

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

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.

7:9-6.6 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 Oversight Document); 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 oversight document or 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. 7:9-6.7 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 noncompliance 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 a Department-approved remedial action 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.

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.

7:9-6.7 Ground water quality criteria

(a) Ground water quality criteria for Class I-A areas shall be the natural quality for each constituent. Class I-A is a nondegradation classification where natural quality shall be maintained or restored. The Department shall not approve any discharge to ground water nor 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 paragraph (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. 7:9-4 or successor rules.

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

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

2. Where a specific criterion is not listed for a constituent in Table 1, the Department may establish interim specific 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 the potable water use. Interim specific criteria may be established on a case by case basis using the methods listed in (c)3 below, which are the same methods applied to the development of the specific criteria in Table 1. Interim specific criteria shall be replaced with specific criteria as soon as reasonably possible by rule.

3. Interim specific criteria may be derived by the Department for any constituent, in accordance with the methodologies in (c)5 below, and using the risk assessment approach in (c)4 below. The Department shall maintain and make available to the public a listing of all interim specific criteria and the supplemental information used in their derivation.

i. The human health-based criteria are derived from the toxicity factor (carcinogenic potency slope or Reference Dose), the exposure assumptions for drinking water and a relative source contribution factor (for non-carcinogens) which is used to account for the contribution from other sources of exposure including air and food. The Department assumes a 20 per cent relative source contribution factor when sufficient quantitative data are not available on the contribution of each source of exposure. Data sources for carcinogenic potency slope or Reference Dose shall be used in the following order of priority:

(1) Information which forms the basis for drinking water standards adopted by the Department pursuant to the Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq.;

(2) The United States Environmental Protection Agency (USEPA) Integrated Risk Information System (IRIS) data base;

(3) The USEPA's Health Effects Assessment Summary Tables (HEAST);

(4) The Department may develop health-based criteria which differ from those based on the sources cited in (c)3i(1) through (3) above if warranted by convincing scientific evidence. For contaminants which are not addressed in the sources cited in (c)3i(1) through (3) above, the Department may develop health-based criteria based on review of pertinent scientific data.

ii. The final calculations are rounded to one significant figure for deriving the criteria for each chemical.

4. The risk assessment approach for derivation of the health-based criteria for each contaminant will be determined by its strength of evidence (see 50 FR 46880, 46884-86 (1985), National Primary Drinking Water Regulations, Volatile Synthetic Organic Chemicals, and any successor documents) for human carcinogenicity, the risk levels given below, and the exposure assumptions and models listed in (c)3 above.

i. For contaminants classified in Group A or Group B, the Class II-A criteria are calculated from the potency factor based on additional lifetime cancer risk of 1×10^{-6} .

ii. For contaminants classified in Group C, the Class II-A criteria are calculated by application of an additional uncertainty factor of 10 to the chronic reference dose. If no reference dose is available from the sources cited in (c)3i above, the Class II-A criteria are calculated from the potency factor or unit risk factor based on additional lifetime cancer risk of 1×10^{-5} .

iii. For contaminants classified in Group D or Group E, the Class II-A criteria are calculated from the chronic reference dose.

iv. For lead, the Department has determined that a Class II-A criterion of five $\mu\text{g/L}$ is appropriate as a conservative application of the regulations of the United States Environmental Protection Agency seeking a maximum concentration of five $\mu\text{g/L}$ in drinking water subsequent to treatment.

5. The following equations shall be used for the derivation of interim specific criteria for each constituent:

i. For Carcinogens:

$$\text{Criterion} = \frac{(1 \times 10^{-6}) \times 70 \text{ kg} \times 1000 \text{ ug/mg}}{q_1^* (\text{mg/kg/day})^{-1} \times (2 \text{ L/day})}$$

Where:

- 1×10^{-6} = upper bound lifetime excess cancer risk
(1×10^{-5} used for Group C chemicals lacking RfD)
- 70 kg = assumed weight of average adult
- q_1^* = carcinogenic potency factor (mg/kg/day)⁻¹
- 2 L/day = assumed daily water consumption
- q_1^* = Risk/Dose

$$q_1^* (\text{mg/kg/day})^{-1} = \frac{1 \times 10^{-6}}{\text{animal dose} (\text{mg/kg/day}) \times (W_A/W_H)^{1/3}}$$

Where:

- 1×10^{-6} = risk level
- animal dose = dose to experimental animals predicted to result in 1×10^{-6} risk
- $(W_A/W_H)^{1/3}$ = factor for extrapolating from animals to humans based on body surface area
- W_A = assumed weight of animal:
for mice - 0.03 kg
for rats - 0.35 kg
- W_H = assumed weight of human = 70 kg
For mice $(W_A/W_H)^{1/3} = 0.075$
For rats $(W_A/W_H)^{1/3} = 0.17$

ii. For non-carcinogens:

$$\text{Criterion} = \frac{\text{RfD} (\text{mg/kg/day}) \times 70 \text{ kg} \times 1000 \text{ ug/mg} \times \text{RSC}}{2 \text{ L/day}}$$

Where:

- RFD = Reference Dose
- 70 kg = assumed weight of average adult
- RSC = relative source contribution
- 2 L/day = assumed daily water consumption

6. Where no specific criterion exists for a Synthetic Organic Chemical, the interim generic criteria for Synthetic Organic Chemicals in Table 2 in the Appendix shall apply until an interim specific criterion has been established in accordance with (c)1, 2, 3, 4, and 5 above.

(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 applica-

ble 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 contaminants in ground water by the sum of the risk levels of contaminants 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 noncarcinogens. Additional actions and more stringent criteria may be required when either of the following conditions exists:

1. The total risk level for all Group A or Group B contaminants present in ground water exceeds 1×10^{-4} ; or
2. There is a Hazard Index of greater than one for noncarcinogenic 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).

7:9-6.8 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. 7:9-6.7. Antidegradation limits shall be used as the basis for the development of constituent standards applicable to discharges, as modified by N.J.A.C. 7:9-6.9(a) and (b). Where the concentration of a constituent at background water quality currently contravenes the criteria in N.J.A.C. 7:9-6.7, 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. 7:9-6.7 (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. 7:9-6.7(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. 7:9-6.7(e).

(e) The antidegradation limit for Class III-B is equal to the Class III-B criteria established pursuant to N.J.A.C. 7:9-6.7(f).

Administrative Correction to (b).
See: 25 N.J.R. 1552(a).

7:9-6.9 Constituent standard modifications and practical quantitation levels

(a) When constituents at background water quality exceed the criteria in N.J.A.C. 7:9-6.7, 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:
 - i. In areas where the criteria for the constituent are exceeded within the area due to natural quality, the constituent standards shall be established as the background water quality.
 - ii. In other areas, the constituent standards shall be established such that the volume and concentration of ground water exceeding the criteria are not increased by discharges.

(b) The Department may define Classification Exception Areas as provided for in N.J.A.C. 7:9-6.6 within which the provisions of N.J.A.C. 7:9-6.7, 6.8 and (a) above do not apply regarding specified constituents.