United States Energy Association

U.S. Class VI Permitting and State Primacy

OVERVIEW

Class VI well permitting has become one of the defining factors in the pace of U.S. carbon storage deployment. Designed for geologic sequestration of CO_2, Class VI wells are regulated under the U.S. Environmental Protection Agency's (EPA) Underground Injection Control (UIC) program, which is tasked with protecting underground sources of drinking water (USDWs). Since the program's creation in 2010, EPA has granted final primacy approval, the authority for a state to run and enforce its own Class VI program under EPA oversight, to five states: North Dakota (2018), Wyoming (2020), Louisiana (2023), West Virginia (2025), and Arizona (2025). Texas is proposed for primacy in 2025 but remains under EPA implementation until final rulemaking is completed. In the rest of the country, EPA regional offices continue to directly manage Class VI permitting by reviewing applications, issuing permits, and overseeing compliance. To enhance transparency, EPA maintains a public Class VI Permit Tracker and dashboard that provides updates on project status, timelines, and milestones.

As of August 2025, developers plan around two parallel pathways: (1) federal permitting in EPA-implemented states, and (2) state-run permitting in primacy states. The EPA targets approximately 24 months from complete application to final permit decision. However, a July 2025 report from the EPA Office of Inspector General (OIG) found the agency is not on track to meet this goal portfolio-wide, highlighting the importance of mature state programs for predictable timelines.

CLASS VI WELLS AND GEOLOGIC SEQUESTRATION (GS)

What are Class VI wells?

- Under the EPA's Underground Injection Control (UIC) program, Class VI wells are specifically designed to inject CO_2 into deep rock formations (typically around one mile underground) for long-term underground storage, known as geologic sequestration (GS).

Purpose and Role in Emissions Reduction:

- These wells are a crucial part of the broader carbon capture and storage (CCS) strategy, helping reduce CO_2 emissions by securely storing captured CO_2 underground.

Sources of CO_2 for Geologic Sequestration:

- CO_2 used in GS may come from:
  - Industrial facilities (i.e., steel, cement), and energy-related operations (i.e., ethanol or hydrogen production, power plants).
  - Direct air capture, where CO_2 is captured directly from the atmosphere.

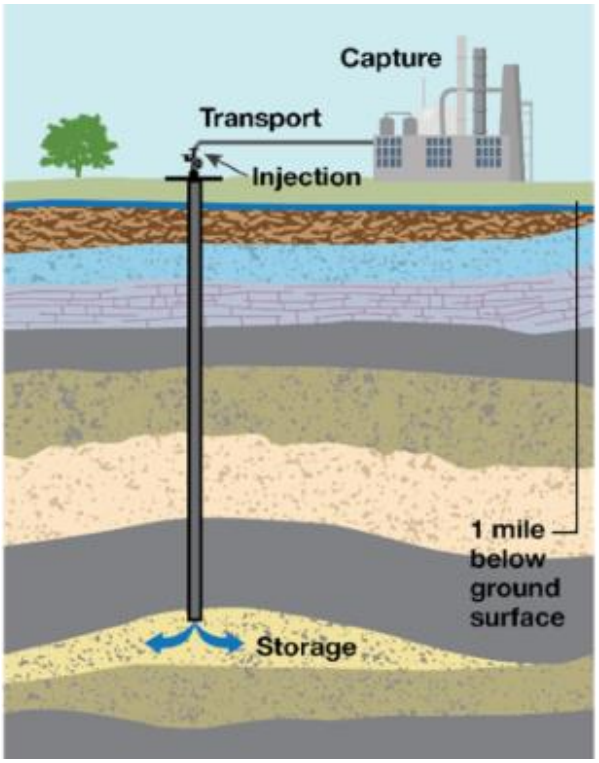


Image 1: Class VI Injection Wells Inject Carbon Dioxide for Long-Term Storage, Environmental Progrection Agency

WHAT CLASS VI COVERS—AND WHY IT MATTERS

Class VI wells must meet stringent requirements to address CO_2's buoyancy, mobility, corrosivity, and large injection volumes. These requirements include siting, area-of-review modeling, well construction, testing, monitoring, financial responsibility, and post-injection site care. By design, every element of the Class VI program works to ensure safe, long-term storage and minimize risks to underground resources. The EPA also maintains public data on applications, draft permits, final permits, and monitoring reports to promote transparency.

PROTECTING DRINKING WATER RESOURCES

These Class VI safeguards are rooted in the Safe Drinking Water Act (1974), which established the EPA's Underground Injection Control (UIC) Program. The program regulates the injection of fluids, including CO_2, into the subsurface to protect underground sources of drinking water. Protections include rigorous site selection to ensure suitable geology, predictive modeling of CO_2 plume behavior, well construction standards to prevent leaks, and the use of corrosion-resistant materials tailored to site conditions. After injection, continuous testing and monitoring safeguard well integrity, groundwater quality, and plume movement. Operators must also demonstrate financial responsibility for corrective action plans, well closures, and long-term care, and maintain emergency and remedial plans.

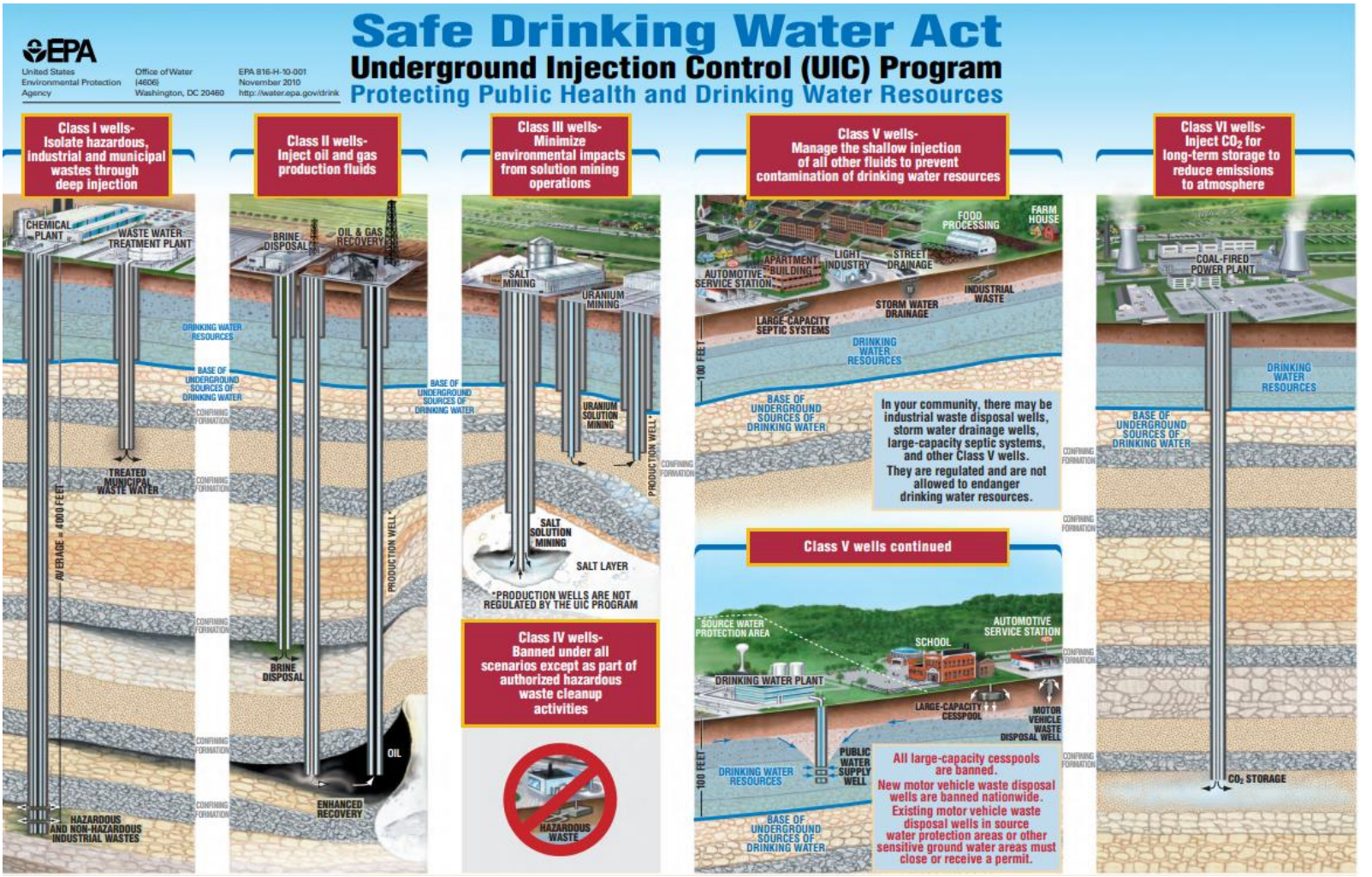


Image 2: Safe Drinking Water Act, Underground Injection Control Program, United States Environmental Protection Agency

CLASS VI WELL PERMITS AND CURRENT PIPELINE

As of September 2025, EPA has issued 11 final Class VI well permits, with additional draft permits pending. Primacy states have taken on a growing share of permitting, with North Dakota (8) and Wyoming (9) have collectively issued 17 permits. Louisiana (primacy granted in 2023), West Virginia and Arizona (primacy granted in 2025) have not yet granted any permits. Applications under EPA review number in the hundreds and continue to rise, according to EPA's public dashboard and permit tracker (last updated in August 2025). The tracker details active projects, review phases, and applicant-related delays.

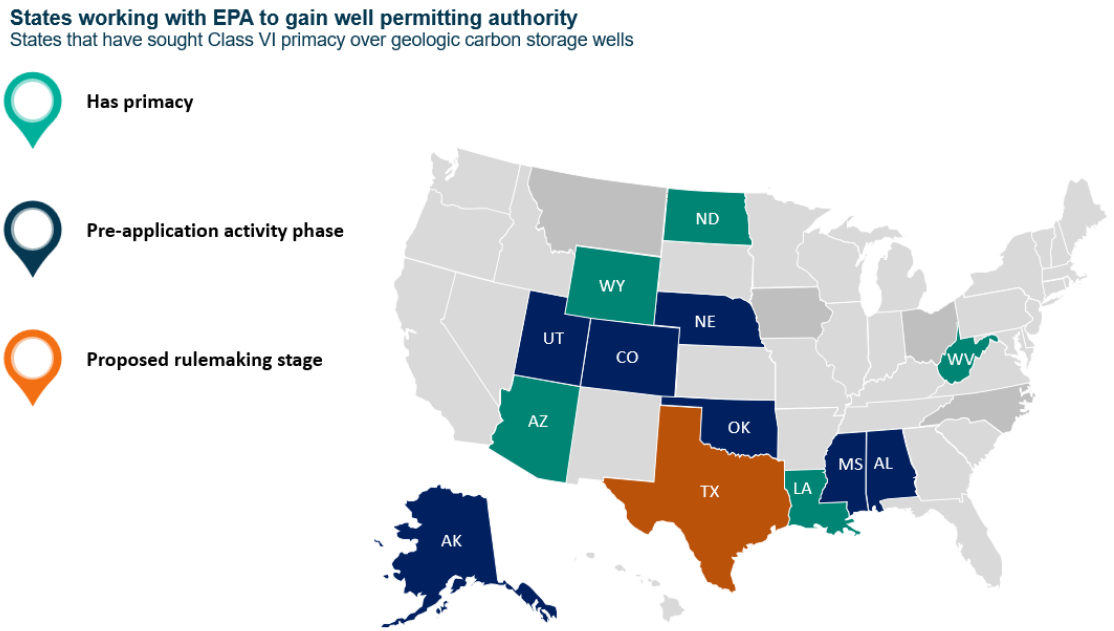
STEP-BY-STEP PATH TO A CLASS VI PERMIT

Whether EPA-issued or in a primacy state, the following is a step-by-step path towards a Class VI permit:

1. **Early engagement (pre-application)**: Meet with the permitting authority to scope the project, data needs, and schedule. Recommended in EPA guidance and commonly done before filing.
2. **Site characterization & geologic assessment**: Collect and analyze geologic, hydrogeologic, geomechanical, seismic, and wellbore data for the proposed injection and confining zones; prepare the geologic assessment required in the application.
3. **AoR delineation & corrective action plan**: Model the CO_2 plume and pressure front to delineate the Area of Review (AoR); identify legacy wells and other penetrations and propose corrective actions to prevent leakage pathways.
4. **Develop required plans & demonstrations**: At a minimum, the application must include the following:
   - Testing & Monitoring Plan (i.e., Mechanical Integrity Test (MIT), pressure, groundwater, seismic activity).
   - Financial Responsibility (demonstration of adequate financial assurance, through tools such as insurance policies, letters of credit, trust funds, or surety bonds, kept in force throughout all project phases).
   - Plugging Plan (ensures the well is permanently secured and that no pathways remain for CO_2 to escape to the surface or into underground sources of drinking water).
   - Post-Injection Site Care & Site Closure Plan
   - Emergency & Remedial Response Plan
5. **Submit the Class VI permit application**: Provide the full package of information (maps, cross-sections, modeling, plans, etc.).
6. **Administrative review & RAIs**: The authority checks completeness and issues Requests for Additional Information (RAIs), as needed. EPA aims to decide witihin 24 months after an administratively complete application, but timing depends on project complexity and applicant responsiveness.
7. **Draft permit & public notice**: If the project meets requirements, the authority issues a draft permit and fact sheet, opens a public comment period (minimum 30 days), and may hold a hearing.
8. **Response to comments & permit decision**: The authority prepares a Response to Comments and issues the final permit decision (issue or deny).
9. **Appeal (if any)**: Eligible participants may appeal to EPA's Environmental Appeals Board (EAB); petitions are due within 30 days of notice of the final decision.
10. **Post-issuance prerequisites (before injection)**: Satisfy permit conditions (e.g., finalize corrective actions, demonstrate financial responsibility, complete baseline monitoring, pass mechanical integrity tests) and obtain written authorization to commence injection.

The main differences between EPA-issued and state-primacy Class VI permits lie in who manages the process, how quickly it moves, and how appeals are handled. In EPA-implemented states, the regional EPA office (there are 10 EPA regions, each with a regional office) issues permits, which can take longer (often three to five years) due to national-level review and staffing demands. In primacy states, permitting is managed by the state agency (such as North Dakota's Industrial Commission or Louisiana's Department of Natural Resources), and timelines are often shorter because states integrate Class VI into existing oil and gas programs and have deeper familiarity with local geology. Appeals of EPA permits go to the Environmental Appeals Board, while state-issued permits follow the state's own administrative or judicial process. States may also add their own requirements or place greater emphasis on local stakeholder engagement beyond federal minimums.

STATE PRIMACY LANDSCAPE



States with Final Class VI Primacy:

- **North Dakota**: Primacy was granted in 2018. The state administers a two-step permitting structure: first approving storage facility permits followed by individual Class VI well permits.
- **Wyoming**: Primacy was granted in 2020; began issuing Class VI permits in December 2023.
- **Louisiana**: Primacy was granted in December 2023 (effective February 2024). As of June 2025, Louisiana's Department of Natural Resources public Class VI page stated no Class VI projects had been approved yet under the state program; applications continue to transition and move through the department's review.
- **West Virginia**: Primacy was granted in February 2025 (effective March 2025), program authority now rests with the West Virginia Department of Environmental Protection.
- **Arizona**: Primacy granted on September 10, 2025. EPA will oversee Arizona's administration of its UIC program and will remain the permitting authority for all well classes on Indian lands within the State, except for Class II wells on Navajo Indian lands for which EPA has granted the Navajo Nation primacy.

Proposed for Class VI Primacy in 2025 (pending final rule):

- **Texas**: On June 9, 2025, the EPA issued a proposed rule to grant Texas primacy over Class VI wells, allowing the Railroad Commission of Texas to oversee permitting and enforcement. A virtual public hearing was held on July 24, 2025, and the public comment period closed on August 1, 2025.
- Several states are in the pre-application phase of seeking Class VI primacy from the EPA. This stage indicates that state regulators are actively coordinating with EPA to prepare their legal, technical, and administrative frameworks but have not yet submitted a formal application or entered the federal rulemaking process.
- **Utah, Colorado, and Nebraska** are advancing discussions with EPA to build regulatory capacity, particularly important given their roles in regional CO_2 transport and storage corridors.
- **Oklahoma** is exploring primacy to align with its oil and gas regulatory expertise, which could streamline Class VI permitting for its developing CCS industry.
- **Mississippi and Alabama** are in early coordination with EPA, reflecting growing CCS interest in the Gulf Coast region, which already hosts significant CO_2 pipeline infrastructure and enhanced oil recovery projects.

These states' pre-application efforts highlight the expanding interest in local control over Class VI permitting, though they remain under direct EPA oversight until formal applications are submitted and approved.

TIMELINES, BOTTLENECKS, AND WHAT'S CHANGING

EPA continues to formally target a 24-month timeframe from administrative completeness to permit issuance, but actual timelines often stretch to three to five years. As confirmed by the agency's Office of Inspector General, a significant portion of applications (roughly one in five) now exceed the 24-month goal, in some cases by well over 200 days. The most substantial delays frequently stem from factors outside EPA's direct control, including multilateral reviews under the Endangered Species Act or National Historic Preservation Act, and verifying pore space or mineral rights in complex regulatory environments. These external factors, combined with applicant-related delays such as incomplete submissions or additional data requests, create unpredictability in the overall permitting timeline.

In response, both EPA regions and primacy states are piloting changes to accelerate the process without lowering standards. Early technical workshops between applicants and regulators now allow key geological and engineering questions to be resolved before formal submission. Some agencies are experimenting with parallel review tracks, where financial responsibility, well construction, and geologic modeling are evaluated simultaneously rather than sequentially. Others are deploying digital platforms for real-time document exchange, replacing the paper-heavy processes that have historically slowed review.

The following examples illustrate how some states are addressing the challenges:

- North Dakota has streamlined its process by front-loading legal and geologic review through a Storage Facility Permit, allowing individual well permits to move faster.
- Louisiana is building internal guidance to align Class VI reviews with existing oil and gas processes, reducing duplication.
- West Virginia, though new to primacy, has already dedicated staff exclusively to Class VI permitting, ensuring CCS projects are not competing with other UIC classes for attention.

These innovations are gradually shaping a more predictable national permitting landscape.

LOOKING AHEAD—WHAT TO WATCH

The remainder of 2025 is poised to be a turning point for Class VI permitting. **Arizona's recent approval as the fifth state with Class VI primacy** underscores the accelerating momentum toward state-led programs. The final primacy decision for Texas will be another landmark, signaling whether this energy giant state can take control of its own reviews and streamline timelines. At the same time, Louisiana and West Virginia are expected to issue their first state-led Class VI permits, providing an early test of how quickly new programs can mature.

At the federal level, EPA Region 6 remains one to watch, with additional draft and final permits (such as ExxonMobil's Rose wells in Texas) expected to move forward. More broadly, stakeholders will track how EPA responds to the July 2025 OIG report, which called out permitting delays and urged improvements in staffing, milestone tracking, and procedural transparency. Any concrete changes, such as new guidance on RAIs or expanded use of digital application tools, could affect the pace of reviews.

Ultimately, the outlook for late 2025 hinges on three questions: Will primacy continue to expand to Texas? Can new state programs demonstrate efficiency without compromising safeguards? And will EPA close the gap between its 24-month target and the longer timelines experienced to date? How these issues play out will determine whether the U.S. permitting system can provide the predictability needed to unlock the next wave of CCS investment.

SOURCE LIST

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https://www.epa.gov/uic/class-vi-wells-used-geologic-sequestration-carbon-dioxide

EPA Class VI Permit Tracker – Status of EPA-issued permits
https://www.epa.gov/uic/class-vi-permit-tracker

EPA Dashboard: Current Class VI Projects under Review
https://www.epa.gov/uic/current-class-vi-projects-under-review

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EPA News Release – West Virginia Class VI primacy
https://www.epa.gov/newsreleases/epa-grants-west-virginia-class-vi-primacy

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https://www.federalregister.gov/documents/2025/05/19/class-vi-primacy-arizona

EPA Press Release – Texas primacy proposal
https://www.epa.gov/newsreleases/epa-proposes-class-vi-primacy-texas

EPA Office of Inspector General – Report on Class VI permitting timelines
https://www.epaoig.gov/reports/epa-class-vi-permitting-timeliness

EPA Press Release – Arizona Primacy Granted
https://www.epa.gov/newsreleases/epa-grants-arizona-primacy-protect-underground-water-resources

Carbon Capture Coalition – Class VI permit status summary
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https://www.iogp.org

State Agency Resources:
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Wyoming Department of Environmental Quality
https://deq.wyoming.gov

Louisiana Department of Natural Resources
https://www.dnr.louisiana.gov

IMAGE SOURCE LIST

Image 1
U.S. Environmental Protection Agency. (n.d.). *Class VI Injection Wells: Inject Carbon Dioxide for Long-Term Storage*. In Underground Injection Control (UIC) Program. https://www.epa.gov/uic/class-vi-wells-used-geologic-sequestration-carbon-dioxide

Image 2
Louisiana Department of Natural Resources. (n.d.). *EPA Poster of Wells*. Underground Injection Control Section. http://www.dnr.louisiana.gov/assets/OC/im_div/uic_sec/EPAposterofwells.pdf