

Rulemaking Hearing Rules
Department of Environment and Conservation
Division of Water Pollution Control

Chapter 1200-04-03
General Water Quality Criteria

Amendments

The rules classifying ground water and establishing criteria for the classes of ground water are amended by this rulemaking. To accomplish this, Rules 1200-04-03-.07, .08, .09, .10, and .11 of Rule Chapter 1200-04-03 General Water Quality Criteria are amended by deleting them in their entirety and substituting the following so that, as amended, they shall read as follows:

1200-04-03-.07 Ground Water Classification

(1) Purpose and Intent

- (a) It is one of the primary goals of the Tennessee Water Quality Control Act, Tennessee Code Annotated (T.C.A.) §§ 69-3-101 et seq. (the "Act") to protect our valuable ground water resource. This rule classifies ground water across the state based on the factors stated in T.C.A. § 69-3-105(a)(2) of the Act and establishes ground water quality criteria. The quality of ground water varies in Tennessee. Some ground water is sufficient to be used by our citizens directly as a drinking water supply with limited or no treatment. Other ground water would require more extensive treatment before it could be used as a water supply. Further, some ground water may be of such value as to warrant special protection. The board recognizes that some water below the surface of the ground may be present in a zone of aeration between ground surface and the water table. The zone of aeration is where treatment from household septic systems occurs and water in the zone of aeration is not classified as ground water in these regulations. Perched water above the zone of saturation may, in some areas, be used as a water supply or may migrate to either ground water or surface water and is included in these regulations to protect for its direct use or impact on ground water or surface water. Additionally, some ground water has levels of naturally occurring constituents that make the resource unusable as a drinking water supply.
- (b) The board recognizes these rules apply to both permitting activities and response actions that involve water beneath the surface of the ground. The permitting of underground injection is governed by Rule Chapter 1200-4-6.
- (c) These rules provide appropriate flexibility in the regulatory process to protect our ground water resource and to allow the productive use of land. Reuse of brownfield areas is encouraged and reduces the use of greenfield areas.
- (d) The board recognizes that several divisions within the department have a role in protecting ground water resources. It is not the intent of these rules to change the responsibilities of those programs. It is, however, the intent of these rules to provide a basis for decisions involving ground water that may be applied by all divisions of the department. The board does not intend these rules to affect in any way the ability of the State to seek natural resource damages from responsible parties when ground water has been contaminated by human activity.
- (e) Ground water that enters a stream or other water classified as surface water becomes surface water and is subject to respective criteria applicable to that water. The board expects

that the department will use prudent judgment where ground water mixes with water on the surface of the ground.

(2) Definitions

- (a) "Area of Control" means a volume designated by the commissioner underlying or surrounding a site, including the zone of aeration and the zone of saturation, containing water, some of which the commissioner has determined not to meet applicable criteria.
- (b) "Ground Water" means water beneath the surface of the ground within the zone of saturation, whether or not flowing through known and definite channels..
- (c) "Perched water" means water that accumulates above an aquitard that limits downward migration where there is an unsaturated interval below it, between the aquitard and the zone of saturation.
- (d) "Point of Classification Change" means the boundary of the volume within which ground water is classified as Site Specific Impaired as established under Rule 1200-04-03-.09.
- (e) "Response action" means a clean up, remedial action, remedy, remedial investigation or other action taken by the department to address the presence of contaminants at levels that have been determined by the Department to require an appropriate response.
- (f) "Zone of Aeration" means a subsurface zone extending from the water table to the surface of the land.
- (g) "Zone of Saturation" means a subsurface zone below the water table in which all of the interconnected voids and pore spaces are filled with water

(3) Water in the Zone of Aeration

Water in the zone of aeration is not defined as ground water in this rule, but it may occur as perched water. This perched water may be above ground water of any of the classifications used in this rule. Perched water is protected under this rule in accordance with its use as follows:

- (a) Perched water that is used for drinking water or reasonably anticipated to be used as a drinking water supply shall meet the criteria listed for General Use in Rule 1200-04-03-.08(2). Other perched water shall not contain constituents, other than of natural origin, that cause or are reasonably likely to cause a violation of criteria of underlying ground water or surface water where the perched water enters those waters.
- (b) Except for naturally occurring levels, perched water shall contain no other constituents at levels and conditions that pose an unreasonable risk to public health or the environment.
- (c) If perched water, such as in a cave system, is habitat for fish and aquatic life, it shall contain no constituents except for naturally occurring substances at levels and concentrations that violate the criteria of Rule 1200-04-03-.03(3) for fish and aquatic life.

(4) Water below the surface of the ground is classified as follows:

(a) Special Source Waters

This is ground water or perched water with exceptional quality or quantity, which may serve as a valuable source for water supply or which is ecologically significant.

When the board finds water to be Special Source Water, then through the rulemaking process, the board will amend these rules to include the specific location and the boundaries of ground water or perched water designated as Special Source Water. To initiate this process, a petition shall address the factors listed below for board consideration. Any cost involved in making the petition shall be borne by the petitioner. In making this decision, the board may consider the following factors and relevant public input:

1. The vulnerability of the water in the proposed area to contamination due to hydrogeologic characteristics;
2. The number of persons or the proportion of the population using the water as a drinking water supply;
3. Existing water quality in the proposed Special Source Water area;
4. An evaluation of the ecological and environmental impact should the quality of the Special Source Water be compromised; and
5. Other pertinent information as deemed necessary by the petitioner, department, or board. Because such action is a rulemaking procedure, public input may be made as provided in the Uniform Administrative Procedures Act, T.C.A. §§ 4-5-201 et. seq., but not as a contested case under T.C.A. §§ 4-5-301 et. seq.

(b) General Use Ground Water

Except for ground water in areas that have been designated as Special Source Water, Site Specific Impaired Ground Water, or meet the definition of Unusable Ground Water, all ground water is designated General Use Ground Water.

(c) Site Specific Impaired Ground Water

This is ground water that has been contaminated by human activity and the board finds that either it is not technologically feasible to remediate the ground water to the criteria required by other classifications or it is not reasonable to remediate to that criteria based on information provided in accordance with Rule 1200-04-03-.09. Ground water shall be classified as Site Specific Impaired upon approval of a petition to the Water Quality Control Board and completion of the rulemaking process to amend these rules to identify the reclassified ground water. When ground water is reclassified to Site Specific Impaired the areal extent of the Site Specific Impaired Ground Water shall be delineated. The boundaries of the Site Specific Impaired Ground Water cannot extend beyond the perimeter and depth investigated with an appropriate safety factor as determined under Rule 1200-04-03-.09. Figures which clearly depict the horizontal and vertical boundaries of the Site Specific Impaired Ground Water must be submitted to the department in the plans/reports required by Rule 1200-04-03-.09.

(d) Unusable Ground Water

Ground water in the following areas are classified as Unusable Ground Water:

1. A "High Dissolved Solids Zone" is an area in which ground water has naturally occurring total dissolved solids of more than 10,000 ppm.
2. A "Historical Injection Zone" is an area in which the ground water and the injection zone designated to receive fluids and other substances from deep well injection initiated prior to September 1985 and operated under compliance with the

Department at the time of injection is no longer subject to injection. The certification as a historical injection zone subclass of Unusable Ground Water does not provide authorization for future injection activities and shall not be construed as Class I zone designation under Rule Chapter 1200-4-6, Underground Injection Control. The zone may be subsequently considered for Class I zone designation under that Rule Chapter provided it meets the criteria based on naturally occurring conditions and not from changes as a result of the previously injected fluids.

3. A "Class I Injection Zone" is an area in which ground water has been demonstrated by a permit applicant as a part of a Class I operation under Rule Chapter 1200-4-6, Underground Injection Control, to be suitable for Class I injection.
4. A "Class II or III Injection Zone" is an area in which ground water is mineral, hydrocarbon or geothermal energy producing, or has been demonstrated by a permit applicant as a part of a permit application for a Class II or III operation under Rule Chapter 1200-4-6 Underground Injection Control to contain minerals or hydrocarbons that, considering their quality and location, are expected to be commercially producible. The designation as Class II or III injection zone subclass of Unusable Ground Water shall not be construed as a Class I zone designation under Rule Chapter 1200-4-6, Underground Injection Control.
5. An "Acid Production Zone from Mining Activities" is an area in which ground water occurs within an excavated area where reaction with naturally occurring minerals generates acid rock drainage or acid mine drainage. An excavated area may be a surface or underground mined area as well as a subsidence area whether or not the mined area is backfilled. Ground water beyond the excavated area is classified as described elsewhere in this rule.

Authority: T.C.A. §§4-5-201 et seq., and 69-3-105.

1200-04-03-.08 Criteria

The water quality criteria for the different classes are as follows:

(1) Special Source Water

The board will consider the special protection needs of any water identified as Special Source Water and promulgate criteria at the time of designation.

(2) General Use Ground Water

Except for naturally occurring levels, General Use Ground Water:

- (a) shall not contain constituents that exceed those levels specified in Rules 1200-04-03-.03(1) and k; and
- (b) shall contain no other constituents at levels and conditions which pose an unreasonable risk to the public health or the environment.

(3) Site Specific Impaired Ground Water

Except for naturally occurring levels, Site Specific Impaired Ground Water:

- (a) shall contain no substances, whether alone or in combination with other substances , that

are toxic, carcinogenic, mutagenic or teratogenic, other than those of natural origin, at levels and conditions which pose an unreasonable risk to public health or the environment;

- (b) shall contain no other constituents at levels and conditions which pose an unreasonable risk to the public health or the environment;
- (c) shall contain no constituents at levels that will prevent ground waters beyond the point of classification change from meeting the classification and criteria for those waters; and
- (d) other criteria established by the board as appropriate to the site.

(4) Unusable Ground Water

Except for naturally occurring levels, Unusable Ground Water:

- (a) shall contain no substances, whether alone or in combination with other substances, that are toxic, carcinogenic, mutagenic or teratogenic, other than those of natural origin, at levels and conditions which pose an unreasonable risk to the public health;
- (b) shall contain no other constituents at levels and conditions which pose an unreasonable risk to the public health;
- (c) shall not discharge to surface water causing a violation of surface water quality criteria or biological integrity; and
- (d) naturally occurring levels as used in subparagraph (a) of this paragraph shall include the natural minerals, mining wastes, and the reaction products of oxidation and reduction associated with these materials in Unusable Ground Water in an Acid Production Zone from Mining Activities. These substances shall not pose an unreasonable public health or safety risk to the public. Physical barriers and institutional controls satisfy that requirement.

Authority: T.C.A. §§4-5-201 et seq., and 69-3-105.

1200-04-03-.09 Site Specific Impaired Classification Petition Process.

- (1) Any person who encounters ground water that may meet the requirements for Site Specific Impaired, may petition the board to adopt a rule reclassifying that ground water as Site Specific Impaired, using the process set forth in this rule. Any costs involved in making the petition shall be borne by the petitioner. The petition shall include the following, unless it is determined by the department in writing that the site conditions render any of them unnecessary:
 - (a) An assessment of the horizontal and vertical extent of the contamination;
 - (b) An evaluation of the hydrogeology of the area including but not limited to the ground water flow rate and direction, permeability, recharge area, ground water classification and location of local water wells, springs and seeps;
 - (c) An evaluation of the area geology including, but not limited to, soil type, soil permeability, soil porosity, depth to bedrock, and identification of geologic formations;
 - (d) A description of the corrective actions or response actions taken or proposed;
 - (e) The chemical characteristics of the constituent(s) including, but not limited to, the constituent's solubility, mobility, toxicity, and carcinogenicity, the nature of and the level of

constituents to remain or be present in the ground water and the calculations and rationale used in the determination;

- (f) A feasibility study, which evaluates clean-up alternatives, the cost, and the time to complete each alternative;
 - (g) An evaluation of current and reasonably anticipated future ground water use within the proposed Site Specific Impaired area and within a one-half (1/2) mile radius of the proposed Site Specific Impaired area; the impact of conduit flow shall be evaluated in karst areas;
 - (h) An evaluation of current and reasonably anticipated future land uses within the proposed Site Specific Impaired area and within a one-half (1/2) mile radius of the proposed Site Specific Impaired area;
 - (i) An evaluation of the potential of the constituent to migrate through soil and ground water to:
 - 1. homes;
 - 2. buildings;
 - 3. surface waters;
 - 4. subsurface utilities; and
 - 5. adjacent properties.
 - (j) A description of any existing or proposed monitoring program to observe constituent levels in soil and ground water;
 - (k) Evaluation of the existing or anticipated actual exposure pathways (inhalation, ingestion, dermal contact, etc.) of the constituents and an assessment of the human health risks presented by exposure to the constituents as well as the impact, if any, of the constituents on fish and aquatic life pursuant to Rule Chapter 1200-04-03;
 - (l) Consideration of the classification in Rule 1200-04-03-.07 that would apply to the ground water at the site if it were not contaminated;
 - (m) Analysis of the benefits of the restored resource;
 - (n) A description of how and when the contamination occurred, if known;
 - (o) A plat map with the proposed site-specific ground water area superimposed on it that shows all property owners for properties included in the Site Specific Impaired classification with contact information for owners of each property and identification and contact information for the parties paying property taxes on each property in the proposed Site Specific Impaired classification area; and
 - (p) Other items as requested by the department associated with the evaluation of the petition.
- (2) Because Site Specific Impaired classification is a rulemaking procedure, public input may be made as provided in the Uniform Administrative Procedures Act, T.C.A. §§ 4-5-201 et. seq., but not as a contested case under T.C.A. 4-5-301 et. seq. In addition to the requirements for public input under

the Uniform Administrative Procedures Act, T.C.A. §§ 4-5-201 et. seq., the petitioner shall, at a minimum, notify the party of record paying property taxes for each property subject to the Site Specific Impaired classification of the petition and the process for submitting comments on said petition. The petitioner shall provide a copy of such notification to the department.

- (3) In the evaluation of a petition to classify ground water as Site Specific Impaired, the board may consider the following:
- (a) the extent of any threat to human health or safety;
 - (b) the extent of damage to the environment;
 - (c) technology commercially available to accomplish restoration;
 - (d) a comparison of the environmental and economic costs and benefits to be derived from ground water quality restoration with the environmental and economic costs and benefits to be derived from classification as Site Specific Impaired;
 - (e) analysis of the restored resource;
 - (f) the point of classification change;
 - (g) contaminant or pollution source identification and cleanup;
 - (h) public comments; and
 - (i) other appropriate information presented in the petition.

Authority: T.C.A. §§4-5-201 et seq., and 69-3-105.

1200-04-03-.10 Remediation Of Ground Water Or Perched Water

- (1) When a release or other event occurs that causes subsurface water to not meet the criteria in these rules, the commissioner has authority under a number of statutes to cause remediation of the water. These statutes include the Solid Waste Disposal Control Act, T.C.A. §§ 68-211-101 et seq., the Hazardous Waste Management Act, parts 1 and 2, T.C.A. §§ 68-212-101 et seq., and §§ 68-212-201 et seq., the Petroleum Underground Storage Tank Act, T.C.A. §§68-215-101 et seq., and the Drycleaner Environmental Response Act, T.C.A. §§ 68-217-101 et seq. The goals of all such remediation actions are:
- (a) to return waters to meeting standards when practicable by such methods as source removal, bioremediation, pump and treat, and natural attenuation; and
 - (b) to protect the public from exposure to water that does not meet standards through such methods as physical and institutional controls.
- (2) In order to accomplish these goals the commissioner may establish an Area of Control when contamination has caused water to exceed the standards in these rules. In establishing an Area of Control, the commissioner shall use the authorities of the remediation statutes and rules to:
- (a) describe the extent of an Area of Control; and
 - (b) protect the public from exposure to the water in the Area of Control.

Where the commissioner identifies the source of pollution or water of sufficient contamination as to warrant contaminant mass reduction, he may further prescribe the actions to be taken to reduce the levels of contamination within the Area of Control.

- (3) The commissioner may establish such an Area of Control for water contaminated by human activity prior to November 19, 1980 if there are no liable parties as defined in T.C.A. § 68-212-202 (3) (B), (C), or (D) and the current property owner did not cause the water contamination. This could be done in conjunction with imposing land use restrictions to protect the public from any harm caused by the site whether or not the department expends funds to remediate the site. In establishing such an Area of Control, the commissioner may use the authorities of the remediation statutes and rules to:
 - (a) describe the extent of an Area of Control;
 - (b) prescribe the actions to be taken to reduce the levels of contamination within the Area of control; and
 - (c) protect the public from exposure to the water in the Area of Control.
- (4) Any current or future “alternate concentration limit” or “ground water protection standard” established within a Tennessee Hazardous Waste Management enforceable document in accordance with Tennessee Rule Chapter 1200-1-11-.06 identifies an Area of Control in accordance with this Rule. Compliance with the enforceable document constitutes compliance with the remediation actions identified in paragraph (1) of this Rule.

Authority: T.C.A. §§4-5-201 et seq., and 69-3-105. Administrative History: Original rule filed June 28, 1999; effective September 11, 1999. Amendment filed July 13, 1999; effective October 11, 1999.

1200-04-03-.11 Classified Site Specific Impaired Ground Water and Respective Criteria

The following ground water is classified as site specific impaired ground water with the respective criteria:

- (1) Porter Cable

- (a) Description of the site

The area of ground water classified is the ground water within the boundaries of the Porter Cable/Rockwell facility that is within the rectangle with the following boundary points to a depth equivalent to 250 feet mean sea level.

Northwest boundary point...35°44'27.5"N, 88°51'19.8"W

Northeast boundary point ...35°44'27.5"N, 88°51'05.7"W

Southwest boundary point...35°44'13.8"N, 88°51'19.8"W

Southeast boundary point... 35°44'13.8"N, 88°51'05.7"W

A solvent plume under the western edge of the building is moving very slowly to the north-northwest. Since the plant began operation in the mid-1970's, the plume has migrated approximately 400 feet, with the property boundary another 1500 feet down gradient. Sampling has shown that the plume is degrading to a certain extent by natural and biologic

processes, and this process can be enhanced with the addition of nutrients to fuel the biologic activity in the contaminated zone.

(b) Criteria

Nutrient addition is allowed to promote enhanced natural attenuation of the plume in accordance with the remediation remedy being used at the site. Deed restrictions will insure the site will not be used as residential and that ground water will not be used for potable purposes. The point of classification change is totally within the boundaries of the Porter-Cable facility. The plume shall not cross the point of classification change at levels exceeding general use criteria.

(2) Isabella Mine Pit

(a) Description of the site

The area of ground water classified is the ground water in mined areas of the former Isabella/Eureka Mine, the connected Isabella pit, ground water between the Isabella pit and North Potato Creek, and an approximate 500 foot buffer around the mined areas. This ground water classification applies to part of the land that was previously abandoned by the bankruptcy court and is now either under control of a court-appointed receiver or trustee for the Irrevocable Trust of the Tennessee Chemical company (receiver or trustee). If the 500 foot buffer boundary would extend beyond a property line, then the property line shall be the point of classification change. The depth of ground water classification is from ground surface to 1400 feet. The mined areas are delineated as shown on the former mining company's mine maps. The point of classification change for this area is the outer boundary of the area classified as described above and a depth of 1400 feet.

There is a bulkhead or plug between the Isabella/Eureka Mine and the Burra Burra Mine and this Site Specific Impaired classification includes the drift between the Isabella and Burra Burra Mines on the Isabella side of the drift plug but does not apply to water in the Burra Burra Mine. The drift does not require a 500-foot wide buffer zone.

(b) Criteria

The Site Specific Impaired Ground Water criteria for the water in the Isabella pit, associated Isabella/Eureka mine workings, and ground water between the Isabella pit and North Potato Creek shall be:

1. Any concentration of inorganic constituents or elements associated with acid mine drainage and any pH or other physical standard associated with acid mine drainage;
2. Any concentration of inorganic constituents or elements associated with approved backfilling or addition of ore, waste rock, calcine, concentrate, granulated slag, tailings, or other acid-generating materials from historic mining and ore beneficiation processes in the Copper Basin;
3. Criteria for other constituents are those required for General Use Ground Water as of November 3, 2004;
4. The continued use of institutional controls to avoid the potential for human contact with this ground water; and

5. Institute a monitoring program, acceptable to TDEC, that monitors the water level in the pit and is sufficient to assure protection of human health and the environment.

Authority: T.C.A. §§4-5-201 et seq., and 69-3-105. Administrative History: Original rule filed June 28, 1999; effective September 11, 1999. Amendment filed July 13, 1999; effective October 11, 1999.

New Rule

Rule Chapter 1200-04-03 General Water Quality Criteria is amended by adding new rule 1200-04-03-.12 Reporting Requirement so that, as amended, the new rule shall read as follows:

1200-04-03-.12 Reporting Requirement

- (1) The board acknowledges that the General Assembly has given it the authority to promulgate rules for the prevention, control, and abatement of pollution in T.C.A. § 69-3-105(b). The board finds a necessary first step toward controlling and abating pollution is becoming aware of the situation. This is especially needed in the case of ground water, as it is not in plain view as surface water often is. Furthermore, once the department has documents relating to an instance of pollution, they are generally going to be open to the public. Making the public aware of pollution both increases the likelihood that the pollution will be abated and that the public will be able to take appropriate action to reduce harmful exposure. These findings, in addition to the provision of T.C.A. § 69-3-114(b) making it unlawful to refuse to furnish any information required by the Board, are the basis for the requirement stated in paragraph (2) of this rule.
- (2) Owners or prospective purchasers of property used for commercial or industrial purposes who test the ground water or perched water on the property shall notify the commissioner of any contamination of such water if it is currently used as potable water and it exceeds general use criteria or if an environmental professional engaged by such owner or prospective purchaser reasonably concludes that it poses some other substantial risk to health or safety, including but not limited to, situations in which vapors released from the water are causing an explosion hazard or a current inhalation hazard with a hazard quotient of greater than 1 or a cancer risk of greater than 1×10^{-6} .
- (3) Routine sampling and reporting of ground water or perched water data required by an agency of the Department as part of a regulatory program obligation shall constitute reporting for the purposes of this rule.

Authority: T.C.A. §§4-5-201 et seq., and 69-3-105.

The rulemaking hearing rules set out herein were properly filed in the Department of State on the 24th day of March, 2008. and will become effective on the 7th day of June, 2008. (FS 03-12-08; DBID 2846)

Economic Impact Statement

Rules 1200-04-03-.07 through .11

These revisions will benefit small business that have an obligation to investigate and cleanup ground water. A section was added that acknowledges cleanups of ground water under the various environment statutes other than the Water Quality Act. The rule seeks to avoid duplicating these activities as a dual requirement of the Water Quality Act. The commissioner is granted authority to establish an area of control to protect the public where it is not practicable to meet established criteria.

Small business avoids being subject to duplicate cleanup obligations for the same problem by this practical explanation of how the Water Quality Act is used in combination with other statutes for investigation and cleanup of contaminated ground water.

New Rule 1200-04-03-.12

This new rule requires reporting of identified ground water that someone is drinking and that is not safe to drink, that is a current explosive hazard, or that is causing toxic vapors to enter an existing building at levels identified as a health hazard. This reporting requirement was reduced to the lowest level possible that allows the commissioner to identify serious ongoing hazards that need to be addressed.

Small business should share the benefit from this identification of serious problems by protecting the health of their workers and by avoiding possible litigation. There is no obligation to actually perform sampling but only to share the existence of identified serious problems with the commissioner.