

**TRANSMITTAL SHEET FOR  
NOTICE OF INTENDED ACTION**

Control 335 Department or Agency Environmental Management  
Rule No. 335-6-8-.16  
Rule Title: Class VI Well Area of Review and Area of Review Corrective Action

X New          Amend          Repeal          Adopt by Reference

Would the absence of the proposed rule significantly harm or endanger the public health, welfare, or safety? YES

Is there a reasonable relationship between the state's police power and the protection of the public health, safety, or welfare? YES

Is there another, less restrictive method of regulation available that could adequately protect the public? NO

Does the proposed rule have the effect of directly or indirectly increasing the costs of any goods or services involved and, if so, to what degree? NO

Is the increase in cost, if any, more harmful to the public than the harm that might result from the absence of the proposed rule? N/A

Are all facets of the rulemaking process designed solely for the purpose of, and so they have, as their primary effect, the protection of the public? YES

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Does the proposed rule have an economic impact? NO

If the proposed rule has an economic impact, the proposed rule is required to be accompanied by a fiscal note prepared in accordance with subsection (f) of section 41-22-23, Code of Alabama 1975.

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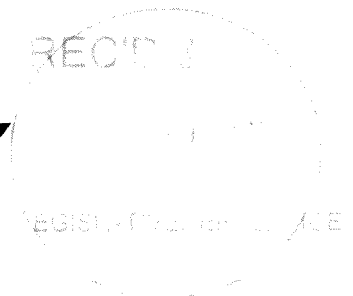
**Certification of Authorized Official**

I certify that the attached proposed rule has been proposed in full compliance with the requirements of Chapter 22, Title 41, Code of Alabama 1975, and that it conforms to all applicable filing requirements of the Administrative Procedure Division of the Legislative Reference Service.

Signature of certifying officer Marilyn Elliott

Date May 20, 2011

Date Filed



APA-2  
11/96

**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
WATER DIVISION**

**NOTICE OF INTENDED ACTION**

**AGENCY NAME:** Alabama Department of Environmental Management

<b>Rule NO.</b>	<b>Title</b>
335-6-8-.01	Purpose
335-6-8-.02	Definitions
335-6-8-.05	Prohibited Actions
335-6-8-.07	Permit Issuance Procedures
335-6-8-.08	Public Notice Requirements
335-6-8-.10	Class V Well Permit Application Requirements
335-6-8-.12	Class V Well Permit Requirements
335-6-8-.13	Class VI Well Applicability and General Requirements
335-6-8-.14	Class VI Well Permit Application and Application Review Requirements
335-6-8-.15	Class VI Well Minimum Criteria for Siting
335-6-8-.16	Class VI Well Area of Review and Area of Review Corrective Action
335-6-8-.17	Class VI Well Financial Responsibility Requirements
335-6-8-.18	Class VI Well Construction Requirements
335-6-8-.19	Class VI Well Logging, Sampling and Testing Requirements Prior to Injection Well Operation
335-6-8-.20	Class VI Well Operating Requirements
335-6-8-.21	Class VI Well Mechanical Integrity Requirements
335-6-8-.22	Class VI Well Testing and Monitoring Requirements
335-6-8-.23	Class VI Well Reporting Requirements
335-6-8-.24	Class VI Well Plugging Requirements
335-6-8-.25	Class VI Well Post-Injection Site Care and Site Closure Requirements
335-6-8-.26	Class VI Well Emergency and Remedial Response Requirements
335-6-8-.27	Class VI Well Permit Requirements
335-6-8-.28	Technical Submittals and Other Reports to the Department
335-6-8-.29	Coordination with EPA
335-6-8-.30	Confidentiality

**INTENDED ACTION:** Revise Division 6 of the ADEM Administrative Code with the addition or amendment of Rules 335-6-8-.01 (Purpose), 335-6-8-.02 (Definitions), 335-6-8-.05 (Prohibited Actions), 335-6-8-.07 (Permit Issuance Procedures), 335-6-8-.08

(Public Notice), 335-6-8-.10 (Class V Well Permit Application Requirements), 335-6-8-.12 (Permit Issuance Procedures), 335-6-8-.13 (Class VI Well Applicability and General Requirements), 335-6-8-.14 ( Class VI Well Permit Application and Application Review Requirements), 335-6-8-.15 (Class VI Well Minimum Criteria for Siting), 335-6-8-.16 (Area of Review and Area of Review Corrective Action), 335-6-8-.17 (Class VI Well Financial Responsibility Requirements), 335-6-8-.18 (Class VI Well Construction Requirements), 335-6-8-.19 (Class VI Well Logging, Sampling and Testing Requirements Prior to Injection Well Operation), 335-6-8-.20 (Class VI Well Operating Requirements), 335-6-8-.21 (Class VI Well Mechanical Integrity Requirements), 335-6-8-.22 (Class VI Well Testing and Monitoring Requirements), 335-6-8-.23 (Class VI Well Reporting Requirements), 335-6-8-.24 (Class VI Well Plugging Plan), 335-6-8-.25 (Post-Injection Site Care and Site Closure Requirements), 335-6-8-.26 (Class VI Well Emergency and Remedial Response Requirements), 335-6-8-.27 (Class VI Well Permit Requirements), 335-6-8-.28 (Technical Submittals and Other Reports to the Department), 335-6-8-.29 (Coordination with EPA), and 335-6-8-.30 (Confidentiality).

**SUBSTANCE OF PROPOSED ACTION:**

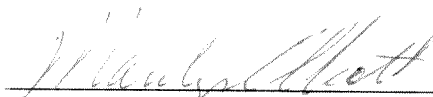
Revisions to the Division 6 Code are being proposed to include requirements for Class VI injection wells, for geologic sequestration of carbon dioxide. The proposed additions and amendments are consistent with the federal regulations for Class VI wells published in the Federal Register on December 10, 2010.

**TIME, PLACE, MANNER OF PRESENTING VIEWS:**

Comments may be submitted in writing or orally at a public hearing to be held 1:00 p.m., July 11, 2011, in the ADEM Hearing Room, 1400 Coliseum Blvd., Montgomery, Alabama 36110.

**FINAL DATE FOR COMMENT AND COMPLETION OF NOTICE:** July 11, 2011

**CONTACT PERSON AT AGENCY:** Sonja Massey (334) 271-7832



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Lance R. LeFleur  
Director

**335-6-8-.16 Class VI Well Area of Review and Area of Review Corrective Action.**

(1) The area of review is the region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity. The area of review is delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected carbon dioxide stream and is based on available site characterization, monitoring, and operational data.

(2) The owner or operator of a Class VI well must prepare, maintain, and comply with a plan to delineate the area of review for a proposed geologic sequestration project, periodically reevaluate the delineation, and perform corrective action that meets the requirements of this section and is acceptable to the Department. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. As a part of the permit application for approval by the Department, the owner or operator must submit an area of review and corrective action plan that includes the following information:

(a) The method for delineating the area of review that meets the requirements of paragraph (3) of this section, including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based;

(b) A description of:

1. The minimum fixed frequency, not to exceed five years, at which the owner or operator proposes to reevaluate the area of review;

2. The monitoring and operational conditions that would warrant a reevaluation of the area of review prior to the next scheduled reevaluation as determined by the minimum fixed frequency established in paragraph (2) (b) (1) of this section.

3. How monitoring and operational data (e.g. injection rate and pressure) will be used to inform an area of review reevaluation; and

4. How corrective action will be conducted to meet the requirements of paragraph (4) of this section, including what corrective action will be performed prior to injection and what, if any, portions of the area of review will have corrective action addressed on a phased basis and how the phasing will be determined; how corrective action will be adjusted if there are changes in the area of review; and how site access will be guaranteed for future corrective action.

(3) Owners or operators of Class VI wells must perform the following actions to delineate the area of review and identify all wells that require corrective action:

(a) Predict, using existing site characterization, monitoring and operational data, and computational modeling, the projected lateral and vertical migration of the carbon dioxide plume and formation fluids in the subsurface from the commencement of injection activities until the plume movement ceases, until pressure differentials sufficient to cause the movement of injected fluids or formation fluids into a USDW are no longer present, or until the end of a fixed time period as determined by the Department. The model must:

1. Be based on detailed geologic data collected to characterize the injection zone(s), confining zone(s) and any additional zone(s); and anticipated operating data, including injection pressures, rates, and total volumes over the proposed life of the geologic sequestration project;

2. Take into account any geologic heterogeneities, other discontinuities, data quality, and their possible impact on model predictions; and

3. Consider potential migration through faults, fractures, and artificial penetrations.

(b) Using methods approved by the Department, identify all penetrations, including active and abandoned wells and underground mines, in the area of review that may penetrate the confining zone(s). Provide a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Department may require; and

(c) Determine which abandoned wells in the area of review have been plugged in a manner that prevents the movement of carbon dioxide or other fluids that may endanger USDWs, including use of materials compatible with the carbon dioxide stream.

(4) Owners or operators of Class VI wells must perform corrective action on all wells in the area of review that are determined to need corrective action, using methods designed to prevent the movement of fluid into or between USDWs, including use of materials compatible, with the carbon dioxide stream, where appropriate.

(5) At the minimum fixed frequency, not to exceed five years, as specified in the area of review and corrective action plan, or when monitoring and operational conditions warrant, owners and operators must:

(a) Reevaluate the area of review in the same manner specified in paragraph (3)(a) of this rule;

(b) Identify all wells in the reevaluated area of review that require corrective action in the same manner specified in paragraph (3) of this rule;

(c) Perform corrective action on wells requiring corrective action in the reevaluated area of review in the same manner specified in paragraph (4) of this rule; and

(d) Submit an amended area of review and corrective action plan or demonstrate to the Department through monitoring data and modeling results that no amendment to the area of review and corrective action plan is needed. Any amendments to the area of review and corrective action plan must be approved by the Department, must be incorporated into the permit, and are subject to the permit modification requirements at rule 335-6-8-.08 of this chapter, as appropriate.

(6) The emergency and remedial response plan (as required by rule 335-6-8-.26 and the demonstration of financial responsibility (as described by 335-6-8-.17 must account for the area of review delineated as specified in paragraph (3)(a) of this section, or the most recently evaluated area of review delineated under paragraph (5) of this section, regardless of whether or not corrective action in the area of review is phased.

(7) All modeling inputs and data used to support area of review reevaluations under paragraph (5) of this section shall be retained for 10 years.

**Author:** Sonja Massey.

**Statutory Authority:** Code of Alabama 1975, §§ 22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.

**History:** XXXXXX, 2011.