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State of North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management
512 North Salisbury Street • Raleigh, North Carolina 27611

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

R. Paul Wilms
Director

August 27, 1987

Mr. J.R. Bailey, P.E.
Head, Environmental Quality Branch
Utilities, Energy and Environmental Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511-6287

Dear Mr. Bailey:

In response to your letter of 15 June 1987, reference number 6280, 1142 CFB, the Groundwater Section staff has reviewed the incident file and your summary information concerning groundwater contamination in the Hadnot Point area of Camp Lejeune.

In setting the target concentrations for remedial actions, the maximum allowable contaminant levels established under the provisions of the groundwater quality standards, North Carolina Administrative Code 15 NCAC 2L, a copy of which is enclosed, are the guide. The compounds listed in your letter have maximum allowable contaminant levels of zero, see 15 NCAC 2L.0202(b), page 2L-11. Inasmuch as a "zero" target concentration would be undetectable, remediation goals have been set using the process which is outlined in the proposed revisions to 15 NCAC 2L.

Under the aforementioned process, maximum contaminant concentrations for the compounds listed in your letter, which exist singularly, would be established as the lesser of either a health advisory based on the NOAEL or LOAEL or a concentration which corresponds to an incremental lifetime cancer risk of 1×10^{-6}. Where two or more substances exist in combination, the Director of DEM shall consider the effects of chemical interactions and may establish standards at values less than those specified in the proposed regulations. In incidents involving two or more carcinogens, the risk will be considered to be additive unless information to the contrary is available. Where the maximum contaminant concentration of a substance is less than the limit of detectability, the substance shall not be permitted in detectable concentrations. The detectability is based on the analytical methods prescribed in the proposed groundwater quality standards, primarily in E.P.A. publication

SW-846 and the Federal Register Vol. 49, No. 209, 40 CFR Part 136, October 26, 1984.

For the compounds given in your letter, the maximum contaminant concentrations for each occurring singularly are as follows:

Compound	Maximum Contaminant Concentration	Analysis	Basis
Trichloroethene	2.8 ppb	EPA 601	10^{-6} cancer risk
1,2-dichloroethane	0.95 ppb	EPA 601	10^{-6} cancer risk
1,1-dichloroethene	0.24 ppb	EPA 601	10^{-6} cancer risk
trans-1,2-dichloroethene	70.0 ppb	EPA 601	Health Advisory
tetrachloroethene	0.7 ppb	EPA 601	10^{-6} cancer risk
vinyl chloride	0.18 ppb*	EPA 601	Published Detection Limit
benzene	0.7 ppb	EPA 602	10^{-6} cancer risk

* Maximum contaminant concentration for vinyl chloride is given as the detection limit published in EPA Method 601; however, the 10^{-6} cancer risk is 0.015 ppb which shall be used in determining the 10^{-6} cancer risk associated with the combination of compounds given in Department of the Navy correspondence.

Where it can be demonstrated by a responsible party that is not technologically or economically feasible to restore groundwater quality to level of the standards or to proposed target concentrations for remediation, then the responsible party may submit a proposal for alternate contaminant concentrations. The proposal must address 1) the groundwater contaminant migration, 2) current and predictable used of groundwater potentially impacted by contaminants, 3) health and environmental effects associated with exposure to the groundwater contaminants, 4) technological constraints which limit restoration to the level of the proposed alternate contaminant concentrations for incidents where restoration is thought not to be technologically feasible, and 5) the incremental cost of restoration compared to the value of the reclaimed resource for incidents where restoration is thought not to be economically feasible.

Should you have any questions concerning the standards, the process or restoration levels, please contact either Bill Jeter or Douglass Dixon at this letter head address or telephone (919) 733-3221 at your convenience.

Sincerely,

R. Paul Wilms

Enclosure

cc: Perry F. Nelson
Bill Meyer
Lee Laymon
Bill Jeter
Douglass Dixon
Files

PFN/WCJ/tej