

## 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), 5057(a), 5636(a), and 37 N.J.R. 4226(b).

## Chapter Expiration Date

Chapter 9C, Ground Water Quality Standards, expires on October 4, 2010.

## 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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## APPENDIX

## 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 re-

quirements 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 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.

## 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.

“Antidegradation” means a policy to ensure that existing ground water quality (that currently is of higher quality than the water quality criteria in N.J.A.C. 7:9C-1.7) is not degraded to the criteria by discharges, but rather remains at a better quality ranging from natural quality at the most stringent, to a limited allowance for degradation at the least stringent. “Non-degradation” is the most stringent case of the antidegradation policy. It prohibits any degradation of ground water quality below existing background water quality by a discharge.

“Antidegradation limit” is the numerical expression (in terms of a concentration or level of a constituent in ground water) of the antidegradation policy.

“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.

“Designated use” means a present or potential use of ground water which is to be maintained, restored and enhanced within a ground water classification area, as determined by N.J.A.C. 7:9C-1.5. Designated uses may include any human withdrawal of ground water (for example, for potable, agricultural and industrial water), the discharge of ground water to surface waters of the State which support human use or ecological systems, or the direct support of ecological systems.

“Discharge” means an intentional or unintentional action or omission resulting in the releasing, spilling, leaking, pumping, pouring, emitting, emptying or dumping of a pollutant at any time into the waters of the State, onto land or into wells from which it might flow or drain into said waters, or into waters or onto lands outside the jurisdiction of the State, which pollutant enters the waters of the State. “Discharge” includes, without limitation, the release of any pollutant into a municipal treatment works.

“Discharger” means any person, corporation, municipality, government agency or authority or other legal entity, who causes or allows a discharge, either through action or omission.

“Extensive exceedance,” as used in N.J.A.C. 7:9C-1.10, means a condition where ground water quality in an area exceeds the criteria of N.J.A.C. 7:9C-1.7 for one or more constituents over the vast majority subject area for such constituent(s) and that such exceedances are not attributable to the past or present discharges of a single discharger or any group of active NJPDES permitted discharges.

“FW1” means those surface fresh waters defined as such in the Surface Water Quality Standards, N.J.A.C. 7:9B, and shown on maps maintained by the Department.

“Ground water” means the portion of water beneath the land surface that is within the saturated zone.

“Ground water quality criteria” means the designated levels or concentrations of constituents that, when exceeded, will prohibit or significantly impair a designated use of water. Criteria may be “specific” (listed for each constituent in Appendix Table 1), “interim specific” (derived using a standard method, for constituents not listed in Appendix Table 1), or “interim generic” (as listed for carcinogenic and non-carcinogenic Synthetic Organic Chemicals in Appendix Table 2).

“Hazardous pollutant” means:

1. Any toxic pollutant;
2. Any substance regulated as a pesticide under the Federal Insecticide, Fungicide and Rodenticide Act, Pub.L.92-516 (7 U.S.C. § 136 et seq.);
3. Any substance the use or manufacture of which is prohibited under the Federal Toxic Substances Control Act, Pub.L.94-469 (15 U.S.C. § 2601 et seq.);
4. Any substance identified as a known carcinogen by the International Agency for Research on Cancer;
5. Any hazardous waste as designated pursuant to section 3 of P.L. 1981, c.279 (N.J.S.A. 13:1E-51) or the “Resource Conservation and Recovery Act,” Pub.L.94-580 (42 U.S.C. § 6901 et seq.); or
6. Any hazardous substance as defined pursuant to section 3 of P.L. 1976, c.141 (N.J.S.A. 58:10-23.11b).

“Industrial water” means water used for processing, heating or cooling in a manufacturing process.

“Natural Area” means an area of land or water, designated by the Department under N.J.A.C. 7:5A-1.13 and shown on maps maintained by the Office of Natural Lands Management, Division of Parks and Forestry, of the Department, which is owned in fee simple or in which a conservation restriction is held by the Department.

“Natural quality” means the concentration or level of constituents which occurs in ground water of a hydrologic unit without the influence of human activity, other than the effects of regional precipitation of air pollutants (for example, acid precipitation). The natural quality for SOCs is established as zero (0.0) except where the SOCs are the result of air transport from outside the State, enter the State from ground water transport of pollutants having their origins in other states, or are created entirely by natural processes. Where natural quality for other constituents is not ascertainable from generally acceptable scientific studies, the lowest concentrations known to exist within the same or a similar hydrologic unit and setting (that is, depth) within the classification area shall be used to represent the natural quality, provided, however, that for pH, corrosivity and hardness, the most representative concentration shall be used.

“NJPDES” means the New Jersey Pollutant Discharge Elimination System (N.J.A.C. 7:14A).

“NJPDES permit action” means a draft or final NJPDES permit, a permit equivalent, or a decision that a discharge is not to be regulated by NJPDES, as determined pursuant to the NJPDES regulations.

“Non-carcinogen” means a constituent not categorized as a carcinogen, including Group D (Not Classifiable as to Human Carcinogenicity) or Group E (Evidence of Non-Carcinogenicity for Humans) categorized in accordance with the

USEPA Guidelines for Carcinogen Risk Assessment, 51 Fed. Reg. 33932, 1986, incorporated herein by reference, as amended or supplemented.

“Organoleptic effect” means an offensive taste, foul odor or other adverse aesthetic consequence caused by pollutants in a water supply and rendering the water supply unfit for potable use.

“PQL” means practical quantitation level.

“Pollutant” means any dredged spoil, solid waste, incinerator residue, sewage, garbage, refuse, oil, grease, sewage sludge, munitions, chemical wastes, biological materials, radioactive substance, thermal waste, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal or agricultural or other residue discharged into the waters of the State. “Pollutant” includes both hazardous and nonhazardous pollutants. “Industrial, municipal or agricultural or other residue” specifically includes, without limitation, constituents that are not considered wastes (that is, process chemicals) prior to discharge, but which are discharged and may or do degrade natural or existing ground water quality.

“Potable water” means water suitable for household consumption, primarily as drinking water, based upon human health, welfare and aesthetic considerations.

“Practical quantitation level” (PQL) means the lowest concentration of a constituent that can be reliably achieved among laboratories within specified limits of precision and accuracy during routine laboratory operating conditions. “Specified limits of precision and accuracy” are the criteria which have been included in applicable regulations including, but not limited to, those regulations listed at N.J.A.C. 7:9C-1.9 or are listed in the calibration specifications or quality control specifications of an analytical method.

“Saturated zone” means the zone in which all the subsurface voids in the rock or soil are filled with water.

“SOC” means Synthetic Organic Chemical.

“Soils” means any naturally occurring or man-made unconsolidated mineral and organic matter on the surface of the earth that has been subjected to and influenced by geologic and environmental factors. “Soils” also includes fill or overburden.

“Source water” means the supply source of water (for example, private wells, public water supply) to a discharger, where the source water becomes part of a discharge.

“Surface waters” means water at or above the land’s surface which is neither ground water nor contained within the unsaturated zone, including, but not limited to, the ocean and its tributaries, all springs, streams, rivers, lakes, ponds, wetlands, and artificial waterbodies.

“Synthetic organic chemicals” (SOCs) means any compounds that contain at least one carbon atom and that result

from purposeful chemical synthesis, whether as products, by-products, or waste, or from the purposeful refinement of naturally occurring substances. Where a chemical substance is sometimes found in nature and sometimes synthesized, it shall be considered an SOC only to the extent or in the proportion produced or isolated by human activity. Naturally occurring organic chemicals in their natural location are not considered a pollutant pursuant to the Ground Water Quality Standards. An SOC may be considered to be in its natural location, if, by background sampling and modeling, it is shown that such SOC has migrated to that point from the place it naturally occurred.

“Technologically practicable means” means the best available treatment or remedial technology, from an engineering perspective; “best” means that technology which achieves the most stringent numerical values attainable for a constituent at a contaminated site or for a NJPDES-regulated discharge; “available” means field-demonstrated technology although such technology need not be in common commercial use.

“Toxic pollutant” means any pollutant identified pursuant to the Federal Water Pollution Control Act Amendments of 1972 (Pub.L.92-500, 33 U.S.C. § 1251 et seq.), or any pollutant or combination of pollutants, including disease causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly or indirectly by ingestion through food chains, will, on the basis of information available to the Department, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformation, in such organisms or their offspring.

“USEPA” means the United States Environmental Protection Agency.

“Unsaturated zone” (vadose zone) means the subsurface volume between the land’s surface and the top of a saturated zone.

“Waters of the State” means the ocean and its estuaries, all springs, streams and bodies of surface or ground water, whether natural or artificial, within the boundaries of this State or subject to its jurisdiction.

“Zone of Contribution” means the volume of a geologic formation or unit that directly contributes ground water to a pumping well over time, or a Well Head Protection Area as defined by the Department pursuant to the Federal Safe Drinking Water Act, Amendments of 1986.

Administrative Corrections to “constituent,” “hazardous pollutant”.

See: 25 N.J.R. 1552(a).

Amended by R.1993 d.610, effective December 6, 1993.

See: 24 N.J.R. 3983(a), 25 N.J.R. 5569(a).

Recodified from N.J.A.C. 7:9-6.4 by R.2005 d.368, effective November 7, 2005.

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

Added definitions "Carcinogen", "Conservation restriction", "Ground water quality criteria" and "Non-carcinogen"; deleted definition "Water quality criteria".

### 7:9C-1.5 Ground water classification system and designated uses

(a) Ground water is classified according to the hydrogeologic characteristics of the ground water resource and the designated use(s) which are to be maintained, restored and enhanced within the classification area. Classifications are regional in nature and do not reflect localized infringements on designated uses due to natural quality or pollution incidents. Ground water users should not assume that existing ground water quality everywhere meets the criteria for classification areas established herein, in view of the potential for variations in natural quality or for localized pollution caused by human activity. Additional uses may be made of ground water in any classification area, subject to applicable Department rules, but these uses are not directly protected through this chapter.

(b) The Department shall preferentially protect the primary designated use for each classification area, and shall protect any secondary designated uses to the extent that such uses are viable using water of sufficient quality for the primary use and that the primary use is not impaired.

(c) There are three major classes of ground water, as defined in (d) through (f) below. They are:

- Class I Ground Water of Special Ecological Significance
- Class II Ground Water for Potable Water Supply
- Class III Ground Water With Uses Other Than Potable Water Supply

(d) The primary designated use for Class I ground water is the maintenance of special ecological resources supported by the ground water within the classification area. Secondary designated uses are potable water, agricultural water and industrial water to the extent that these uses are viable using water of natural quality and do not impair the primary use, such as by altering ground water quality.

1. Class I-A—Exceptional Ecological Areas: Class I-A ground water consists of all ground waters within those classification areas listed at (d)1iii below or designated by the Department through the reclassification procedure in N.J.A.C. 7:9C-1.10, which satisfy either (d)li or ii below. In addition, ground waters within those areas listed in (d)liii below are classified as Class I-A ground waters, because the Department has determined that they satisfy the requirements of either (d)ji or ii below. The Department may approve a Class I-A classification area if the ground water within that area:

i. Contributes to the transmittal of ground water to surface water in FW1 watersheds; and

(1) The area involved is under government ownership (fee simple or conservation restriction); or

(2) Is owned by a private entity that petitions the Department for reclassification of the property to Class I-A pursuant to N.J.A.C. 7:9C-1.10; or

ii. Contributes to the transmittal of ground water to the land surface or to surface water in areas of exceptional ecological value. Areas of exceptional ecological value satisfy the conditions described in (d)lii(1), (2) or (3) below, and also satisfy the conditions described in both (d)lii(4) and (5) below:

(1) Support threatened or endangered species as determined by the United States Department of the Interior pursuant to the Endangered Species Act, 16 U.S.C. 1531 et seq., or by the Department pursuant to the Endangered and Nongame Species Conservation Act, N.J.S.A. 23:2A-1 et seq.

(2) Support biotic communities within Natural Areas.

(3) Serve other exceptional ecological values such as being a part of or supporting state, nationally or internationally rare, threatened or endangered habitats where there is a significant risk that ground water pollution would impair or imperil the ecological values.

(4) The quality and transmittal of ground water is essential to the survival or maintenance of the exceptional ecological resource contained within the classification area.

(5) The area involved is of sufficient size to provide meaningful control of ground water quality to protect the target resource, based upon the biotic resource and local hydrogeology and is under government ownership (fee simple or conservation restriction), or is owned by a private entity that petitions the Department for reclassification of the property to Class I-A pursuant to N.J.A.C. 7:9C-1.10.

iii. Ground water within the following areas are herein classified Class I-A:

(1) Watersheds of FW1 surface waters;

(2) The Natural Areas as designated by the Department pursuant to N.J.A.C. 7:5A-1.13.

2. Class I-PL—Pinelands: The classification area for Class I-PL consists of all ground water in the Cohansey and Kirkwood Formations located within the Pinelands area as designated by the Pinelands Protection Act, N.J.S.A. 13:18A-1 et seq. (as indicated in figure 1 in the Appendix, incorporated herein by reference), other than those ground water areas classified as Class I-A.

i. Class I-PL (Preservation Area): The primary designated use is the support and preservation of unique and significant ecological resources of the Pinelands, through the restoration, maintenance and preservation of

ground water quality in its natural state. Secondary designated uses include compatible agricultural uses in conformance with N.J.A.C. 7:50-6 et seq. and potable water uses.

ii. Class I-PL (Protection Area): The primary designated use is the preservation of Pinelands plant and animal species and their habitats through the protection and maintenance of the essential characteristics of Pinelands ground water quality. Secondary designated uses include potable and agricultural water.

(e) The primary designated use for Class II ground waters is the provision of potable ground waters with conventional water supply treatment, either at their current water quality (Class II-A) or subsequent to enhancement or restoration of regional water quality so that the water will be of potable quality with conventional water supply treatment (Class II-B). Both existing and potential potable water uses are included in the designated use.

1. Class II-A shall consist of all ground water of the State, except for ground water designated in Classes I, II-B or III. The primary designated use for Class II-A ground water shall be potable water and conversion (through conventional water supply treatment, mixing or other similar technique) to potable water. Class II-A secondary designated uses include agricultural water and industrial water.

2. Specific Class II-B areas, designated uses and constituent standards will be established through rule or through reclassification pursuant to N.J.A.C. 7:9C-1.10. The designated uses of Class II-B areas generally may include any reasonable use (other than potable use). Designated uses of Class II-B ground water shall not exacerbate existing ground water pollution or impede the ability to enhance or restore the quality of the ground water so that it will be potable or convertible to potable use with conventional water supply treatment, mixing or other similar techniques. Class II-B shall consist only of ground waters:

i. That exhibit extensive exceedance of one or more of the ground water quality criteria in N.J.A.C. 7:9C-1.7(c) within the proposed Class II-B area, due to past discharges of ground water pollutants;

ii. Where restoration of the ground water, where polluted, cannot be achieved using technologically practicable means;

iii. Where the conditions listed in (e)2(1) through (4) below exist within the proposed Class II-B area, and there is no indication in the projections of the Department, public water supply systems serving the area, or municipalities of the area that those conditions will cease to exist within the next 25 years:

(1) No public community water supply well or Zone of Contribution for such a well exists;

(2) Less than five percent of the potable water supply for the area subject to the petition is derived from ground water from within the proposed Class II-B area;

(3) Less than five percent of the potable water supply for any municipality (or portion thereof) within the Class II-B area is derived from ground water from within the proposed Class II-B area; and

(4) No significant concentration of domestic water supply wells exists;

iv. Where no significant risk of pollution migration into Class I or II-A areas exists;

v. Where a reliance on natural attenuation processes can be relied on over the vast majority of the area for the restoration of ground water quality for criteria identified pursuant to (e)2i above and does not pose a significant risk to public health, safety and welfare; and

vi. Where the reclassification requirements of N.J.A.C. 7:9C-1.10 are met.

### 3. Class II-B Classification Areas—(Reserved)

(f) The Class III ground waters are not suitable for potable water due to natural hydrogeologic characteristics or natural water quality. Class III includes geologic formations or units that are aquitards or have a natural quality that is unsuitable for conversion to potable water (for example, saline ground water).

1. Class III-A ground water consists of ground water in those aquitards that are described below. The primary designated use for Class III-A ground water is the release or transmittal of ground water to adjacent classification areas and surface water, as relevant. Secondary designated uses in Class III-A include any reasonable uses. Class III-A ground water includes portions of the saturated zones (that meet the criteria below) of the Woodbury Formation, Merchantville Formation, Marshalltown Formation, Navesink Formation, Hornerstown Formation, aquitard formations of the Potomac-Raritan-Magothy aquifer system and the Kirkwood aquifer system, portions of the glacial moraine and glacial lake deposits, and other geologic units having the characteristics of an aquitard, excepting Class I areas. These named aquitards (excluding glacial units) outcrop approximately in municipalities depicted in Figure 2 in the Appendix. Class III-A areas shall have the following characteristics:

i. Average at least 50 feet in thickness within the Class III-A area;

ii. Have a typical hydraulic conductivity of approximately 0.1 ft/day or less within the Class III-A area; and

iii. Have an areal extent within the Class III-A area of at least 100 acres.

Conversion Factor = 1,000 µg/mg  
 Carcinogenic Slope Factor = value from the United States Environmental Protection Agency (USEPA) Integrated Risk Information System (IRIS) data base, <http://www.epa.gov/iris/>, incorporated herein by reference, as (mg/kg/day)<sup>-1</sup>

ii. For constituents classified as non-carcinogens and for constituents classified as carcinogens for which no carcinogenic slope factor is applicable, the criterion shall be derived using the following equation:

$$\text{Criterion } (\mu\text{g/L}) = \frac{\text{Reference Dose} \times \text{Average Adult Weight} \times \text{Conversion Factor} \times \text{Relative Source Contribution}}{\text{Assumed Daily Water Consumption} \times \text{Uncertainty Factor}}$$

Where the default values are:

Average Adult Weight = 70 kg  
 Relative Source Contribution = 20 Percent  
 Assumed Daily Water Consumption = two liters per day  
 Conversion Factor = 1,000 µg/mg  
 Reference Dose = value from the USEPA IRIS data base, <http://www.epa.gov/iris/>, incorporated herein by reference, as (mg/kg/day)  
 Uncertainty Factor = 10 for carcinogens for which no carcinogenic slope factor is applicable; 1 for non-carcinogens

iii. The criteria derived by the equations in this paragraph shall be rounded to one significant figure.

5. The Department shall publish in the New Jersey Register a notice of administrative change subsequent to November 7, 2005:

i. To modify or add a new specific criterion to Appendix Table 1 when the Department promulgates in the Safe Drinking Water Act rules at N.J.A.C. 7:10 a new or revised maximum contaminant level (MCL) for a ground water constituent; or

ii. To modify a specific criterion in Appendix Table 1 where the USEPA revises the carcinogenic slope factor or reference dose data contained in the Integrated Risk Information System (IRIS) database on which a specific ground water quality criterion in Appendix Table I is based.

iii. The notice of administrative change shall identify the constituent, the basis for the administrative change and the revised criterion to be listed in Appendix Table 1.

6. For a Synthetic Organic Chemical not listed in Appendix Table 1, the applicable interim generic criterion in Appendix Table 2 shall apply until an interim specific criterion is developed or a specific criterion is promulgated in accordance with this subsection.

(d) The ground water quality criteria for Class II-B ground waters shall be the Class II-A criteria.

(e) The ground water quality criteria for Class III-A areas shall be the criteria of the most stringent classification for vertically or horizontally adjacent ground waters that are not Class III-A, unless the Department concludes (in the context of an applicable regulatory program) that there is no significant potential for the migration of ground water pollutants to that classification area. If there is significant potential for pollutant migration, the criteria shall be those of the classification area determined to be downgradient of the Class III-A area. If there is no significant potential for pollutant migration, criteria shall be determined for such Class III-A areas on a case by case basis in the context of applicable regulatory programs. In each case where there is no significant potential for pollutant migration, the criteria shall be no more stringent than necessary to ensure that there will be no:

1. Impairment of existing uses of the ground water;
2. Resulting violation of Surface Water Quality Standards;
3. Release of pollutants to the ground surface, structures or air in concentrations that pose a threat to human health;
4. Reasonable potential for a change in hydraulic gradient that could cause pollutants to migrate from the Class III-A area to any classification area other than Class III.

(f) The ground water quality criteria for Class III-B areas shall be determined on an area by area basis in response to case by case needs, in the context of applicable regulatory programs. In each case, the criteria shall be no more stringent than necessary to ensure that there will be no:

1. Impairment of existing uses of ground water;
2. Resulting violation of Surface Water Quality Standards;
3. Release of pollutants to the ground surface, structures or air in concentrations that pose a threat to human health;
4. Violation of constituent standards for downgradient classification areas to which there is a significant potential for migration of ground water pollutants.

(g) Where ground water that receives pollutants from a discharge(s) subsequently flows to surface waters, the Department shall regulate such discharges as necessary so as not to exceed the Surface Water Quality Standards applicable to that body of surface water. The discharger may request application of only the ground water quality standards by showing, to the satisfaction of the Department, and in the context of the applicable regulatory procedure, that the flow of ground water pollutants into the surface water will not cause a violation of the Surface Water Quality Standards.

(h) For constituents for which specific or interim specific criteria have been derived, the Department may evaluate potential toxicological interactions between or among constituents in ground water by the sum of the risk levels of constituents with health-based criteria that are based on carcinogenic risk, and by utilizing the hazard index approach described in the USEPA Guidelines for the Health Risk Assessment of Chemical Mixtures (51 FR 34014 (1986), and any subsequent revisions) for non-carcinogens. Additional actions and more stringent criteria may be required when either of the following conditions exists:

1. The total risk level for all carcinogens present in ground water exceeds  $1 \times 10^{-4}$ ; or
2. There is a Hazard Index of greater than one for non-carcinogenic effects.

(i) The Department shall regulate discharges for compliance with each specific, interim specific and generic criterion applicable to the discharge pursuant to this section.

Petition for Rulemaking.  
See: 27 N.J.R. 388(b).  
Recodified from N.J.A.C. 7:9-6.7 by R.2005 d.368, effective November 7, 2005.  
See: 36 N.J.R. 4374(b), 37 N.J.R. 4226(b).  
Rewrote (a)-(c), and (h).

#### 7:9C-1.8 Antidegradation policy

(a) The Department shall protect from significant degradation ground water which is of better quality than the criteria in N.J.A.C. 7:9C-1.7. Antidegradation limits shall be used as the basis for the development of constituent standards applicable to discharges, as modified by N.J.A.C. 7:9C-1.9(a) and (b). Where the concentration of a constituent at background water quality currently contravenes the criteria in N.J.A.C.

7:9C-1.7, no further degradation of ground water quality shall be allowed for that constituent.

(b) For constituents whose concentrations in background water quality are less than the ground water quality criteria in N.J.A.C. 7:9C-1.7 (excluding those constituents whose criteria are expressed as a range of concentrations), the antidegradation limits shall be determined by adding to background water quality concentration the difference between the ground water quality criterion and the background water quality concentration times the following percentages for each of the corresponding classes of ground water as follows:

Class I-A	0%
Class I-PL	0%
Class II-A	50%

The calculation of antidegradation limits may be represented by the following formula:

$$\text{Constituent Standard} = \text{BWQ} + (\text{GWQC} - \text{BWQ}) \times \%$$

where BWQ is the background water quality for a given constituent, GWQC is the ground water quality criterion and % is the antidegradation factor given above.

(c) The antidegradation limits for Class II-B are equal to the Class II-B criteria stated in N.J.A.C. 7:9C-1.7(d). Where the concentration of a constituent at background water quality currently contravenes the criteria, no further degradation of ground water quality shall be allowed for that constituent.

(d) The antidegradation limits for Class III-A are equal to the Class III-A criteria established pursuant to N.J.A.C. 7:9C-1.7(e).

(e) The antidegradation limit for Class III-B is equal to the Class III-B criteria established pursuant to N.J.A.C. 7:9C-1.7(f).

Administrative Correction to (b).

See: 25 N.J.R. 1552(a).

Recodified from N.J.A.C. 7:9-6.8 by R.2005 d.368, effective November 7, 2005.

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

#### 7:9C-1.9 Constituent standard modifications and practical quantitation levels

(a) When constituents at background water quality exceed the criteria in N.J.A.C. 7:9C-1.7, the Department shall consider the following modifications in the development of constituent standards in the context of applicable regulatory programs:

1. For discharges that derive their source water from directly upgradient of the discharge, the constituent standards shall not be more stringent than the background water quality (that is, the source water quality);
2. For other discharges: