



Update on Implementation of EPA's Class VI Geologic Sequestration Program

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UIC Program Background

- 1974 Safe Drinking Water Act (SDWA; reauthorized in 1996)
 - Federal regulations to ensure protection of Underground Sources of Drinking Water (USDWs)
- USDWs are defined as
 - Any aquifer or portion of an aquifer that contains water that is less than 10,000 ppm total dissolved solids or contains a volume of water such that it is a present, or viable future source for a Public Water Supply System
- The UIC Program regulates injection of **all fluids** – liquid, gas, or slurry
 - Some natural gas storage, oil and gas production, and hydraulic fracturing fluids are exempted



Class VI Rule Background

Considerations for GS

- Large Volumes
- Buoyancy
- Viscosity (Mobility)
- Corrosivity



UIC Program Elements

- Site Characterization
- Area of Review (AoR)
- Well Construction
- Well Operation
- Site Monitoring
- Post-Injection Site Care
- Public Participation
- Financial Responsibility
- Site Closure

New well class established:
Class VI



Class VI Rule Background

- October 2007 – 2010:
 - Proposal development and publication
 - Notice of Data Availability development and publication
 - Response to comments and rule finalization
- December 10, 2010:
 - Final rule publication
- December 10, 2010 – September 6, 2011:
 - 270 day primary enforcement responsibility (primacy) application period for States



Class VI Rule Implementation

- September 7, 2011:
 - EPA directly implements the Class VI Program in all States, Tribes, and Territories
 - All GS permit applicants must submit applications to the EPA (Regions)
 - EPA, as the Class VI permitting authority, will determine the appropriate type of UIC permit
 - A *Federal Register* Notice (76 FR 56982; September 15, 2011) clarifies this information



Class VI Rule Implementation

- Class VI wells
 - Used for GS of CO₂
- Class V experimental technology wells
 - Used to test new, novel injection technologies when other well classifications (e.g., I, II, III, IV, or VI) are technologically infeasible to apply; and,
 - Used when another well class does not adequately address environmental risks posed by an injection project



Class VI Rule Implementation

- EPA has received permit applications and inquiries from potential GS owners or operators
- Class VI permitting activities
 - Region 4
 - Region 5
 - Region 8



Class VI Rule Implementation

- Guidance document development
 - Public participation and environmental justice (final)
 - Financial responsibility (final)
 - Well construction (pending post)
 - Project plan development (pending post)
 - Area of Review and corrective action
 - Site characterization
 - Primacy application and implementation manual



Class VI Rule Implementation

- Guidance document development
 - Testing and monitoring
 - Injection depth waivers
 - Class II – Class VI transition
 - Well plugging, post-injection site care, and site closure
 - Class V experimental technology wells
 - Reporting and recordkeeping
- Technical, subject-specific GS webinars will commence in 2012



Class VI Rule Implementation

- GS data system development
 - 40 CFR 146.91(e): Owners or operators must submit **all required reports, submittals, and notifications** under subpart H of this part **to EPA in an electronic format** approved by EPA
 - EPA is developing a data system to receive information and support permitting, reporting, recordkeeping, and other activities over the life of a GS project
 - Designed to minimize redundancy, streamline reporting, and inform the adaptive rulemaking approach



Class VI Rule Implementation

- States may apply for Class VI primacy at any time
 - States that currently do not have primacy or have Class II primacy only under § 1425 must submit a new § 1422 primacy application for Class VI
 - States that currently have § 1422 primacy for Classes I, II, III and V, must submit a program revision to add Class VI



Class VI Rule Implementation

- Core elements of a primacy application
 - State's Class VI regulations
 - Program description
 - Governor's letter
 - Attorney General's statement
 - Memorandum of Agreement (State and EPA)
 - Memorandum of Understanding



Class VI Rule Implementation

- Coordination
 - EPA Program Offices and Regions
 - Federal partners
 - Non-governmental organizations
 - Industry and other stakeholders
- CCS Presidential Task Force work
 - Long-term liability and stewardship



Additional Information

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- **References**

- http://water.epa.gov/type/groundwater/uic/wells_sequestration.cfm
- <http://www.gpo.gov/fdsys/pkg/FR-2010-12-10/pdf/2010-29954.pdf>
- <http://www.gpo.gov/fdsys/pkg/FR-2011-09-15/pdf/2011-23662.pdf>