

TRANSMITTAL SHEET FOR
NOTICE OF INTENDED ACTION

Control 335 Department or Agency Environmental Management
Rule No. 335-7-5-.22
Rule Title: Ground Water Rule
 New X 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? NO

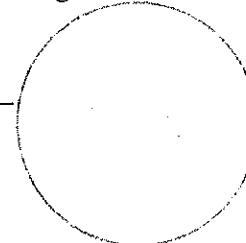
Are all facets of the rulemaking process designed solely for the purpose of, and so they have, as their primary effect, the protection of the public? YES

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.

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 *Nancy Ellett* 
Date March 21, 2016

**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WATER DIVISION**

NOTICE OF INTENDED ACTION

Agency Name: Alabama Department of Environmental Management

Rule No. & Title: 335-7-5-.22 Ground Water Rule (Amend)

Intended Action: The Alabama Department of Environmental Management proposes to amend rule 335-7-5-.22

Substance of Proposed Action:


The Department proposes to make administrative clarifications in this rule.

Time, Place, Manner of Presenting Views:

Comments may be submitted in writing or orally at a public hearing to be held at 1:00 PM, May 13, 2016, in the ADEM Main Hearing Room, 1400 Coliseum Boulevard, Montgomery, Alabama 36110.

Final Date for Comment and Completion of Notice: May 13, 2016

Contact Person at Agency: Christy Monk, (334) 394-4364


Lance R. LeFleur
Director

335-7-5-.22 Ground Water Rule.

(1) Applicability. This rule applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment of surface water or ground water under the influence of surface water. For the purposes of this rule, "ground water system" is defined as any public water system meeting this applicability statement, including consecutive systems receiving finished ground water.

(2) General requirements. Systems subject to this rule must comply with the following requirements:

(a) Sanitary survey information requirements for all ground water systems as described in paragraph (4) of this rule.

(b) Microbial source water monitoring requirements for ground water systems that do not treat all of their ground water to at least 99.99 percent (4-log) treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer as described in paragraph (5) of this rule.

(c) Treatment technique requirements, described in paragraph (6) of this rule, that apply to ground water systems that have fecally contaminated source waters, as determined by source water monitoring conducted under paragraph (5) of this rule, or that have significant deficiencies that are identified by the Department or that are identified by EPA under SDWA Section 1445. A ground water system with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of this rule must implement one or more of the following corrective action options: correct all significant deficiencies; provide an alternate source of water; eliminate the source of contamination; or provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer.

(d) Ground water systems that provide at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer are required to conduct compliance monitoring to demonstrate treatment effectiveness, as described in subparagraph (6)(b) of this rule.

(e) If requested by the Department, ground water systems must provide the Department with any existing information that will enable the Department to perform a hydrogeologic sensitivity assessment. For the purposes of this rule, "hydrogeologic sensitivity assessment" is a determination of whether ground water systems obtain water from hydrogeologically sensitive settings.

(3) Compliance date. Ground water systems must comply, unless otherwise noted, with the requirements of this rule beginning December 1, 2009.

(4) Sanitary surveys for ground water systems.

(a) Ground water systems must provide the Department, at the Department's request, any existing information that will enable the Department to conduct a sanitary survey.

(b) For the purposes of this rule, a "sanitary survey," as conducted by the Department, includes but is not limited to, an onsite review of the water source(s) (identifying sources of contamination by using results of source water assessments or other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

(c) The sanitary survey must include an evaluation of the applicable components listed in subparagraphs (c)1. through 8. below:

1. Source,
2. Treatment,
3. Distribution system,
4. Finished water storage,
5. Pumps, pump facilities, and controls,
6. Monitoring, reporting, and data verification,
7. System management and operation, and
8. Operator compliance with Department requirements.

(d) Ground water systems must comply with any changes the Department makes to the site sampling plan required by ADEM Admin. Code 335-7-2-.07. This includes any changes made during a special monitoring evaluation of their plan by the Department during a sanitary survey.

(5) Ground water source microbial monitoring and analytical methods.

(a) Triggered source water monitoring.

1. General requirements. A ground water system must conduct triggered source water monitoring if the conditions identified in subparagraphs (5)(a)1.(i) - (ii) below exist.

(i) The system does not provide at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for each ground water source; and

(ii) The system is notified that a sample collected under rule 335-7-2-.07 is total coliform-positive and the sample is not invalidated by the Department in implementing rule 335-7-2-.07.

2. Sampling requirements. A ground water system must collect, within 24 hours of notification of the total coliform-positive sample, at least one ground water source sample from each ground water source in use at the time the total coliform-positive sample was collected under rule 335-7-2-.07, except as provided in subparagraph (a)2.(ii) of this paragraph.

(i) The Department may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the ground water source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Department must specify how much time the system has to collect the sample.

(ii) If approved by the Department, systems with more than one ground water source may meet the requirements of subparagraph (5)(a)2. of this rule by sampling a representative ground water source or sources. If directed by the Department, systems must submit for Department approval a triggered source water monitoring plan that identifies one or more ground water sources that are representative of each monitoring site in the system's sample siting plan under rule 335-7-2-.07 that the system intends to use for representative sampling under this paragraph. The system must list the ground water source(s) that will be used for each site and the conditions in which they will use each site.

3. Additional requirements. If the Department does not require corrective action under subparagraph (6)(a)2. of this rule for a fecal indicator-positive source water sample collected under subparagraph (5)(a)2. of this rule that is not invalidated under subparagraph (5)(d) of this rule, the system must collect five additional source water samples from the same source within 24 hours of being notified of the fecal indicator-positive sample.

4. Consecutive and wholesale systems.

(i) In addition to the other requirements of this paragraph, a consecutive ground water system that has a total coliform-positive sample collected under rule 335-7-2-.07 must notify the wholesale system(s) within 24 hours of being notified of the total coliform-positive sample.

(ii) In addition to the other requirements of this paragraph, a wholesale ground water system must comply with subparagraphs (I) and (II) below.

(I) A wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under rule 335-7-2-.07 is total coliform-positive must, within 24 hours of being notified, collect a sample from its ground water source(s) under subparagraph (5)(a)2. of this rule and analyze it for a fecal indicator under subparagraph (5)(c) of this rule.

(II) If the sample collected under subparagraph (5)(a)2. of this rule is fecal indicator-positive, the wholesale ground water system must notify all consecutive systems served by that ground water source of the fecal indicator source water positive within 24 hours of being notified of the ground water source sample monitoring result and must meet the requirements of subparagraph (5)(a)3. of this rule.

5. Exceptions to the triggered source water monitoring requirements. A ground water system is not required to comply with the source water monitoring requirements of subparagraph (5)(a) of this rule if either of the following conditions exists:

(i) The Department determines, and documents in writing, that the total coliform-positive sample collected under rule 335-7-2-.07 is caused by a distribution system deficiency; or

(ii) The total coliform-positive sample collected under rule 335-7-2-.07 is collected at a location that meets Department criteria for distribution system conditions that will cause total coliform-positive samples.

(b) Assessment source water monitoring. If directed by the Department, ground water systems must conduct assessment source water monitoring that meets Department-determined requirements for such monitoring. A ground water system conducting assessment source water monitoring may use a triggered source water sample collected under subparagraph (5)(a)2. of this rule to meet the requirements of subparagraph (5)(b) of this rule. Department-determined assessment source water monitoring requirements may include:

1. Collection of a total of 12 ground water source samples that represent each month the system provides ground water to the public,

2. Collection of samples from each well unless the system obtains written Department approval to conduct monitoring at one or more wells within the ground water system that are representative of multiple wells used by that system and that draw water from the same hydrogeologic setting,

3. Collection of a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used,

4. Analysis of all ground water source samples using approved EPA methodology found in 40 CFR 141.402(c)(2) and by a laboratory certified by EPA or the Department for the presence of *E. Coli*, enterococci, or coliphage.

5. Collection of ground water source samples at a location prior to any treatment of the ground water source unless the Department approves a sampling location after treatment, and

6. Collection of ground water source samples at the well itself unless the system's configuration does not allow for sampling at the well itself and the

Department approves an alternate sampling location that is representative of the water quality of that well.

(c) Analytical methods.

1. A ground water system subject to the source water monitoring requirements of paragraph (5) of this rule must collect a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used.

2. A ground water system must analyze all ground water source samples collected under paragraph (5) of this rule using approved EPA methodology found in 40 CFR 141.402(c)(2) and by a laboratory certified by EPA or the Department for the presence of *E. Coli*, enterococci, or coliphage.

(d) Invalidation of a fecal indicator-positive ground water source sample.

1. A ground water system may obtain Department invalidation of a fecal indicator-positive ground water source sample collected under subparagraph (5)(a) of this rule only under the conditions specified in subparagraph (5)(d) 1.(i) - (ii) of this rule.

(i) The system provides the Department with written notice from the laboratory that improper sample analysis occurred; or

(ii) The Department determines and documents in writing that there is substantial evidence that a fecal indicator-positive ground water source sample is not related to source water quality.

2. If the Department invalidates a fecal indicator-positive ground water source sample, the ground water system must collect another source water sample under subparagraph (5)(a) of this rule within 24 hours of being notified by the Department of its invalidation decision and have it analyzed for the same fecal indicator using the analytical methods in subparagraph (5)(c) of this rule. The Department may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Department will specify how much time the system has to collect the sample.

(e) Sampling location.

1. Any ground water source sample required under subparagraph (5)(a) of this rule must be collected at a location prior to any treatment of the ground water source unless the Department approves a sampling location after treatment.

2. If the system's configuration does not allow for sampling at the well itself, the system may collect a sample at a Department-approved location to meet

the requirements of subparagraph (5)(a) of this rule if the sample is representative of the water quality of that well.

(f) New sources. If directed by the Department, a ground water system that places a new ground water source into service after November 30, 2009, must conduct assessment source water monitoring under subparagraph (5)(b) of this rule. If directed by the Department, the system must begin monitoring before the ground water source is used to provide water to the public.

(g) Public notification. A ground water system with a ground water source sample collected under subparagraph (5)(a) or (b) of this rule that is fecal indicator-positive and that is not invalidated under subparagraph (5)(d) of this rule, including consecutive systems served by the ground water source, must conduct public notification under 335-7-2-.21(1)(f).

(h) Monitoring violations. Failure to meet the requirements of subparagraphs (5)(a) – (f) of this rule is a monitoring violation and requires the ground water system to provide public notification under subparagraphs 335-7-2-.21(4)(a) - (d).

(6) Treatment technique requirements for ground water systems.

(a) Ground water systems with significant deficiencies or source water fecal contamination.

1. The treatment technique requirements of this rule must be met by ground water systems when a significant deficiency is identified or when a ground water source sample collected under subparagraph (5)(a)3. of this rule is fecal indicator-positive.

2. If directed by the Department, a ground water system with a ground water source sample collected under subparagraphs (5)(a)2., (5)(a)4., or (5)(b) of this rule that is fecal indicator-positive must comply with the treatment technique requirements of this rule.

3. When a significant deficiency is identified at a public water system that uses both ground water and surface water or ground water under the direct influence of surface water, the system must comply with provisions of this paragraph except in cases where the Department determines that the significant deficiency is in a portion of the distribution system that is served solely by surface water or ground water under the direct influence of surface water.

4. Unless the Department directs the ground water system to implement a specific corrective action, the ground water system must consult with the Department regarding the appropriate corrective action within 30 days of receiving written notice from the Department of a significant deficiency, written notice from a laboratory that a ground water source sample collected under subparagraph (5)(a)3. of this rule was found to be fecal indicator-positive, or direction from the Department that a fecal indicator's positive collected under subparagraphs (5)(a)2., (5)(a)4., or (5)(b) of this rule requires corrective action.

For the purposes of this rule, significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the Department determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

5. Within 120 days (or earlier if directed by the Department) of receiving written notification from the Department of a significant deficiency, written notice from a laboratory that a ground water source sample collected under subparagraph (5)(a)3. of this rule was found to be fecal indicator-positive, or direction from the Department that a fecal indicator-positive sample collected under subparagraphs (5)(a)2., (5)(a)4., or (5)(b) of this rule requires corrective action, the ground water system must either:

(i) Have completed corrective action in accordance with applicable Department plan review processes or other Department guidance or direction, if any, including Department-specified interim measures; or

(ii) Be in compliance with a Department-approved corrective action plan and schedule subject to the conditions specified in subparagraphs (6)(a)5.(ii)(I) through (II) below.

(I) Any subsequent modifications to a Department-approved corrective action plan and schedule must also be approved by the Department.

(II) If the Department specifies interim measures for protection of the public health pending Department approval of the corrective action plan and schedule or pending completion of the corrective action plan, the system must comply with these interim measures as well as with any schedule specified by the Department.

6. Corrective action alternatives. Ground water systems that meet the conditions of subparagraph (6)(a)1. or 2. of this rule must implement one or more of the following corrective action alternatives:

(i) Correct all significant deficiencies;

(ii) Provide an alternate source of water;

(iii) Eliminate the source of contamination; or

(iv) Provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.

7. Special notice to the public of significant deficiencies or source water fecal contamination.

(i) In addition to the applicable public notification requirements of 335-7-2-.21(1)(f), a community ground water system that receives notice from the

Department of a significant deficiency or notification of a fecal indicator-positive ground water source sample that is not invalidated by the Department under subparagraph (5)(d) of this rule must inform the public served by the water system under rule 335-7-14-.04(6) of the fecal indicator-positive source sample or of any significant deficiency that has not been corrected. The system must continue to inform the public annually until the significant deficiency is corrected or the fecal contamination in the ground water source is determined by the Department to be corrected under subparagraph (6)(a)5. of this rule.

(ii) In addition to the applicable public notification requirements of 335-7-2-.21(1)(f), a non-community ground water system that receives notice from the Department of a significant deficiency must inform the public served by the water system in a manner approved by the Department of any significant deficiency that has not been corrected within 12 months of being notified by the Department, or earlier if directed by the Department. The system must continue to inform the public annually until the significant deficiency is corrected. The information must include:

(I) The nature of the significant deficiency and the date the significant deficiency was identified by the Department;

(II) The Department-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed; and

(III) For systems with a large proportion of non-English speaking consumers, as determined by the Department, information in the appropriate language(s) regarding the importance of the notice or a telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.

(iii) If directed by the Department, a non-community water system with significant deficiencies that have been corrected must inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction under subparagraph (6)(a)7.(ii) of this rule.

(b) Compliance monitoring.

1. Existing ground water sources. A ground water system that is not required to meet the source water monitoring requirements of this rule for any ground water source because it provides at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for any ground water source before December 1, 2009, must notify the Department in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the specified ground water source and begin compliance monitoring in accordance with subparagraph (6)(b)3. of this rule by December 1, 2009. Notification to the Department must include engineering, operational, or other information that the Department requests to evaluate the

submission. If the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source, the system must conduct ground water source monitoring as required under paragraph (5) of this rule.

2. New ground water sources. A ground water system that places a ground water source in service after November 30, 2009, that is not required to meet the source water monitoring requirements of this rule because the system provides at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source must comply with the requirements of subparagraphs (6)(b)2.(i) - (iii) below.

(i) The system must notify the Department in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source. Notification to the Department must include engineering, operational, or other information that the Department requests to evaluate the submission.

(ii) The system must conduct compliance monitoring as required under subparagraph (6)(b)3. of this rule within 30 days of placing the source in service.

(iii) The system must conduct ground water source monitoring under paragraph (5) of this rule if the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.

3. Monitoring requirements. A ground water system subject to the requirements of subparagraphs (6)(a), (6)(b)1. or (6)(b)2. of this rule must monitor the effectiveness and reliability of treatment for that ground water source before or at the first customer as follows:

(i) Chemical disinfection.

(I) Ground water systems serving greater than 3,300 people. A ground water system that serves greater than 3,300 people must continuously monitor the residual disinfectant concentration using approved EPA methodology found in 40 CFR 141.74(a)(2) at a location approved by the Department and must record the lowest residual disinfectant concentration each day that water from the ground water source is served to the public. The ground water system must maintain the Department-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. If there is a failure in the continuous monitoring equipment, the ground water system must conduct grab sampling every four hours until the continuous monitoring equipment is returned to service. The system must resume continuous residual disinfectant monitoring within 14 days.

(II) Ground water systems serving 3,300 or fewer people. A ground water system that serves 3,300 or fewer people must monitor the residual disinfectant concentration using approved EPA methodology found in 40 CFR 141.74(a)(2) at a location approved by the Department and record the residual disinfection concentration each day that water from the ground water source is served to the public. The ground water system must maintain the Department-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. The ground water system must take a daily grab sample during the hour of peak flow or at another time specified by the Department. If any daily grab sample measurement falls below the Department-determined residual disinfectant concentration, the ground water system must take follow-up samples every four hours until the residual disinfectant concentration is restored to the Department-determined level. Alternatively, a ground water system that serves 3,300 or fewer people may monitor continuously and meet the requirements of subparagraph (6)(b)3.(i)(I) of this rule.

(ii) Membrane filtration. A ground water system that uses membrane filtration to meet the requirements of this rule must monitor the membrane filtration process in accordance with all Department-specified monitoring requirements and must operate the membrane filtration in accordance with all Department-specified compliance requirements. A ground water system that uses membrane filtration is in compliance with the requirement to achieve at least 4-log removal of viruses when:

(I) The membrane has an absolute molecular weight cut-off (MWCO), or an alternate parameter that describes the exclusion characteristics of the membrane, that can reliably achieve at least 4-log removal of viruses;

(II) The membrane process is operated in accordance with Department-specified compliance requirements; and

(III) The integrity of the membrane is intact.

(iii) Alternative treatment. A ground water system that uses a Department-approved alternative treatment to meet the requirements of this rule by providing at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer must:

(I) Monitor the alternative treatment in accordance with all Department-specified monitoring requirements; and

(II) Operate the alternative treatment in accordance with all compliance requirements that the Department determines to be necessary to achieve at least 4-log treatment of viruses.

(c) Discontinuing treatment. A ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the

first customer for a ground water source if the Department determines and documents in writing that 4-log treatment of viruses is no longer necessary for that ground water source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of paragraph (5) of this rule.

(d) Failure to meet the monitoring requirements of subparagraph (6)(b) of this rule is a monitoring violation and requires the ground water system to provide public notification under subparagraphs 335-7-2-.21(4)(a) - (d).

(7) Treatment technique violations for ground water systems.

(a) A ground water system with a significant deficiency is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the Department) of receiving written notice from the Department of the significant deficiency, the system:

1. Does not complete corrective action in accordance with any applicable Department plan review processes or other Department guidance and direction, including Department specified interim actions and measures, or

2. Is not in compliance with a Department-approved corrective action plan and schedule.

(b) Unless the Department invalidates a fecal indicator-positive ground water source sample under subparagraph (5)(d) of this rule a ground water system is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the Department) of meeting the conditions of subparagraph (6)(a)1. or subparagraph (6)(a)2. of this rule the system:

1. Does not complete corrective action in accordance with any applicable Department plan review processes or other Department guidance and direction, including Department-specified interim measures, or

2. Is not in compliance with a Department-approved corrective action plan and schedule.

(c) A ground water system subject to the requirements of subparagraph (6)(b)3. of this rule that fails to maintain at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source is in violation of the treatment technique requirement if the failure is not corrected within four hours of determining the system is not maintaining at least 4-log treatment of viruses before or at the first customer.

(d) Ground water system must give public notification under subparagraphs 335-7-2-.21(1)(a) - (e) for the treatment technique violations specified in subparagraphs (7)(a), (7)(b) and (7)(c) of this rule.

Author: Dennis D. Harrison.

Statutory Authority: Code of Alabama 1975, §§ 22-23-33, 22-23-49, 22-22A-5, 22-22A-6.

History: May 26, 2009; September 25, 2012.

Amended: XXXX XX, 2016