



01.01-09/22/88-02000

State of North Carolina  
Department of Natural Resources and Community Development  
Wilmington Regional Office

James G. Martin, Governor  
S. Thomas Rhodes, Secretary

Bob Jamieson

September 22, 1988

Colonel T. J. Dalzell  
Assistant Chief of Staff, Facilities  
Marine Corps Base  
Building 1  
Camp Lejeune, North Carolina 28542-5001

Re: Review and Comment  
Characterization, Confirmation and  
Feasibility Reports  
Hadnot Point Industrial Area  
Camp Lejeune, North Carolina  
Onslow County

Dear Colonel Dalzell:

This letter is intended to provide you with our comments on the subject reports.

The principal comment involves the target concentrations that your consultant, ESE, has proposed for the remediation of the contaminant plumes. As you may know, the North Carolina Groundwater Classifications and Standards (15 NCAC 2L) is now being revised. Major revisions include the establishment, for the first time, of numerical standards for the following constituents encountered in Class GA groundwater:

<u>Constituent</u>	<u>Proposed Standard (ppm)</u>
benzene	0.00070
chloroform	0.00019
trans-1, 2-dichloroethene	0.07000
ethylbenzene	0.02900
methylene chloride	0.00500
methyl ethyl ketone	0.17000
tetrachloroethene	0.00070

Colonel T. J. Dalzell  
September 22, 1988  
Page Two

(Continued)

<u>Constituent</u>	<u>Proposed Standard (ppm)</u>
toluene	1.00000
1,1,1-trichloroethane	0.20000
trichloroethene	0.00280
vinyl chloride	0.000015
xylene	0.40000

Since the source(s) in this instance are unpermitted, these standards will apply to Class GA groundwater directly underneath the source(s). By definition, there is no compliance boundary for unpermitted sources. Also, you should note that in the proposed revisions to 2L that the GB class has been eliminated.

Also, where no numerical standard exists for a constituent, descriptive standards then apply. Here, the standards revolve around the "suitability of the water for drinking," which means that if ingested into the human body, this quality of water will not cause death, disease, behavior abnormalities, congenital defects, genetic mutations, or result in an incremental lifetime cancer risk in excess of one in one million, or render the water unacceptable due to aesthetic qualities (taste, odor, and appearance).

However, if it is not possible for the responsible party to restore to the standards, then the responsible party may submit to the Division for consideration a request for variances to the standards or a proposal for alternate contamination concentrations.

A copy of the new and proposed 2L is enclosed for your reference. It is believed that revised 2L will be effective by the time you begin remediation of the problem sites.

A second comment concerns the definition of the extent of the groundwater quality violations established by ESE. As the analytical work to date has been of limited scope, we suggest that you select the well(s) that have been most impacted by the source(s) and perform complete analyses, to include:

National Interim Primary Drinking Water Regulations  
National Secondary Drinking Water Regulations  
volatile organic analyses  
extractable organic analysis

Colonel T. J. Dalzell  
September 22, 1988  
Page Three

Thirdly, we suggest that you evaluate the impact that the contaminated groundwater will have on operation of the sewage treatment plants if the Division agrees to its disposal in this way. Performance of bioassay analyses may be useful in evaluating the potential impact.

Finally, we feel that it is now appropriate to begin discussions on a Special Order by Consent (SOC) between the Marine Corps and the Environmental Management Commission. This SOC will authorize a mutually acceptable action plan with a timetable that will allow the responsible party to take the actions necessary to come into compliance with 2L. Once the final review is finished on the subject reports, we would like to meet with you and/or your consultants to begin negotiation of the SOC terms.

If you have questions, please do not hesitate to call Rick Shiver or me at (919) 256-4161.

Sincerely,

RICK SHIVER

FOR

A. Preston Howard, Jr., P.E.  
Regional Supervisor

APH/RSS/dhz

Enclosure

cc: Paul Wilms  
Perry Nelson  
GWS - WiRO  
CF

RECEIVED

JUN 08 1988

Wilmington Regional Office

**DRAFT**

**GW**

**GROUNDWATER  
CLASSIFICATIONS AND STANDARDS  
15 NCAC 2L**

**PROPOSED REVISIONS**

AMENDMENTS PROPOSED FOR: 15 NCAC 2L .0101 - .0104;  
.0201 - .0202; .0301 - .0302; .0319  
REPEAL PROPOSED FOR: 15 NCAC 2L .0105

Deletions are lined out.  
Additions are underlined.

ADOPTION PROPOSED FOR: 15 NCAC 2L .0106 - .0114

North Carolina  
Division of Environmental Management  
Raleigh, N.C.

March 15, 1988

TABLE OF CONTENTS  
 SUBCHAPTER 2L  
 GROUNDWATER CLASSIFICATIONS AND STANDARDS

	SECTION: .0100 GENERAL CONSIDERATIONS	Page
.0101	AUTHORIZATION	1
.0102	DEFINITIONS	2
.0103	POLICY	4
.0104	RS DESIGNATION	8
.0105	ADOPTION BY REFERENCE (REPEALED)	10
.0106	CORRECTIVE ACTION	11
.0107	ALTERNATE CONTAMINANT CONCENTRATION	11
.0108	COMPLIANCE BOUNDARY	12
.0109	REVIEW BOUNDARY	13
.0110	DELEGATION	14
.0111	MONITORING	14
.0112	REPORTS	14
.0113	ANALYTICAL PROCEDURES	15
.0114	VARIANCE	15
SECTION: .0200 - CLASSIFICATION AND WATER QUALITY STANDARDS		
.0201	CLASSIFICATIONS	19
	Class GA waters; usage and occurrence	19
	Class GSA waters; usage and occurrence	19
	Class GC waters; usage and occurrence	20
.0202	WATER QUALITY STANDARDS	21
	Class GA Standards	22
	Class GSA Standards	24
	Class GC Waters	25
SECTION .0300 - ASSIGNMENT OF UNDERGROUND WATER CLASSIFICATIONS		
.0301	CLASSIFICATIONS: GENERAL	27
.0302	STATEWIDE	27
.0319	RECLASSIFICATION	28

15 NCAC 2L .0101-.0104; have been proposed to be amended as follows:

.0101 AUTHORIZATION

{a} N.C. General Statute 143-214.1 directs that the Commission develop and adopt after proper study a series of classifications and standards which will be appropriate for the purpose of classifying each of the waters of the state in such a way as to promote the policy and purposes of the act. Pursuant to this statute, the rules Regulations of in this Subchapter establish a series of classifications and water quality standards applicable to the underground-waters groundwaters of the state.

~~{b}--These Regulations and the standards they establish apply to all classified underground waters.--Many common activities take place in or near shallow subsurface waters with no resulting violation in GA groundwater quality standards and it is the intention of these Regulations that these activities continue unimpeded except where specific problems and identified on a case-by-case basis.--These activities include:~~

~~{1}--the agricultural operations of applying fertilizer, herbicides, or pesticides to croplands or pastures, and the raising of livestock;~~

~~{2}--silvicultural fertilizer, herbicide or pesticide application, home or commercial fertilizer, pesticide, or herbicide application;~~

~~{3}--structural pest control activities when conducted according to label directions, and~~

~~{4}--subsurface or surface municipal, industrial, and domestic waste disposal activities or other activities which may affect underground waters when these systems are installed and operated or conducted according to regulations established by the Departments of Human Resources, Agriculture, or Natural Resources and Community Development.~~

~~{c}--As used herein, the phrase "specific problems" shall mean a set of facts or circumstances which show with a reasonable certainty that one or more of the following exists or will exist in the foreseeable future:~~

~~{1}--An existing or probable violation of GA groundwater standards;~~

~~{2}--The existence or probability of a violation or any other environmental standard or regulation;~~

~~{3}--A threat to human life, health, or safety;~~

~~{4}--A threat to the environment.~~

~~{d}--The regulations established in this Subchapter are intended to maintain and preserve the quality of the subsurface waters and groundwaters, prevent and abate pollution and contamination of the waters of the State, protect public health, and permit management of the groundwaters for their best usage by the citizens of North Carolina.--It is the policy of the EMC that the best usage of the groundwaters of the state~~

~~is-as-a-source-of-drinking-water-in-its-ambient-state.--These groundwaters-generally-are-a-potable-source-of-drinking-water without-the-necessity-of-treatment.--It-is-the-intent-of-these rules-to-protect-the-overall-high-quality-of-North-Carolina's groundwaters-and-to-enhance-and-restore-the-quality-of-degraded groundwaters-to-the-level-established-by-the-standards-whenever practicable.~~

History Note: Statutory Authority G.S. 143-214.1;  
143-214.2; 143-215.3(a)(1); 143B-282;  
Eff. June 10, 1979;  
Amended Eff. January 1, 1989;  
September 1, 1984; December 30, 1983.

.0102 DEFINITIONS

The definition of any word or phrase used in these rules regulations shall be the same as given in G.S. 143-213 except that the following words and phrases shall have the following meanings:

- ~~(1)--Deleterious-substance-means-any-substance-which-may cause-the-water-to-be-unpleasant-to-taste,or-unsightly,or-otherwise-renders-the-water-unsuitable-for-human consumption-~~
- (1) "Alternate contaminant concentration" means the allowable concentration of a contaminant, in excess of water quality standards, as established for restoration activities.
- (2) "Bedrock" means any consolidated or coherent and relatively hard, naturally-formed mass of mineral matter which cannot be readily excavated without the use of explosives or power equipment.
- (3) ~~(22)~~ "Commission" shall mean the Environmental Management Commission as organized under G.S. 143B -282, et-seq-
- ~~(23)--"Land-Surface"-for-the-purpose-of-determining-the location-of-GB-waters-shall-be-the-existing-contour-of the-earth,whether-the-natural-contour-or-artificially altered-by-excavation.--In-the-case-of-an-alteration-of the-existing-land-surface-by-the-addition-of-fill-material, the-land-surface-is-the-natural-contour-of-the earth-as-it-existed-prior-to-any-alteration.--Where-it is-determined-that-a-person-has-intentionally-altered the-surface-of-the-earth-for-the-purpose-of-evading-the regulations-and-standards-contained-in-the-Subchapter, the-phrase-"land-surface"-shall-mean-the-contour-of the-earth-that-existed-prior-to-such-activity-~~
- (4) (25) "Perimeter of Compliance boundary" means a boundary around a disposal system at and beyond which water quality standards may not be exceeded and only applies to facilities which are applying for or have received a permit from the Division of Environmental Management under G.S. 143-215.1, or for disposal systems permitted by the Department of Human Resources. shall-mean-the locus-of-all-points-in-the-vertical-plane-extending

- downward-from-the-points-of-compliance-surrounding-a point-of-discharge-
- (5)--"Micrograms-per-liter"-(ug/l) gives that weight in-micrograms-of-any constituent-in-one-liter of-solution-
- (6)--"Milligrams-per-liter"-(mg/l) is the-weight-in milligrams-of-any-specific-constituent or-constituents in a liter of the solution.
- (5)(26) "Director" shall means director of the Division of Environmental Management.
- (6)(2) "Fresh groundwaters" are means those groundwaters having a chloride concentration equal to or less than 250 milligrams per liter.
- (7)--Naturally-occurring--concentration-means-the concentration-of--chemical,-or-biological,-substances or-physical-characteristics-which-exist-naturally-and which-have-not-been-changed-by-man's-activities-
- (7)(3) "Groundwaters" means are those waters in the saturated zone of the earth.
- (4)- "Infiltration water"-means-the-water-that-infiltrates or-moves-into-the-subsurface-or-occurs-between-the-land surface-and-the-top-of-the-saturated-zone-or-serves-to recharge-groundwaters-
- (8) "Limit of detectability" means the method detection limit established for the U.S. EPA approved test procedure providing the lowest method detection limit for the substance being monitored.
- (9)(8) "Natural quality conditions" means the physical, biological, and chemical and radiological quality conditions which occurs naturally, and-which-has-not been-changed-by-man's-activities-
- (9) "Parts-per-million" (ppm) and "parts-per-billion" (ppb) shall-be-constructed-to-be-equivalent-to-milligrams-per-liter-and-micrograms-per-liter,-respectively-
- (24) "Point-of-compliance" shall-be-the-point-at-the-land surface-at-which-penalties-under-G.S. 143-214.6(a)(1)(b)-may-be-imposed-for-a-violation-of applicable-underground-water-quality-standards---(See Rule-.0103-(h)-of-this-Subchapter)
- (10) "Point-of-discharge" or "outlet" is the-point-of initial contact-of-waste-with-the-existing-soil-or-rock materials-
- (10)(11) "Potable waters" are means those waters suitable for drinking, by humans. culinary-and-feed-processing purposes-
- (11)(12) "Saline groundwaters" are means those groundwaters having a chloride concentration of more than 250 mg/l.
- (12)(13) "The Saturated zone" is means that part of the water-bearing subsurface consolidated-and unconsolidated-formations below the water table in which all the interconnected voids are filled with water under pressure at or greater than atmospheric. It does not include the capillary fringe.
- (14)--Subsurface-means-the-area-beneath-the-land-surface-and



- may-or-may-not-be-part-of-the-saturated-zone-
- ~~(15) -- Subsurface waters are those waters occurring in the subsurface and include groundwaters and infiltration waters.~~
- ~~(16) -- Toxic substances shall mean those substances which if ingested or assimilated into any organism either directly or indirectly will cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in such organisms of their offspring).~~
- (13) "Suitable for drinking" means a quality of water which does not contain substances in concentrations which, either singularly or in combination if ingested into the human body, will cause death, disease, behavioral abnormalities, congenital defects, genetic mutations, or result in an incremental lifetime cancer risk in excess of  $1 \times 10^{-6}$ , or render the water unacceptable due to aesthetic qualities, including taste, odor and appearance.
- ~~(17) The "Unsaturated zone" is the portion of the consolidated and unconsolidated formations between land surface and the water table. It includes the capillary fringe.~~
- (14) "Waste boundary" means the horizontal perimeter of the permitted waste disposal area.
- ~~(15) (18) Water table is means the surface of the saturated zone in the unconfined water-bearing formation or material below which all interconnected voids are filled with water and at which the pressure is atmospheric.~~
- ~~(19) -- "Thermal waste" for purposes of groundwater quality, means discharges having a temperature which is in excess of 30 degrees Fahrenheit above or below the naturally occurring temperature of the receiving groundwater as determined by the director.~~
- ~~(20) "Underground waters" means all waters in the subsurface including infiltration and groundwaters.~~
- ~~(21) -- "Person" shall mean any individual, proprietorship, partnership, joint venture, corporation, or any other entity, or any employee, designee, agent, or representative in any official capacity empowered to act in behalf of that entity with knowledge of that entity, either express or implied.~~

History Note: Statutory Authority G.S. 143-214.1; 143-215 (a) (1); 143B-282;  
Eff. June 10, 1979.  
Amended Eff. January 1, 1989; March 1, 1985;  
September 1, 1984; December 30, 1983

.0103 GENERAL RULES POLICY

- ~~(a) -- The discharge of any wastes to the subsurface or groundwaters of the state by means of wells is prohibited.~~
- (a) The rules established in this Subchapter are intended to maintain and preserve the quality of the groundwaters,

prevent and abate pollution and contamination of the waters of the State, protect public health, and permit management of the groundwaters for their best usage by the citizens of North Carolina. It is the policy of the Commission that the best usage of the groundwaters of the state is as a source of drinking water. These groundwaters generally are a potable source of drinking water without the necessity of treatment. It is the intent of these rules to protect the overall high quality of North Carolina's groundwaters and to enhance and restore the quality of degraded groundwaters to the level established by the standards, wherever practicable.

~~(b)(g)~~ It is the intention of the Environmental Management Commission to protect all ~~the underground waters existing below a depth of 20 feet beneath the surface of the land~~ groundwaters to a level of quality at least as high as that required under the standards established in Rule .0202 of this Subchapter. However, the Commission may permit degradation of groundwater quality below the level of the applicable standards within boundaries established in accordance with the rules of this Subchapter. ~~In keeping with the overall policy of the EMC to protect, maintain, and enhance water quality within the State of North Carolina, the EMC Commission will not approve any disposal system project of development subject to the provisions of G.S. 143-215.1 which would result in the significant degradation of groundwaters whose existing quality is better than the assigned standard, a violation of the water quality standards beyond the boundaries of the property on which the source of pollution is located, or which would result in the impairment of existing groundwater uses or would adversely impact the public health, safety, or welfare, unless such degradation is found to be economically and socially justifiable, and in the best public interest. It is within the authority and in keeping with the policies of the EMC to decline to allow degradation from the existing background quality of an underground water source without such social and economic justification. Prior to the approval of any project or development which will result in the significant degradation of groundwater quality, the EMC will solicit, through public notice, or public hearing, or both, comments, from the public and governmental agencies relative to the project or development and anticipated underground water quality degradation.~~

~~(e)~~ In addition to the GA, GSA, GB, GSB classifications assigned to undergroundwaters as a provision of this Subchapter, The director is authorized to designate such under groundwaters -- "restricted" -- (RS) under any of the following circumstances:

- ~~(1)~~ -- Where undergroundwaters contain toxic or deleterious substances in excess of the maximum allowable concentrations established under this Subchapter -- and restoration or treatment can be shown to be technologically and economically feasible.

- ~~(2) -- Where a statutory variance has been granted for the underground waters as provided in Paragraph (d) of this Rule.~~
- ~~(3) -- Where underground waters contain naturally occurring concentrations in excess of the standards established under Rule .0202(b) of this Subchapter whether or not restoration or treatment is feasible, but provided that restoration for naturally occurring excess concentrations may not be required of any person as a result of this designation.~~
- ~~(4) -- Where underground waters have been designated RS under Subparagraph (1) of this Paragraph, and where the source of contamination and the responsible person are identified, a compliance schedule shall be issued within 12 months of the underground waters being designated.~~

(c) The Commission recognizes that the application of fertilizers and other agricultural chemicals on land used for agricultural or silvicultural activities may result in the presence of these substances in the underlying groundwaters in concentrations exceeding water quality standards, as established in Rule .0202 of this subchapter, because of a seasonally high or fluctuating water table. The presence of these substances in concentrations in excess of water quality standards shall not be considered a violation if they result from applications made in accordance with label instructions, where applicable, or accepted agronomic practices, and do not occur in concentrations exceeding the water quality standards beyond the boundary of the property on which they were applied or below a depth of 10 feet below land surface.

~~(d) -- Any person subject to the provisions of General Statute 143-215.1 may apply to the BMC for a variance, from the groundwater classifications and quality standards established pursuant to these Regulations and North Carolina General Statute 143-214.1. A variance may be granted by the commission pursuant to the requirements of North Carolina General Statute 143-215.3(e). The burden of proof in any public hearing or other proceeding pursuant to North Carolina General Statute 143-215.3(e) shall be upon the applicant for a variance. No variance shall be granted to allow the discharge of waste to the subsurface or groundwaters of the state by means of wells or for an extension or expansion of the perimeter of compliance as established pursuant to the regulations of this Subchapter.~~

(d)(b) No person shall conduct or permit an activity which causes the concentration of any toxic or deleterious substances, to exceed that specific specified in Rule .0202 of this Subchapter, except in accordance with a as authorized by the rules of this Subchapter. compliance schedule authorized by the director.

~~(e) -- Any person conducting an activity causing or significantly contributing to the violation of underground water quality standards may apply to the director for a compliance schedule. In such cases the director may authorize~~

a-compliance-schedule-requiring-the-restoration-of-the-quality of-the-underground-waters-to-the-level-of-the-standard,-or-to-a level-as-close-to-the-applicable-standards-hereunder-as-is economically-and-technologically-feasible.--In-determination the-structure,-duration,-level-of-compliance,-and-feasibility of-a-compliance-schedule,-the-director-shall-consider-the extent-of-any-violations,-the-extent-of-any-threat-to-human health-or-safety,-the-extent-of-damage-to-the-environment,-the total-cost-of-the-cleanup-involved,-the-marginal-cost-of-the cleanup-required,-further-technological-advances-which-might permit-such-cleanup,-and-the-public-and-economic-benefit-of requiring-such-cleanup.--Compliance-schedules-may-be-revised-or revoked-by-the-director-if-the-terms-of-the-compliance schedules-are-violated-by-the-person-operating-thereunder,-or if-additional-information-on-the-extent-and-magnitude-of-the violation-becomes-known.--Where-is-it-determined-that-there-was willful-or-intentional-violation-of-the-underground-water quality-standards,-the-director-shall-not-grant-a-compliance schedule-prior-to-instituting-the-appropriate-enforcement provision-under-6.S.-143-214.6.

(e)(f) An activity or source-of-pollution disposal system operating under and in compliance with the terms of a statutory variance or a special order compliance-schedule-established under these Regulations is deemed to be in compliance with the water groundwater quality standards.

---(h)---Perimeter-of-Compliance:-Existing-and-New-Facilities:

- (1)---Exceedances-of-the-standards-established-for-the underground-waters-occurring-within-the-perimeter-of compliance-shall-not-be-subject-to-the-penalty provisions-applicable-under-143-215.6(1)a-
- (2)---The-commission-shall-otherwise-consider-underground waters-existing-within-the-compliance-perimeter-to be-classified-waters-of-the-state,-and-shall require:

(A)---that-permits-for-all-activities-governed-by --6.S.-143-214.1-will-be-written-to-protect-the level-of-groundwater-quality-established-by-GA standards;

(B)---that-necessary-groundwater-quality-monitoring --within-the-compliance-perimeter-will-be required;

(C)---that-a-violation-of-standards-within-the --compliance-perimeter-be-remedied-through clean-up,-recovery,-containment,-or-other response-which-the-commission-determines-to-be necessary-when-any-of-the-following-conditions occur:

- (i)---a-violation-of-the-standard-in-adjointing ---GA-waters-occurs-or-can-be-reasonably predicted-to-occur-considering hydro-geologic-conditions,-modeling,-or other-available-evidence;

(ii)---an-imminent-hazard-or-threat-to-the-public

~~---health-or-safety-exists-or-can-be  
predicted.~~

~~(3)---For-existing-facilities, the-compliance-perimeter  
shall-be-established-at-a-distance-500-feet-from-the  
point-of-discharge, or-the-property-boundary,  
whichever-is-less.~~

~~(4)---For-new-facilities, the-compliance-perimeter-shall-be  
established-at-the-lesser-of-250-feet-from-the-point  
of-discharge, or-50-feet-within-the-property  
boundary.~~

~~(5)---Nothing-in-this-Rule-shall-be-construed-to-prevent  
the-commission-from-initiating-enforcement-action  
even-when-pollution-occurs-solely-within-the  
compliance-perimeter-based-upon-permit-violations,  
imminent-threat-to-the-public-health, safety, or-the  
environment, or-violations-of-any-special-order  
issued-by-the-commission.~~

~~(i)---Exemptions.---The-following-activities-shall-not-be  
subject-to-the-regulations-of-this-Subchapter:~~

~~(1)---Upsealing-resulting-from-water-use-activities  
conducted-under-and-in-compliance-with-a-water-use  
permit.~~

~~(2)---The-use-of-drilling-fluids-as-approved-under-the  
---well-construction-regulations.~~

History Note: Statutory Authority G.S. 143-214; 143-214.1;  
143-214.2; 143-215.3 (e); 143-215.3 (a) (1);  
143B-282;  
Eff. June 10, 1979;  
Amended Eff. January 1, 1989;  
September 1, 1984; December 30, 1983.

#### .0104 ANALYTICAL-PROCEDURES RS DESIGNATION

~~Tests-or-analytical-procedures-to-determine-compliance-or  
noncompliance-with-the-underground-water-quality-standards  
established-in-Rule-.0202-of-this-Subchapter-will-be-in  
accordance-with:~~

~~(1)---the-methods-described-in-Standard-Methods-for-the  
---Examination-of-Water-and-Wastewater, fifteenth-edition,  
1980, and-the-1981-supplement-thereto.~~

~~(2)---testing, monitoring, or-analytical-procedures-required  
as-a-condition-of-a-permit-issued-by-the-Division-of  
Environmental-Management-under-N.C.G.S.-143-214.1, or~~

~~(3)---methods-approved-by-letter-from-the-Director-of-the  
Division-of-Environmental-Management.~~

(a) The director is authorized to designate GA or GSA  
groundwaters as RS under any of the following circumstances:

(1) Where groundwaters contain concentrations of  
substances in excess of the water quality standards  
established under this Subchapter

(2) Where a statutory variance has been granted as  
provided in Rule .0114 of this Subchapter; or

(3) Where an alternate contaminant concentration has  
been established by the Director.

History Note: Statutory Authority G.S. 143-214.1;  
143-215.3(a)(1); 143-B-282(2);  
Eff. June 10, 1979;  
Amended Eff. January 1, 1989;  
December 30, 1979.

15 NCAC 2L .0105; has been proposed to be repealed as follows:

.0105 ADOPTION BY REFERENCE

History Note: Statutory Authority G.S. 143-214.1;  
Eff. December 30, 1983.  
Repealed Eff. January 1, 1989.

15 NCAC 2L .0106-.0114; have been proposed to be adopted as follows:

**.0106 CORRECTIVE ACTION**

Any person conducting, permitting or controlling an activity which causes an increase in the concentration of a substance above the water quality standard,

- (1) as the result of activities not specifically permitted by the State, shall assess the cause, significance and extent of the violation of water quality standards; submit a plan for eliminating the source of contamination and for restoration; and implement the plan in accordance with a special order;
- (2) at or beyond the review boundary, shall:
  - (a) demonstrate, through predictive calculations or modeling, that natural site conditions, facility designs and operation controls will prevent a violation of standards at the compliance boundary; or
  - (b) submit a plan for alteration of existing site conditions, facility design or operation controls that will prevent a violation at the compliance boundary, and implement that plan upon its approval by the Director.
- (3) at or beyond the compliance boundary, shall, assess the cause, significance and extent of the violation of water quality standards and submit results of investigation and a plan for restoration and implement the plan in accordance with a special order.

History Note: Statutory Authority G.S. 143-215.3(a)(1);  
143-215.2; 143B-282;  
Eff. January 1, 1989.

**.0107 ALTERNATE CONTAMINANT CONCENTRATION**

(a) If the responsible party determines that it is not feasible to restore contaminated groundwaters to the level of the standards, then the responsible party may apply to the Director for a Special Order by Consent and submit a proposal for alternate contaminant concentrations. The proposal shall address the potential for adverse effects on human health and the environment through consideration of:

- (1) the physical and chemical characteristics of the contaminants, including the potential for migration;
- (2) the hydrogeological characteristics of the impacted area and surrounding land;
- (3) the rate and direction of groundwater flow
- (4) the proximity and withdrawal rates of local groundwater users;
- (5) the current and predictable uses of groundwater in the area;
- (6) the existing quality of groundwater, including other



- sources of contamination and their cumulative impact on the groundwater quality;
- (7) the proximity of the contaminant plume to hydraulically connected surface waters
  - (8) the current and predictable uses of surface waters hydraulically connected to the contamination plume, including existing quality of those waters, and any water quality standards established for those surface waters;
  - (9) the potential for health risks caused by human exposure to the contaminants;
  - (10) the potential damage to wildlife, crops, vegetation and physical structures caused by exposure to the contaminants; and
  - (11) the persistence and permanence of the potential adverse effects.

(b) In determining the feasibility of groundwater quality restoration activities and evaluating the proposal for alternate contaminant concentrations, the Director shall consider the extent of any threat to human health or safety, the extent of existing and potential damage to the environment, the total cost of the restoration involved, the marginal or incremental cost of the restoration required, the economic benefit accruing to the responsible party as a result of the violation, technological constraints which might, prevent restoration and the public and economic benefit of requiring such restoration. Upon the Director's approval of the proposal, alternate contaminant concentrations will be authorized by a special order.

(c) In making the determination required in paragraph (b) of this Rule, the Director shall request public comments, in accordance with the provision of G.S. 143-215.4(b), prior to approving or authorizing alternate contaminant concentrations; provided that, the Director, at any time and in his discretion, may authorize the responsible party to make preliminary studies or investigations which will result in a proposal for alternate contaminant concentrations, without receipt of public comments.

History Note: Statutory Authority G.S. 143-214.1;  
143-215.3(a)(1); 143B-282(2);  
Eff. January 1, 1989.

#### .0108 COMPLIANCE BOUNDARY

(a) For disposal systems permitted prior to December 30, 1983, the compliance boundary is established at a horizontal distance of 500 feet from the waste boundary or at the property boundary, whichever is closer to the source.

(b) For disposal systems permitted on or after December 30, 1983, a compliance boundary shall be established 250 feet from the waste boundary, or 50 feet within the property boundary, whichever point is closer to the source.

(c) The boundary shall form a vertical plane extending from the water table to the maximum depth of saturation.

(d) For ground absorption sewage treatment and disposal

systems which are permitted under 10 NCAC 10A .1900, the compliance boundary shall be established at the property boundary.

(e) A contravention of the applicable water quality standard within the compliance boundary shall not be subject to the penalty provisions applicable under G.S. 143-215.6(a)(1)a.

(f) The Director shall require:

- (1) that permits for all activities governed by G.S. 143-215.1 will be written to protect the level of groundwater quality, established by applicable standards, at the compliance boundary;
- (2) that recommendations be made to protect the level of standards at the compliance boundary on all permit applications received for review from other state agencies;
- (3) that necessary groundwater quality monitoring shall be conducted within the compliance boundary; and
- (4) that a contravention of standards within the compliance boundary be remedied through clean-up, recovery, containment, or other response when any of the following conditions occur:
  - (A) a violation of any standard in adjoining classified waters occurs or can be reasonably predicted to occur considering hydrogeologic conditions, modeling, or other available evidence;
  - (B) an imminent hazard or threat to the public health or safety exists or can be predicted; or
  - (C) a violation of any standard in groundwater occurring in the bedrock other than limestones found in the coastal plain sediments.

History Note: Statutory Authority G.S. 143-215.1(b);  
143-215.3(a)(1); 143B-282;  
Eff. January 1, 1989.

#### .0109 REVIEW BOUNDARY

A review boundary is established around disposal systems at the mid-point between the compliance boundary and the waste boundary. Where the groundwater quality standards are reached or exceeded at the review boundary as determined by monitoring, the permittee shall take action in accordance with the provisions of Rule .0106 (a)(2) of this Subchapter.

History Note: Statutory Authority G.S. 143-215.1(b);  
143-215.3(a)(1); 143b-282;  
Eff. January 1, 1989.

.0110 DELEGATION

(a) The Director is delegated the authority to enter into consent special orders under G.S. 143-215.2 for violations of the water quality standards.

(b) The Director is delegated the authority to issue a proposed special order without the consent of the person affected and to notify the affected person of the procedure set out in G.S. 150B-23 to contest the proposed special order.

History Note: Statutory Authority G.S. 143-215.3(a)(1);  
143-215.3(a)(1); 143-215.2;  
Eff. January 1, 1989;

.0111 MONITORING

(a) Any person subject to the provisions of G.S. 143-215.1 who causes, permits or has control over any discharge of waste, shall install a monitoring system, at such locations, and in such detail, as the Director may require to evaluate the efficiency of the treatment facility and the effects of the discharge upon the waters of the State.

(b) Monitoring systems shall be operated in a manner that will not result in the contamination of adjacent groundwaters of a higher quality.

(c) Monitoring shall be conducted and results reported in a manner and at a frequency specified by the Director.

History Note: Statutory Authority G.S.  
143-215.1(b); 143-215.65; 143-215.66;  
143-215.68; 143-215.3(a)(1);  
143B-282;  
Eff. January 1, 1989.

.0112 REPORTS

Any person subject to the provisions of G.S. 143-215.1 and to the requirements for corrective action specified in Rule .0106 of this Subchapter shall submit to the Director, in such detail as the Director may require, a written report that describes:

- (1) the results of the investigation specified in paragraphs (1) and (3) of Rule .0106, including but not limited to:
  - (a) a description of the sampling procedures followed and methods of chemical analyses used; and
  - (b) all technical data utilized in support of any conclusions drawn or determinations made.
- (2) the results of the predictive calculations or modeling, including a copy of the calculations or model runs and all supporting technical data, used in the demonstration required in Paragraph (2) of Rule .0106; and
- (3) the proposed methodology and timetable associated

with the restoration of groundwater quality for those situations identified in Paragraphs (1) and (3) of Rule .0106.

History Note: Statutory Authority 143-215.1(b); 143-215.3(a) (1); 143-215.65; 143B-282; 143-215.68  
Eff. January 1, 1989.

.0113 ANALYTICAL PROCEDURES

Tests or analytical procedures to determine compliance or noncompliance with the water quality standards established in Rule .0202 of this Subchapter will be in accordance with:

- (1) The following methods or procedures for substances where the selected method or procedure provides a method detection limit value at or less than the standard:
  - (a) Standard methods for the Examination of Water and Wastewater, 16th Edition, 1985, Published jointly by American Public Health Association, American Water Works Association and Water Pollution Control Federation;
  - (b) Methods for Chemical Analysis of Water and Waste, 1979, U.S. Environmental Protection Agency publication number EPA-600/4-79-020, as revised March 1983;
  - (c) Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, 3rd Edition, 1986, U.S. Environmental Protection Agency publication number SW-846;
  - (d) Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Federal Register Vol. 49, No. 209, 40 CFR Part 136, October 26, 1984;
  - (e) Methods or procedures approved by letter from the Director upon application by the regulated source.
- (2) A method or procedure approved by the Director for substances where the standard is less than the limit of detectibility.

History Note: Statutory Authority G.S.  
143-215.3(a) (1); 143B-282;  
Eff. January 1, 1989;

.0114 VARIANCE

(a) The Commission, on its own initiative or pursuant to a request under G.S. 143-215.3(e), may grant variances to water quality standards and the compliance boundary. Persons subject to the provisions of G.S. 130A-294 may apply for a variance under this section.

(b) Requests for variances are filed by letter from the applicant to the Environmental Management Commission. The application should be mailed to the Chairman of the Commission in care of the Director, Division of Environmental Management, Post Office Box 27687, Raleigh, N.C. 27611.

(c) The application should contain the following information:

- (1) Applications filed by counties or municipalities must include a resolution of the County Board of Commissioners or the governing board of the municipality requesting the variance from water quality standards which apply to the area for which the variance is requested.
- (2) A description of the past, existing or proposed activities or operations that have or would result in a discharge of contaminants to the groundwaters.
- (3) Description of proposed area for which a variance is requested. A detailed location map, showing orientation of the facility, potential for groundwater contaminant migration, as well as the area covered by the variance request, with reference to at least two geographic references (numbered roads, named streams/rivers, etc.) must be included.
- (4) Supporting information to establish that the variance will not endanger the public health and safety, including health and environmental effects with exposure to the groundwater contaminants. (Location of wells and other water supply sources including details of well construction within 1/2 mile of site must be shown on a map).
- (5) Supporting information to establish that standards cannot be achieved by providing the best available technology economically reasonable. This information must identify specific technology considered, changes in quality of the contaminant plume as demonstrated through predictive calculations approved by the Director, and technological constraints which limit restoration to the level of the proposed alternate contaminant concentrations.
- (6) Supporting information to establish that compliance would produce serious hardship on the applicant.
- (7) Supporting information that compliance would produce serious hardship without equal or greater public benefit.
- (8) A copy of any Special Order that was issued in connection with the contaminants in the proposed area and supporting information that applicant has complied with the Special Order and any alternate contaminant concentrations contained therein.

(d) Upon receipt of the application, the Director will review it for completeness and request additional information if necessary. When the application is complete, the Director shall give public notice of the application and schedule the matter for a public hearing in accordance with G.S. 143-215.4(d) and the procedures set out below.

(e) Notice of Public Hearing.

- (1) Notice of public hearing on any variance application shall be circulated in the geographical areas of the proposed variance by the Director at least 30 days

prior to the date of the hearing:

- (A) by publishing the notice one time in a newspaper having general circulation in said county;
  - (B) by mailing to the North Carolina Department of Human Resources, Division of Health Services, and appropriate local health agency;
  - (C) by mailing to any other federal, state or local agency upon request;
  - (D) by mailing to the local governmental unit or units having jurisdiction over the geographic area covered by the variance;
  - (E) by mailing to any property owner within the proposed area of the variance, as well as any property owners adjacent to the site covered by the variance; and
  - (F) by mailing to any person or group upon request.
- (2) The contents of public notice of any hearing shall include at least following:
- (A) name, address, and phone number of agency holding the public hearing;
  - (B) name and address of each applicant whose application will be considered at the meeting;
  - (C) brief summary of the proposed standard variance or modification of the perimeter of compliance being requested.
  - (D) geographic description for a proposed area for which a variance is requested;
  - (E) brief description of the activities or operations which have or will result in the discharge of contaminants to the groundwaters described in the variance application;
  - (F) a brief reference to the public notice issued for each variance application;
  - (G) information regarding the time and location for the hearing;
  - (H) the purpose of the hearing;
  - (I) address and phone number of premises at which interested persons may obtain further information, request a copy of each application, and inspect and copy forms and related documents; and;
  - (J) a brief description of the nature of the hearing including the rules and procedures to be followed. The notice shall also state that additional information is on file with the Director and may be inspected at any time during normal working hours. Copies of the information on file will be made available upon request and payment of cost or reproduction.

(f) All comments received within 30 days following the date of the public hearing shall be made part of the application file and shall be considered by the Commission prior to taking final action on the application.

(g) In determining whether to grant a variance, the Commission shall consider whether the applicant has complied with any alternate contaminant concentrations established pursuant to Rule .0107 of this Section and has complied with any Special Order issued under G.S. 143-215.2.

(h) If the Commission's final decision is unacceptable, the applicant may file a petition for a contested case in accordance with Chapter 150B of the General Statutes. If the Petition is not filed within 30 days, the decision on the variance shall be final and binding.

(i) A variance shall not operate on a defense to an action at law based upon a public or private nuisance theory or any other cause of action.

History Note: Statutory Authority G.S. 143-215.3(a)(1);  
143-215.3(a)(3); 143-215.3(a)(4);  
143-215.3(e); 143-215.4;  
Eff. January 1, 1989.

15 NCAC 2L .0201-.0202; have been proposed to be amended as follows:

.0201 UNDERGROUND-WATER CLASSIFICATIONS

The classifications which may be assigned to the underground groundwaters will be those specified in the following series of classifications:

- (1) Class GA waters; usage and occurrence:
  - (a) Best Usage ~~of Waters~~. Existing or potential source of drinking water supply for humans. drinking culinary use, and food-processing without treatment, except where necessary to correct naturally occurring conditions.
  - (b) Conditions Related to Best Usage. This class is intended for those groundwaters in which chloride concentrations are equal to or less than 250 mg/l, and which are considered suitable safe for drinking, but which may require treatment to improve quality related to natural conditions. culinary use, and food-processing without treatment, but which may require disinfection or other treatment when necessary to reduce naturally occurring concentrations exceed the maximum concentrations specified in Rule .0202 of this Section.
  - (c) Occurrence. ~~At depths greater than 20 feet below land surface and~~ In the saturated zone, ~~above a depth of 20 feet where these waters are a principal source of potable water supply.~~
- (2) Class GSA waters; usage and occurrence:
  - (a) Best Usage. Existing or potential source of water supply for potable mineral water ~~culinary use, food-processing, and conversion to fresh waters. by treatment.~~
  - (b) Conditions Related to Best Usage. This class is intended for those groundwaters in which ~~naturally occurring~~ the chloride concentrations due to natural conditions is in excess of are greater than 250 mg/l, and but which are otherwise may be considered suitable safe for use as potable mineral water after treatment to reduce concentrations of naturally occurring substances. culinary use, and food-processing without treatment, but any require disinfection or other treatment ~~when necessary to reduce naturally occurring concentrations in order not to exceed the maximum concentrations specified in Rule .0202 of this Section.~~
  - (c) Occurrence. ~~At depths greater than 20 feet below land surface and~~ In the saturated zone, ~~above a depth of 20 feet where these waters are a principal source of potable mineral water supply.~~
- (3) ~~Class GB waters; usage and occurrence:~~



- (a)---Best-Usage;---Source-of-recharge-to surface-waters and groundwaters, occurring-below-a-depth-of-20 feet, source-of-treatable-water-supply.
- (b)---Conditions-Related-to-Best-Usage. Precipitation is-the-principal-source-of-recharge-to-the-saturated-zone;---The-water-in-the-saturated-zone above-a-depth-of-20-feet-is-of-drinking-water quality-in-much-of-the-state;---However, the-upper-20-feet-of-the-earth's-surface-is-generally-very-vulnerable-to-pollution-from-man's-activities, and-should-be-considered-a-cycling-zone-for-removing-most-or-all-of-the-contaminants-from-the-water-by-adsorption, absorption, filtration-or-other-natural-treatment-processes;---In-recognition-of-this-fact, This-classification-is-intended-for-these fresh-groundwaters occurring at depths-less-than-20-feet-below-land-surface that are-of-suitable-quality-for-recharge-to-the-deeper-aquifers-and-surface-waters-of-the-state.
- (c)---Occurrence; Above-a-depth-of-20-feet-below-land surface.
- (4)---Class GSB waters; usage-and-occurrence:
- (a)---Best-Usage;---Source-of-recharge-to-saline-surface waters-and-saline-groundwaters-occurring-below-a depth-of-20-feet, source-of-treatable-water-supply.
- (b)---Conditions-Related-to-Best-Usage;---Precipitation is-the-principal-source-of-recharge-to-the-saturated-zone;---The-water-in-the-saturated-zone above-a-depth-of-20-feet-of-the-earth's-surface is-generally-very-vulnerable-to-pollution-from man's-activities-and-should-be-considered-a-cycling-zone-for-removing-most-or-all-of-the-contaminants-from-the-water-by-adsorption, absorption, filtration-or-other-natural-treatment-processes;---In-recognition-of-this-fact, this-classification-is-intended-for-these-saline-groundwaters-occurring-at-depths-less-than-20-feet-below land-surface-that-are-of-suitable-quality-for recharge-to-the-deeper-aquifers-and-surface-waters-of-the-state.
- (c)---Occurrence;---Above-a-depth-of-20-feet-below-land surface.
- (3) (5) Class GC waters; usage and occurrence:
- (a) Best Usage of Waters. Source of water supply for purposes other than human drinking, 7-culinary use, or food processing.
- (b) Conditions Related to Best Usage. This class includes those groundwaters that do not meet the quality criteria requirements of waters having a higher classification and for which measures efforts to upgrade restore in-situ to a higher classification would not be technically technologically or economically not be feasible,

or not in the best interest of the public, ~~or and~~  
for which ~~maximum-feasible-restoration has been~~  
~~completed treatment at the point of use to a~~  
~~quality suitable for drinking is not~~  
~~technologically feasible.~~

- (c) Occurrence. In the saturated zone, as determined by the commission on a case by case basis.

History Note: Statutory Authority G.S. 143-214.1;  
143B-282(2);  
Eff. June 10, 1979.  
Amended Eff. January 1, 1989;  
September 1, 1984; December 30, 1983.

.0202 UNDERGROUND WATER QUALITY STANDARDS

(a) The water quality standards for the ~~underground-waters~~ groundwaters of the state are those specified in this Rule.

They are the maximum allowable concentrations resulting from any discharge of contaminants to the land or waters of the State, which may be tolerated without creating a threat to human health or which would otherwise render the groundwater unsuitable for its intended best usage.

Where groundwater quality standards have been exceeded due to man's activities, restoration efforts shall be designed to restore groundwater quality to the level of the standard or as closely there to as is practicable. In recognition of circumstances or conditions which may prevent restoration to the level of the standards, the Director may authorize alternate contaminant concentrations in accordance with Rule .0107 of this subchapter.

~~These standards are the maximum levels of contamination that are permitted under these Regulations. It is the policy of the EMC, however, to protect and maintain the existing quality of the groundwaters where that quality is better than the assigned standards. Therefore, the increase in any constituent for which a standard is specified to a concentration of 50 percent of the standard may result in review or modification of an existing permit, requirements for additional monitoring, or issuance of a special order where a violation of standards may be predicted.~~

- (b) The standards will not be considered violated when concentrations of substances which exceed the established limits are attributable to natural conditions.
- (c) Maximum concentrations for substances are established as the lesser of:
- (1) Health advisory based on the no-observed-adverse-effect-level (NOAEL) or lowest-observed-adverse-effect-level (LOAEL);
  - (2) Concentration which corresponds to an incremental lifetime cancer risk of  $1 \times 10^{-6}$ ;
  - (3) Taste threshold limit value;
  - (4) Odor threshold limit value;
  - (5) National primary drinking water standard; or

- (6) National secondary drinking water standard.
- (d) The maximum concentrations for contaminants specified in paragraphs (h) and (i) of this Rule, shall be as listed.
- (e) Maximum concentrations for substances not specified in paragraphs (h) and (i) of this Rule, shall be determined by the Director in accordance with the procedures established in Paragraph (c) of this Rule. Where available data does not enable development of maximum concentrations in accordance with established procedures, the Director shall consider appropriate U.S. Environmental Protection Agency data and other published health effects data in developing maximum concentrations.
- (f) Where the maximum concentration of a substance is less than the limit of detectability, the substance shall not be permitted in detectable concentrations.
- (g) Where two or more substances exist in combination, the Director shall consider the effects of chemical interactions and may establish maximum concentrations at values less than those established in accordance with paragraphs (d) and (e) of this Rule. In the absence of information to the contrary, the carcinogenic risks associated with carcinogens present shall be considered additive and the toxic effects associated with non-carcinogens present shall also be considered additive.
- (h) ~~(b)~~ Class GA Waters. Standards The maximum allowable contaminant levels for toxic and deleterious substances are those concentrations specified in Subparagraphs (1) through (13) of this Paragraph. For substances not specified the standard is the naturally occurring concentration as determined by the Director. Synthetic, man-made, or other substances that do not naturally occur are prohibited. Where not otherwise indicated, the standard refers to the total concentration in milligrams per liter of any constituent.
- ~~(1) where naturally occurring substances exceed the established standard, the standard will be the naturally occurring concentration as determined by the director.~~
- (1) acrylamide (propenamide): 0.00001
- (2) alachlor: 0.00015
- (3) aldicarb (TEMIK): 0.009
- (4) ~~(10)~~ arsenic: 0.05 mg/l
- (5) ~~(11)~~ barium: 1.0 mg/l
- (6) benzene: 0.0007
- (7) bromoform (tribromomethane): 0.00019
- (8) ~~(12)~~ cadmium: 0.005 mg/l
- (9) carbofuran: 0.036
- (10) carbon tetrachloride: 0.0003
- (11) chlordane: 2.7 x 10<sup>-5</sup>
- (12) ~~(27)~~ chloride: 250.0 mg/l
- (13) chlorobenzene: 0.3

(14) chloroform (trichloromethane): 0.00019<sup>+</sup>  
 (15) 2-chlorophenol: 0.0001<sup>+</sup>  
 (16) ~~(13)~~ chromium: 0.05 mg/l<sup>+</sup>  
 (17) cis-1,2-dichloroethene: 0.07  
 (18) ~~(2)~~ ~~total~~ coliforms organisms (total): 1 per 100 milliliters<sup>+</sup>  
 (19) ~~(28)~~ color: less-than 15 color units<sup>+</sup>  
 (20) copper: 1.0<sup>+</sup>  
 (21) cyanide: 0.154<sup>+</sup>  
 (22) ~~(7)~~ 2, 4-D (2,4-dichlorophenoxy acetic acid): 0-<sup>+</sup> 0.07 mg/l<sup>+</sup>  
 (23) 1,2-dibromo-3-chloropropane: 2.5 x 10<sup>-5</sup><sup>+</sup>  
 (24) dichlorodifluoromethane (Freon-12; Halon): 0.00019<sup>+</sup>  
 (25) 1,2-dichloroethane (ethylene dichloride): 0.00038<sup>+</sup>  
 (26) 1,1-dichloroethylene (vinylidene chloride): 0.007<sup>+</sup>  
 (27) 1,2-dichloropropane: 0.00056<sup>+</sup>  
 (28) p-dioxane (1,4-die<sup>+</sup>thylene dioxide): 0.007<sup>+</sup>  
 (29) dioxin: 2.2 x 10<sup>-5</sup><sup>+</sup>  
 (30) ~~(30)~~ ~~total~~ dissolved solids (total): 500 mg/l<sup>+</sup> and  
 (31) ~~(3)~~ endrin: 0.0002 mg/l<sup>+</sup>  
 (32) epichlorohydrin (1-chloro-2,3-epoxypropane):  
 0.00354<sup>+</sup>  
 (33) ethylbenzene: 0.029<sup>+</sup>  
 (34) ethylene dibromide (EDB; 1,2-dibromoethane): 0.05 x  
 10<sup>-5</sup><sup>+</sup>  
 (35) ethylene glycol: 7.0<sup>+</sup>  
 (36) ~~(20)~~ fluoride: 1-5 2.0 mg/l<sup>+</sup>  
 (37) foaming agents: 0.5  
 (38) ~~(22)~~ gross alpha particle activity (including radium-226 but  
 excluding radon and uranium): 15 pCi/l;  
~~(23)~~ ~~gross-beta-particle-activity~~: 50-pCi/l<sup>+</sup>  
 (39) heptachlor: 7.6 x 10<sup>-5</sup><sup>+</sup>  
 (40) heptachlor epoxide: 3.8 x 10<sup>-5</sup><sup>+</sup>  
 (41) hexachlorobenzene (perchlorobenzene): 0.00002<sup>+</sup>  
 (42) n-hexane: 14.3<sup>+</sup>  
 (43) ~~(24)~~ iron: 0-30 0.3 mg/l<sup>+</sup>  
 (44) ~~(14)~~ lead: 0.05 mg/l<sup>+</sup>  
 (45) ~~(4)~~ lindane: 0-04 2.65 x 10<sup>-5</sup> mg/l<sup>+</sup>  
 (46) ~~(25)~~ manganese: 0.05 mg/l<sup>+</sup>  
 (47) ~~(15)~~ mercury: 0.0011 mg/l<sup>+</sup>  
 (48) metadichlorobenzene (1,3-dichlorobenzene): 0.62<sup>+</sup>  
 (49) ~~(5)~~ methoxychlor: 0.1 mg/l<sup>+</sup>  
 (50) methylene chloride (dichloromethane): 0.005<sup>+</sup>  
 (51) methyl ethyl ketone (MEK; 2-butanone): 0.17<sup>+</sup>  
 (52) nickel: 0.15<sup>+</sup>  
 (53) ~~(16)~~ nitrate: (as N) 10.0 mg/l<sup>+</sup>  
 (54) ~~(17)~~ nitrite: (as N) 1.0 mg/l<sup>+</sup>  
 (55) orthodichlorobenzene (1,2-dichlorobenzene): 0.62<sup>+</sup>  
 (56) oxamyl: 0.175<sup>+</sup>  
 (57) paradichlorobenzene (1,4-dichlorobenzene): 0.0018  
 (58) pentachlorophenol: 0.22<sup>+</sup>  
 (59) ~~(26)~~ pH: 6.5 - 8.5 no-increase-from-naturally  
occurring

pH-values-in-acidity-below or-increase in  
alkalinity

above 7 ↑

(29) phenol: not-greater-than-1.0-ug/l;  
(60) (21) combined radium-226 and radium-228 (combined): 5  
pCi/l ↑

(61) (18) selenium: 0.01 mg/l ↑

(62) (19) silver: 0.05 mg/l ↑

(63) styrene (ethenylbenzene):  $1.4 \times 10^{-5}$  ↑

(64) sulfate: 250.0 ↑

(31) --thermal; not-greater-than-30-degrees-Fahrenheit  
variance-from-the-naturally-occurring-level--as-de-  
termined-by-the-director ↑

(65) tetrachloroethylene (perchloroethylene; PCE):

0.0007 ↑

(66) toluene (methylbenzene): 1.0<sub>5</sub> ↑

(67) (6) toxaphene:  $0.005 \frac{3.1 \times 10^{-5}}{5}$  mg/l ↑

(68) (8) 2, 4, 5-TP (Silvex): 0.01 mg/l ↑

(9) --total-trihalomethanes: 0.10 mg/l ↑

(69) trans-1,2-dichloroethene: 0.07 ↑

(70) 1,1,1-trichloroethane (methyl chloroform): 0.2 ↑

(71) trichloroethylene (TCE): 0.0028 ↑

(72) vinyl chloride (chloroethylene):  $1.5 \times 10^{-5}$  ↑

(73) xylenes (o-, m-, and p-): 0.4 ↑

(74) zinc: 5.0 ↑

(i) (e) Class GSA Waters Standards The standards for this  
class shall be the same as those for Class GA except as  
follows:

- (1) chloride: allowable increase not to exceed 100  
percent of the natural quality concentration; and
- (2) total dissolved solids: 1000 mg/l.

~~The-maximum-allowable-contaminant-levels-for-toxic-and-delete-  
rious-substances-are-those-concentrations-specified-Subpara-  
graphs-(1)---(31)-of-these-Paragraph--For-substances-not-spec-  
ified-the-standard-is-the-naturally-occurring-concentration-as  
determined-by-the-director--Synthetic-man-made-or-other-sub-  
stances-that-do-not-naturally-occur-are-prohibited--Where-not  
otherwise-indicated-the-standard-refers-to-the-total-concen-  
tration-of-any-constituent.~~

(1) --where-naturally-occurring-concentrations-exceed-the  
established-standard-the-standard-will-be-the-natu-  
rally-occurring-concentration-as-determined-by-the  
director;

(2) --total-coliform: 1-per-100-milliliters;

(3) --endrin: 0.0002 mg/l;

(4) --lindane: 0.004 mg/l;

(5) --methoxychlor: 0.1 mg/l;

(6) --toxaphene: 0.005 mg/l;

(7) --2,4-D: 0.1 mg/l;

(8) --2,4,5-TP-Silvex: 0.1 mg/l;

(9) --total-trihalomethanes: 0.10 mg/l;

(10) --arsenic: 0.05 mg/l;

(11) --barium: 1.0 mg/l;

(12) --cadmium: 0.10 mg/l;

- (13) --chromium:--05-mg/l;
- (14) --lead:--05-mg/l;
- (15) --mercury:--002-mg/l;
- (16) --nitrate:--(as-N)--10.0-mg/l;
- (17) --nitrite:--(as-N)--1.0-mg/l;
- (18) --selenium:--01-mg/l;
- (19) --silver:--05-mg/l;
- (20) --fluoride:--1.5-mg/l;
- (21) --combined-radium---226-and-radium---228:--5-pCi/l;
- (22) --gross-alpha-particle-activity:--15-pCi/l;
- (23) --gross-beta-particle-activity:--50-pCi/l;
- (24) --iron:--0.30-mg/l;
- (25) --manganese:--05-mg/l;
- (26) --pH:--No-increase-from-naturally-occurring-pH-values  
in-acidity-below-or-increase-in-alkalinity-above-7;
- (27) --chloride:--allowable-increase-not-to-exceed-100  
percent-of-the-naturally-occurring-chloride  
concentration;
- (28) --color-less-than-15-units;
- (29) --phenol:--not-greater-than-1.0-ug/l;
- (30) --total-dissolved-solids:--1000-mg/l;-and
- (31) --thermal:--not-greater-than-30-degrees-Fahrenheit  
variance-from-the-naturally-occurring-level-as-de-  
termined-by-the-director.

(d) Class GB Waters. No-increase above-the naturally-oc-  
curring-concentration-of-any-toxic-or-deleterious-substance  
unless-it-can-be-shown upon-request, to-the-satis-  
faction-of-the-director, that-the-increase :

- (1) will not cause-or-contribute-to-the-contravention-of  
water-quality-standards-in-adjoining-waters-of-a  
different-class;
- (2) will not accumulate-in-a-manner-such-that-unusual-or  
different-hydrological-conditions-may-cause-a-threat  
to-public-health-or-the-environment;-and
- (3) will-not-cause-an-existing-or-potential-water-supply  
to-become-unsafe-or-unsuitable-for-its-current-use.

(e) --Class GSB Waters.--No-increase-above-the-naturally-oc-  
curring-concentration-of-any-toxic-or-deleterious-substance  
unless-it-can-be-shown, upon-request, to-the-satisfaction-of  
the-director-that-the-increase:

- (1) --will-not-cause-or-contribute-to-the-contravention-of  
water-quality-standards-in-adjoining-waters-of-a  
different-class;
- (2) --will-not-accumulate-in-a-manner-such-that-unusual-or  
different-hydrological-conditions-may-cause-a-threat  
to-public-health-or-the-environment;-and
- (3) --will-not-cause-an-existing-or-potential-water-supply  
to-become-unsafe-or-unsuitable-for-its-current-use.

(d)(f) Class GC Waters. All-chemical, radioactive, biologi-  
cal, taste-producing, thermal, and-other-toxic-or-deleterious  
substances-shall-not-exceed-the-concentration-existing-at-the  
time-of-classification.

- (1) The concentrations of substances which, at the time of  
classification exceed water quality standards, shall

not be permitted to increase. For all other substances, concentrations shall not be caused or permitted to exceed the established standard.

(2) The concentrations of substances which, at the time of classification, exceed water quality standards shall not cause or contribute to the contravention of groundwater or surface water quality standards in adjoining waters of a different class.

(3) Concentrations of specific substances, which exceed the established standard at the time of classification, shall be listed in Section .0300 of this Subchapter.

History Note: Statutory Authority G.S. 143-214.1;  
143B-282(2);  
Eff. June 10, 1979;  
Amended Eff. January 1, 1989;  
September 1, 1984; December 30, 1983.

15 NCAC 2L .0301-.0302; have been proposed to be amended as follows:

.0301 CLASSIFICATIONS: GENERAL

(a) Schedule of Classifications. The classifications are based on the quality, occurrence and existing or contemplated best usage of the underground-waters groundwaters as established in Section .0200 of this Subchapter and are assigned statewide except where supplemented or supplanted by specific classification assignments by major river basins.

(b) Classifications and Water Quality Standards. The classifications and standards assigned to the underground-waters groundwaters are denoted by the letters GA, GSA, GB, GSB, or GC. These classifications refer to the classifications and standards established by ~~15-NEAC-2B7-"Classifications and Standards-Applicable-to-the-Underground-Waters-of-North Carolina."~~ Rule .0201 of this Subchapter.

History Note: Statutory Authority G.S. 143-214.1;  
143-282(2);  
Eff. December 30, 1983;  
Amended Eff. January 1, 1989.

.0302 STATEWIDE

~~(a)~~ The classifications assigned to the underground-waters groundwaters located within the boundaries or under the extraterritorial jurisdiction of the State of North Carolina are as follows:

- (1) Class GA Waters. Those underground-waters groundwaters in the state naturally containing less than 250 mg/l or less of chloride and occurring at depths greater than 20 feet below land surface are classified GA.
- ~~(2)~~ ~~Class-GB-Waters: Those underground-waters-in-the state-naturally-containing-less-than-250-mg/l-chloride-concentration-and-occurring-between-land-surface-and-a-depth-of-20-feet-are-classified-GB.~~
- (2) ~~(3)~~ Class GSA Waters. Those underground-waters groundwaters in the state naturally containing greater than 250 mg/l chloride concentration and occurring at depths greater than 20 feet below land surface are classified GSA.
- ~~(4)~~ ~~Class-GSB-Waters:--Those-underground-waters-in-the state-naturally-containing-greater-than-250-mg/l chloride-concentration-and-occurring-between-land surface-and-a-depth-of-20-feet-are-classified-GSB.~~
- (3) ~~(4)~~ Class GC Waters. Those underground waters groundwaters assigned the classification GC in Rules .0303 - .0318 of this Section.

History Note: Statutory Authority G.S. 143-214.1;  
143-282(2);  
Eff. December 30, 1983;  
Amended Eff. January 1, 1989.



15 NCAC 2L .0319; has been proposed to be amended as follows:

.0319 RECLASSIFICATION

The ~~underground-water~~ groundwater classifications as assigned may be revised by the Commission EMC following public notice and subsequent public hearing. Changes may be to a higher or lower classification. Reclassification requests may be submitted to the Director, ~~of the Division of Environmental Management.~~

History Note: Statutory Authority G.S. 143-214.1;  
143-215.3(e); 143B-282(2);  
Eff. December 30, 1983;  
Amended Eff. January 1, 1989.

RECEIVED

NOTICE OF HEARING

JUN 06 1988

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT

Wilmington Regional Office  
DEM

Notice is hereby given of public hearings to be held by the Department of Natural Resources and Community Development on behalf of the Environmental Management Commission concerning proposed amendments to Subchapter 2L of the North Carolina Administrative Code, entitled Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina.

The proposed amendments to the subchapter include:

1. Changes in Commission policy regarding groundwater degradation.
2. A reduction in the number of classes.
3. New procedures for seeking a variance.
4. Requirements for responsible parties to restore contaminated groundwaters.
5. Procedures for requesting alternate contaminant concentrations where it is not feasible to restore to the standard.
6. A review boundary, at which monitoring for compliance may be required.
7. Increasing the number of parameters for which numerical standards are established from 31 to 74.
8. Delegation of authority to the Director to issue Special Orders.

The hearings will be held as follows:

Asheville  
July 26, 1988  
7:00 PM  
Humanities Lecture Hall  
UNC-Asheville

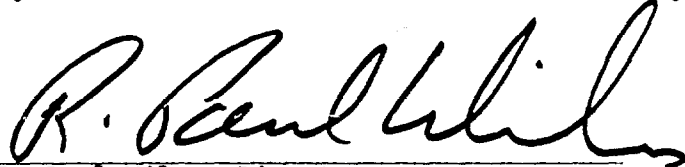
Raleigh  
July 28, 1988  
7:00 PM  
Ground Floor Hearing Room  
Archdale Building  
512 N. Salisbury Street.

New Bern  
August 2, 1988  
7:00 PM  
Room C-15  
Building C  
Craven County Comm.  
College

Oral and written comments will be received at the hearings. Written copies of oral statements exceeding three minutes are requested. Oral statements may be limited at the discretion of the hearing officers. Written comments will be received for thirty (30) days following the hearing dates. Written statements should be sent to:

Groundwater Section  
Division of Environmental Management  
Post Office Box 27687  
Raleigh, North Carolina 27611

These proposed rules are available for public inspection at the locations listed below. Copies may be obtained at each location for a charge of ten cents per page.



R. Paul Wilms, Director  
Division of Environmental Management

Natural Resources & Community  
Development  
Div. of Environmental Mgmt.  
512 N. Salisbury St.  
Archdale Bldg.  
P. O. Box 27687  
Raleigh, N. C. 27611

(919) 733-5083

Natural Resources & Community  
Development  
Div. of Environmental Mgmt.  
159 Woodfin St.  
P. O. Box 370  
Asheville, N. C. 28802

(704) 251-6208

Natural Resources & Community  
Development  
Div. of Environmental Mgmt.  
714 Wachovia Bldg.  
225 Green St.  
Fayetteville, N. C. 28301

(919) 486-1541

Natural Resources & Community  
Development  
Div. of Environmental Mgmt.  
1424 Carolina Avenue  
Washington, N. C. 27889

(919) 946-6481

Natural Resources & Community  
Development  
Div. of Environmental Mgmt.  
7225 Wrightsville Avenue  
Wilmington, N. C. 28403

(919) 256-4161

Natural Resources & Community  
Development  
Div. of Environmental Mgmt.  
P. O. Box 950  
Mooresville, N. C. 28115

(704) 663-1699

Natural Resources & Community  
Development  
Div. of Environmental Mgmt.  
8003 N. Point Blvd.  
Winston-Salem, N. C. 27106

(919) 761-2351