Trends in Permitting of Class V Wells in Alabama

GWPC Conference October, 2014
The State of Alabama received primacy from EPA for the UIC program in 1982.
Primacy Shared Between

- Alabama Department of Environmental Management
- Alabama State Oil and Gas Board
Federal UIC Program Authority

- Authorized by the federal Safe Drinking Water Act

Alabama UIC Program Authority

- Provided by the Alabama Water Pollution Control Act
Alabama Water Pollution Control Act

• Requires obtaining a permit for a discharge of pollutants to “waters” of the state.

• The definition of “waters” in this statute includes groundwater.
“Injection” as defined in ADEM’s regulations means the subsurface emplacement of fluids and/or pollutants through a well.
“Well” is defined as

- a borehole;
- drilled or driven shaft;
- a dug hole;
- an improved sinkhole;
- a subsurface fluid distribution system;
- a cesspool;
- a drywell; or
- any other system which results in subsurface emplacement of fluids and/or pollutants.
Underground Sources of Drinking Water (USDW)

“All aquifers or portions of aquifers partially or wholly within the State of Alabama which supply water for human consumption, and all aquifers or portions of aquifers partially or wholly within the State of Alabama in which the groundwater contains less than 10,000 mg/l of total dissolved solids, are designated underground sources of drinking water and shall be protected from pollution.”
Alabama’s UIC regulations are consistent with EPA’s, in defining six types of injection wells:

- Class I injection (below USDW)
- Class II oil and gas
- Class III solution mining
- Class IV hazardous waste into a USDW
- Class V generic class
- Class VI injection of CO2 for storage
Prohibition of Adverse Effect on Ground or Surface Water Quality

“Any injection activity, from any well type, that may result in groundwater concentrations in a USDW exceeding primary or secondary drinking water standards, or which may result in a surface water of the state failing to meet applicable water quality criteria, or which may otherwise adversely affect the health of persons or other legitimate beneficial uses of a water of the state is prohibited.”

Reference Rule 335-6-8-.05(d)
Active Permit Universe

Class III Wells  1 permitted well field

Class V Wells  350 permits
Sanitary Sewage WWTPs 25%
Groundwater Remediation Systems 25%
Commercial and Industrial 50%
Permit Requirements
Injection Well Facilities
Class V Wells
Residential Sanitary Sewage WWTP
Injection Well Facilities
Class V Wells

Residential Sanitary Sewage WWTP
Injection Well Facilities
Class V Wells

Large Poultry Processor
Injection Well Facilities
Class V Wells

Groundwater/Soil Remediation
Trends in Permitting in Alabama

• Financial Responsibility

• Higher Volumes for Systems Being Permitted

• Consequence of Higher Nitrate Loading from Non-Compliant Systems

• Program Funding
Rule 335-6-8-.10 (4)

A permit application for discharge of treated sanitary waste must include demonstration of compliance with any applicable requirement for financial viability certification.

This requirement is satisfied through a financial evaluation and certification provided through the Alabama Public Service Commission.
Higher Volumes

Permitted Sanitary Sewage Wastewater Treatment System Volumes

Range from 0.015 to 1.2 MGD

Systems Below 0.015 MGD are Permitted by the Alabama Department of Public Health
Over the last 3 Year Time Period

- 7 of 88 Sanitary Wastewater Treatment Systems Have Had Ground Water Nitrate Violations
- 13 Ground Water Violations of 10 mg/l Permit Limit
- Volume of Discharges Ranged from 0.015 MGD to 0.265 MGD
- Because of Permitting and Enforcement All Systems Have Been Returned to Compliance
Higher Nitrate Loading from Non-Compliant Systems

Without a requirement for permitting, groundwater monitoring, and subsequent enforcement, these volumes and groundwater concentrations could present a significant threat to public health.
Program Funding and Staffing

• EPA Funding – Only adequate to support one Environmental Scientist
• ADEM receives a 4% fee on all gross receipts of permitted sanitary wastewater treatment systems (Totals less than half a work year for Environmental Scientist).
• Class V Permit Fee is $3575 for a 5 year permit, plus a $1340 greenfield fee.
• Program Staffing – 2 Geologists; 1 Environmental Scientist; and 1 Supervisor (primarily funded through other programs they supervise)
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