

## CHAPTER 9C

## GROUND WATER QUALITY STANDARDS

## Authority

N.J.S.A. 13:1D-1 et seq., 58:10A-1 et seq., and 58:11A-1 et seq.

## Source and Effective Date

R.2005 d.368, effective October 4, 2005.  
See: 36 N.J.R. 4374(b), 36 N.J.R. 5057(a), 36 N.J.R. 5636(a),  
and 37 N.J.R. 4226(b).

## Chapter Expiration Date

In accordance with N.J.S.A. 52:14B-5.1d, the expiration date of Chapter 9C, Ground Water Quality Standards, was extended by gubernatorial directive from October 4, 2010 to April 4, 2012. See: 42 N.J.R. 2619(a).

## Chapter Historical Note

Chapter 9C, Ground Water Quality Standards, was recodified from N.J.A.C. 7:9 Subchapter 6 and readopted by R.2005 d.368, effective October 4, 2005. See: Source and Effective Date. See, also, section annotations.

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## SUBCHAPTER 1. GROUND WATER QUALITY STANDARDS

## 7:9C-1.1 Scope of chapter

(a) Unless otherwise provided by statute, this chapter constitutes the rules of the Department of Environmental Protection concerning ground water classification, designated uses of ground water, and ground water quality criteria, and constituent standards, pursuant to the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and the Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.).

(b) This chapter provides the basis for protection of ambient ground water quality, through the establishment of constituent standards for ground water pollutants. These constituent standards are applicable to the development of:

ground water protection standards pursuant to the New Jersey Pollutant Discharge Elimination System (NJPDES; N.J.A.C. 7:14A); ground water remediation standards; and other requirements and regulatory actions applicable to discharges that cause or may cause pollutants to enter the ground waters of the State, including non-point and diffuse sources regulated by the Department. Other relevant laws through which the Ground Water Quality Standards may be applied include, but are not limited to, the Spill Compensation and Control Act (N.J.S.A. 58:10-23.11 et seq.), the Brownfield and Contaminated Site Remediation Act (N.J.S.A. 58:10B-1 et seq.), the Site Remediation Reform Act (N.J.S.A. 58:10C-1 et seq.), the Solid Waste Management Act (N.J.S.A. 13:1E-1 et seq.), the Industrial Site Recovery Act (N.J.S.A. 13:1K-6 et seq.), the Underground Storage of Hazardous Substances Act (N.J.S.A. 58:10A-21 et seq.), the Realty Improvement Sewerage and Facilities Act (N.J.S.A. 58:11-23 et seq.), and the Pesticide Control Act of 1971 (N.J.S.A. 13:1F-1 et seq.).

(c) This chapter constitutes the Department's primary basis for setting numerical criteria for limits on discharges to ground water and standards for ground water remediation.

Recodified from N.J.A.C. 7:9-6.1 by R.2005 d.368, effective November 7, 2005.

See: 36 N.J.R. 4374(b), 37 N.J.R. 4226(b).

Rewrote the section.

Special amendment, R.2009 d.361, effective November 4, 2009 (to expire May 4, 2011).

See: 41 N.J.R. 4467(a).

In (b), inserted "the Site Remediation Reform Act (N.J.S.A. 58:10C-1 et seq.)."

Administrative correction.

See: 42 N.J.R. 1862(a).

## Case Notes

Private home septic system installed in violation of regulation; violation does not give rise to private cause of action for damages. *Jalowiecki v. Leuc*, 182 N.J.Super. 22, 440 A.2d 21 (App.Div.1981).

## 7:9C-1.2 Policies

(a) It is the policy of this State to restore, enhance and maintain the chemical, physical and biological integrity of its waters, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water.

(b) Discharges to ground water that subsequently discharge into surface waters shall not be permitted by the applicable regulatory program if such discharges would cause a contravention of surface water quality standards applicable to those surface waters. That is, those discharges must achieve compliance with both these standards and the surface water quality standards (N.J.A.C. 7:9B).

(c) When existing ground water quality does not meet the constituent standards determined pursuant to N.J.A.C. 7:9C-1.7, 1.8 and 1.9, due to human activities, the Department

shall, after a review of relevant and available scientific and technical data, determine in the context of the applicable regulatory programs the management actions necessary (including, but not limited to, the requirement of remedial actions) to restore or enhance ground water quality pursuant to the policies of this chapter.

(d) The Department shall not approve discharges or activities posing a significant risk of discharges, within the jurisdiction of and subject to regulation by the Pinelands Commission, that would contravene the rules of the Pinelands Commission with regard to the protection of ground water or surface water quality.

Recodified from N.J.A.C. 7:9-6.2 by R.2005 d.368, effective November 7, 2005.

See: 36 N.J.R. 4374(b), 37 N.J.R. 4226(b).

#### Case Notes

Standards for Total Suspended Solids set by Federal and State regulations; fine assessed appropriate for permit level violations. *Lentine Aggregates v. Dept. of Environmental Protection*, 4 N.J.A.R. 117 (1981), affirmed per curiam Dkt. No. A-3424-80 (App.Div.1982).

### 7:9C-1.3 Construction

This chapter shall be liberally construed to permit the Department to implement its statutory functions.

Recodified from N.J.A.C. 7:9-6.3 by R.2005 d.368, effective November 7, 2005.

See: 36 N.J.R. 4374(b), 37 N.J.R. 4226(b).

### 7:9C-1.4 Definitions

The following words and terms, when used in this chapter, have the following meanings:

“ACL” means alternative concentration limit.

“Agricultural water” means water used for crop production, livestock, horticulture and silviculture.

“Alternative concentration limit” or “ACL” means a constituent standard or narrative description of actions, discharge controls and water quality requirements that is less stringent than the ground water quality requirements of N.J.A.C. 7:9C-1.7, 1.8 and 1.9 due to a Departmental decision pursuant to NJPDES regulations (N.J.A.C. 7:14A-10.8(b)). In order to approve an ACL, the Department must find that the relevant constituent standard(s) cannot be achieved through technologically practicable means.

“Applicable regulatory program” means any of the Department’s programs which implement the regulations issued pursuant to the statutes cited in N.J.A.C. 7:9C-1.1(b) or in any other regulations that specifically cite this chapter.

“Aquifer” means a saturated geologic formation(s) or unit(s) which is sufficiently permeable to transmit water to a pumping well in usable and economic quantities. The upper level of an unconfined aquifer may vary over time; “aquifer” applies to the full saturated zone at any time.

“Aquitard” means a hydrogeologic confining unit(s) that exhibits limited permeability, bounding one or more aquifers, that does not readily yield water to wells or springs, but may serve as a storage unit for ground water and may release this water to adjacent ground water units or surface waters. Such confining units are further defined and listed in N.J.A.C. 7:9C-1.5(f)1 or may be established through reclassification under N.J.A.C. 7:9C-1.10.

“Background water quality” means the concentration of constituents in ground water which is determined to exist directly upgradient of a discharge but not influenced by the discharge, or is otherwise representative of such concentration of constituents as determined using methods and analyses consistent with the requirements of N.J.A.C. 7:14A-10.11(g).

“Carcinogen” means a constituent capable of inducing a cancer response, including Group A (Human Carcinogen), Group B (Probable Human Carcinogen) or Group C (Possible Human Carcinogen) categorized in accordance with the USEPA Guidelines for Carcinogen Risk Assessment, 51 Fed. Reg. 33932, 1986, incorporated herein by reference, as amended or supplemented.

“Classification area” means the geographic extent (lateral and vertical) of a geologic formation(s) or unit(s) wherein ground water is classified for designated uses, as described in N.J.A.C. 7:9C-1.5.

“Classification exception area” means an area within which one or more constituent standards and designated uses are suspended in accordance with N.J.A.C. 7:9C-1.6.

“Conservation restriction” means the restricting of development on property as that term is defined under the New Jersey Conservation Restriction and Historic Preservation Restriction Act, N.J.S.A. 13:8B-1 et seq.

“Constituent” means a specific chemical substance (that is, element or compound) or water quality parameter (for example, temperature, odor, color).

“Constituent standard” means the required maximum level or concentration or the required range of levels or concentrations (as applicable) for a constituent in a classification area, as established in N.J.A.C. 7:9C-1.7, 1.8 and 1.9(a) and (b). The constituent standards shall be the basis for the Department’s regulation of ground water quality effects of past, present or future discharges to ground water or the land surface, pursuant to applicable authorities as defined in N.J.A.C. 7:9C-1.1.

“Conventional water supply treatment” means the chemical and physical treatment of ground water supplies for microbiological contaminants and undesirable naturally occurring substances resulting in treated water that meets all the primary and secondary standards for those constituents stipulated by the New Jersey Safe Drinking Water Act regulations (N.J.A.C. 7:10-12).

“Criteria” means ground water quality criteria.

“Department” means the New Jersey Department of Environmental Protection.

hanced within a ground water classification area, as determined by N.J.A.C. 7:9C-1.5. Designated uses may include

“Designated use” means a present or potential use of ground water which is to be maintained, restored and en-

2. Any interested party may provide evidence to the Department to demonstrate that an area meets the descriptive criteria of Class III-A. Upon review and verification of such evidence the Department may provide concurrence that the Class III-A classification applies to the area of interest.

3. Class III-B ground water consists of all geologic formations or units which contain ground water having natural concentrations or regional concentrations (through the action of salt-water intrusion) exceeding 3,000 mg/l Chloride or 5,000 mg/l Total Dissolved Solids, or where the natural quality of ground water is otherwise not suitable for conversion to potable uses. The designated uses for Class III-B ground water consist of any reasonable uses for such ground water other than potable water, using water of existing quality. The classification area includes ground water in parts of formations as indicated in Figures 3 through 5 in the Appendix.

4. Class III-B areas are subject to field verification wherever necessary. Areas not indicated on the maps may also qualify as Class III-B, subject to Department concurrence through an applicable regulatory program. The precise borders of Class III-B areas shall be confirmed using site specific data in the context of applicable regulatory programs. Any interested party may provide evidence to the Department to demonstrate that an area meets the descriptive criteria of Class III-B. Upon review and verification of such evidence the Department may provide concurrence that the Class III-B classification applies to the area of interest.

Petition for Rulemaking.

See: 30 N.J.R. 3552(b), 30 N.J.R. 4077(b).

Recodified from N.J.A.C. 7:9-6.5 by R.2005 d.368, effective November 7, 2005.

See: 36 N.J.R. 4374(b), 37 N.J.R. 4226(b).

Rewrote (a) and (c)-(e).

### 7:9C-1.6 Exceptions to the classification system

(a) The Department may establish a Classification Exception Area only when the Department determines that constituent standards for a given classification are not being met or will not be met in a localized area due to: natural quality; localized effects of a discharge approved through a NJPDES permit action; pollution caused by human activity within a contaminated site as defined by the Department in the context of an applicable regulatory program (for example, Site Remediation Program); or an ACL as approved by the Department pursuant to NJPDES. In the context of an applicable regulatory program, the Department shall determine or describe appropriate boundaries for each Classification Exception Area and include the written description of the boundaries in the appropriate permit action along with specifications as to which constituents the exception applies. Classification Exception Areas may only be established when constituent standards are not being met or will not be met due to the conditions set forth above and shall not be established

for the purpose of sanctioning violations of constituent standards.

(b) Where natural quality for any constituent contravenes the criteria established in N.J.A.C. 7:9C-1.7 such that the primary designated use is not viable within a limited area, the Department may establish a Classification Exception Area within which the Department shall define appropriate designated uses and constituent standards, based upon the natural quality. Such Classification Exception Areas shall remain in effect as long as the primary designated use of the original classification area is not viable using ground water at natural quality.

(c) Where the Department defines, through a NJPDES permit action, an area of temporary noncompliance with specific constituent standards related to the localized effects of a permitted discharge, the ground water within that area of non-compliance shall be a Classification Exception Area for those constituents only. All other constituent standards shall apply within the Classification Exception Area. All designated uses in these Classification Exception Areas will be suspended during the life of the Classification Exception Area. Constituent standards of the surrounding classification area shall apply at the perimeter of the Classification Exception Area for the specified constituents. The Classification Exception Area shall have the same life as the approved NJPDES permit action, after which the original classification, designated uses and constituent standards shall apply.

(d) Where a discharge has resulted or will result in localized ground water quality that contravenes one or more constituent standards, the Department may define that area as a Classification Exception Area for specified constituents pursuant to (or in accordance with) a NJPDES permit action or the remediation of a contaminated site in the context of an applicable regulatory program. All other constituent standards shall apply within the Classification Exception Area. All designated uses in each Classification Exception Area will be suspended during the life of the Classification Exception Area. Constituent standards of the surrounding classification area shall apply at the perimeter of the Classification Exception Area for the specified constituents. The Department shall restrict or require the restriction of potable ground water uses within any Classification Exception Area where there is or will be an exceedance of the Primary Drinking Water Quality Standards (in N.J.A.C. 7:10). Where the Department defines the Classification Exception Area through a NJPDES permit action, the Classification Exception Area shall have the same life as the approved NJPDES permit action, after which the original classification, designated uses and constituent standards shall apply. Other regulatory actions creating the Classification Exception Area shall specify the longevity of the exception, after which the original classification, designated uses and constituent standards shall be applicable.

Recodified from N.J.A.C. 7:9-6.6 by R.2005 d.368, effective November 7, 2005.

See: 36 N.J.R. 4374(b), 37 N.J.R. 4226(b).

Special amendment, R.2009 d.361, effective November 4, 2009 (to expire May 4, 2011).  
 Sec: 41 N.J.R. 4467(a).

In (a), deleted "Oversight Document" following "Program" and "oversight document or" following "appropriate"; and in (d), substituted "the remediation of a contaminated site" for "a Department-approved remedial action".

**Case Notes**

Department of Environmental Protection's arsenic discharge standard refers to more than just inorganic arsenic. Matter of Vineland Chemical Co. (Vichem), 243 N.J.Super. 285, 579 A.2d 343 (A.D.1990) certification denied 127 N.J. 323, 604 A.2d 598.

Department of Environmental Protection could interpret administrative consent order to allow elevated arsenic discharge during testing only after the department determined that the manufacturer could achieve the lower standard. Matter of Vineland Chemical Co. (Vichem), 243 N.J.Super. 285, 579 A.2d 343 (A.D.1990) certification denied 127 N.J. 323, 604 A.2d 598.

**7:9C-1.7 Ground water quality criteria**

(a) Ground water quality criteria for Class I-A areas are the natural quality for each constituent. Class I-A is a non-degradation classification where natural quality is to be maintained or restored. The Department shall not approve any discharge to ground water or approve any human activity which results in a degradation of natural quality within a Class I-A classification area.

(b) Ground water quality criteria for Class I-PL are as follows:

1. Within Class I-PL (Preservation Area), ground water quality criteria shall be the natural quality for each constituent. Class I-PL (Preservation Area) is a nondegradation classification in which natural quality shall be maintained or restored. The Department shall not approve any discharge or any other activity which would result in the degradation of natural quality within a Class I-PL (Preservation Area) classification area. However, the provisions of this paragraph (b)1 shall not apply to activities that are in conformance with N.J.A.C. 7:50-6 et seq.

2. Ground water quality criteria for Class I-PL (Protection Area) shall be the background water quality. The Department shall not approve any discharge or any other activity which would result in the degradation of background water quality in the Class I-PL (Protection Area) classification area. However, the provisions of this para-

graph (b)2 shall not apply to activities that are in conformance with N.J.A.C. 7:50-6 et seq.

3. The Department shall not approve any discharge to ground water within the Class I-PL classification area which results in a violation of the Surface Water Quality Standards applicable to the Pinelands National Reserve, as established in N.J.A.C. 7:9B or successor rules.

(c) Ground water quality criteria for Class II-A areas are established as follows:

1. Specific criteria for ground water quality in Class II-A areas are listed in Appendix Table I.

2. The Department may establish an interim specific criterion, pursuant to (c)3 below, for a constituent not listed in Appendix Table I.

i. The Department shall maintain and make available to the public on its website and by request a listing of all interim specific criteria and the supplemental information used in their derivation.

ii. Interim specific criteria shall be replaced with specific criteria as soon as reasonably possible by rule.

3. The Department shall establish ground water quality criteria as follows:

i. If the Department promulgates in the Safe Drinking Water Act rules at N.J.A.C. 7:10 a maximum contaminant level (MCL) for a constituent, the health-based level used to establish the MCL shall be the specific ground water quality criterion for the constituent.

ii. For all other constituents, the Department shall develop ground water quality criteria for Class II-A ground water based upon the weight of evidence available regarding each constituent's carcinogenicity, toxicity, public welfare or organoleptic effects, as appropriate for the protection of potable water, pursuant to (c)4 below.

4. The Department shall use the following equations, data sources and conventions at i through iii below to derive specific and interim specific ground water quality criteria:

i. For constituents categorized as carcinogens, the criteria shall be derived using the following equation:

$$\text{Criterion } (\mu\text{g/L}) = \frac{\text{Upper Bound Lifetime Excess Cancer Risk} \times \text{Average Adult Weight} \times \text{Conversion Factor}}{\text{Carcinogenic Slope Factor} \times \text{Assumed Daily Water Consumption}}$$

Where the default values are:

- Average Adult Weight = 70 kg
- Assumed Daily Water Consumption = two liters per day
- Upper Bound Lifetime Excess Cancer Risk =  $1 \times 10^{-6}$