	Number of abandoned wells requiring corrective action
Injection Well Abandonment	$0.2M to $4M	Number of injection wells and depths
Post-Injection Site Care (50 yr monitoring window)	$2M to $30M	Length of post-injection monitoring period, monitoring methods
Site Closure	$0.5M to $2M	Number of project monitoring wells
Emergency and Remedial Response	$7M to $55M	Project footprint size, injection duration and volume, proximity to population centers, natural hazard risks, drinking-water aquifers proximity and depth, cost estimation method

**The table is a general breakdown by the cost categories required in Class VI permit financial assurance demonstrations supplied to the EPA. This information was compiled by one of OCD's consultants who has a strong history regarding Class VI applications.*

**These figures represent a mid-point of a 30 MMT injection site.*

Sources: See Appendix A

Because Class VI projects span multiple decades and the U.S. Class VI regulations were only finalized in 2010, **very few sites have progressed to closure, limiting the availability of direct examples**. However, the EPA and states that have primacy such as Louisiana, North Dakota, Texas, Wyoming, West Virginia, Arizona have generated useful data on both operational and closure costs that can be referenced in New Mexico's primacy actions. Information on the closure and maintenance of AGI well sites in New Mexico also provides valuable insight.

Additional points:
Drilling and completing a Class VI CO_2 injection well requires rigorous engineering to ensure safe, long-term storage of CO_2, while protecting underground water resources. While these two well classes are distinct, New Mexico has a sizable inventory of Class II wells which all carry CO_2, demonstrating a long history of safely managing CO_2.

Mature oil and gas fields provide useful information for geologic CO_2 storage, such as extensive characterization data, operational experience, and existing surface/downhole infrastructure. Extensive datasets are utilized to determine which site may be suitable for CO_2 storage and to identify potential risks.

Additional Materials for your review:

1. Approaches to Long-Term Liability of Class VI Injection: https://carboncaptureready.betterenergy.org/wp-content/uploads/2024/07/Long-Term-Liability.pdf
2. Monitoring and Salient Features: https://netl.doe.gov/sites/default/files/2018-02/FE00006821-Class-VI-Injection-Permit--Salient-Features-and-Regulatory-Challenges_Final.pdf
3. Class VI Well One-Pager: https://carboncapturecoalition.org/wp-content/uploads/2025/09/Class-VI-wells-fact-sheet-1.pdf

Appendix A: Class VI financial Assurance Cost Estimates Citations

1. Patrick Engineering, "Cost Estimate to Demonstrate Financial Responsibility for Class VI UIC Permit", https://yosemite.epa.gov/OA/eab_web_docket.nsf/Attachments%20By%20ParentFilingId/12C3D367455FA38685257D820071C16B/$FILE/B-1%20FG%20Permit%20App%203.2013%20pt.%2012%20AR%20%23%201.pdf
2. ADM, "Financial Responsibility Plan", https://www.epa.gov/system/files/documents/2023-07/ADM_Maroa_Cost_Estimates.pdf
3. 40 CFR 144.62, https://www.ecfr.gov/current/title-40/section-144.62
4. Wabash Carbon Services, "Class VI Project Review of Financial Responsibility Information", https://yosemite.epa.gov/oa/eab_web_docket.nsf/Attachments%20By%20ParentFilingId/4B2354A8B9B3688685258B1C0042C4DE/$FILE/Attachment%208_AR_69_Wabash%20FR%20review%20from%20CADMUS.pdf
5. U.S. Department of Energy, "NETL CO2 Injection and Storage Cost Model", https://netl.doe.gov/projects/files/NETLCO2InjectionandStorageCostModel_020712.pdf
6. Ground Water Protection Council, "Class VI Financial Assurance Valuation", https://www.gwpc.org/wp-content/uploads/2023/08/Burton-Class-VI-CCUS.pdf
7. River Parish Sequestration, LLC, "RFP for Class VI ERR Cost Estimation River Parish Sequestration Project", https://riverparishseq.com/wp-content/uploads/2024/11/RPS-Class-VI-ERR-RFP.pdf