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**NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES**
DIVISION OF WASTE MANAGEMENT

October 6, 1998



JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

WILLIAM L. MEYER
DIRECTOR

Commander, Atlantic Division
Naval Facilities Engineering Command
Code 1823

Attention: MCB Camp Lejeune, RPM
Ms. Katherine Landman
Norfolk, Virginia 23511-6287

Commanding General
Attention: AC/S, EMD/IRD
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004

RE: NC Superfund Section Comments
Draft Amendment to Record of Decision (9/25/98)
Operable Unit No. 12 (Site 3)
Marine Corps Base, Camp Lejeune

Dear Ms. Landman:

The referenced document has been received and reviewed by the North Carolina Superfund Section and our comments are attached. Please call me at (919) 733-2801, extension 278 if you have any questions.

Sincerely,

David J. Lown, LG, PE
Geological Engineer
Superfund Section

Attachment

cc: Gena Townsend, US EPA Region IV
Neal Paul, MCB Camp Lejeune
Diane Rossi, DENR - Wilmington Regional Office

ATTACHMENT

NC Superfund Section Comments
Draft Amendment to Record of Decision (9/25/98)
Operable Unit No. 12, Site 3
MCB, Camp Lejeune

1. Page vi, Statutory Determinations. North Carolina Administrative Code 15A Subchapter 2L (NCAC 2L) is an ARAR for this site and specifically addresses contaminated soils. NCAC 2L.0106 requires the removal or treatment of any sources or contaminated soils which threaten the quality of groundwaters.

2. Page 7.3, Section 7.2.2 Remediation Levels. The purpose of the soil removal is to protect groundwater. Table 1 shows the groundwater contamination that was detected during the first half 1998 semiannual monitoring at this site. As indicated in Table 1 several organic compounds were detected above 2L standards or USEPA Region III Risk Based Concentrations (RBCs) for Tap Water. Table 2 shows the highest levels detected in surface and subsurface soils at Site 3 during the Remedial Investigation. Table 2 also shows soil screening levels to protect the groundwater. The soil-to-groundwater screening levels are based on the Draft North Carolina Risk Analysis Framework and the procedure outlined in the USEPA Soil Screening Guidance, May 1996.

In addition to the soil-to-groundwater screening levels, any surface soils left at the site must meet residential exposure levels. The USEPA Region III RBCs for residential exposure can be used as screening levels. These were discussed in our September 8, 1998 comment letter on the Sample Record of Decision for this site. Soils used for backfill must meet the most stringent of either pathway.

The most conservative screening levels are usually based on the soil-to-groundwater pathway. If a review of the data suggests that these levels are too conservative, additional soil sampling to determine the leaching characteristics using a leach test, such as the Synthetic Precipitation Leaching Procedure (SPLP, EPA SW-846 Method 1312, USEPA, 1994) may be warranted. The leach test results and a site-specific dilution factor can be used in place of the soil-to-groundwater equation to determine cleanup levels protective of groundwater.

3. Table 1, Soil Remediation Levels. Based on the attached Tables A and B, the following contaminants of concern and remediation levels (mg/kg) should be added to Table 1 of the ROD:

2-Methylphenol	4.9
4-Methylphenol	0.0174
Acenaphthene	8.16
Phenol	1.75

To be used as backfill, excavated soils should meet the most stringent requirement (either the Region III RBC for residential soil or the soil-to-groundwater pathway requirements).

**Table A. Exceedances of the North Carolina Groundwater Standards
Operable Unit No. 12, Site 3
MCB, Camp Lejeune, North Carolina**

Source: Baker, May 22, 1998, Semiannual Groundwater Monitoring Report, Table 8

Organic Compound	NC Groundwater Standard		Maximum Exceedance	
	ug/L	Source	Well	ug/L
2,4-Dimethylphenol	140	Interim 2L Standard	03-MW02	150
2-Methylnaphthalene	28	Interim 2L Standard	03-MW02	410
2-Methylphenol	180	Screening Level	03-MW02	220
4-Chloro-3-methylphenol	NA	No Data Available	03-MW02	2.1
4-Methylphenol	3.5	Interim 2L Standard	03-MW02	560
Acenaphthene	80	Interim 2L Standard	03-MW02	390
Carbazole	3.3	Screening Level	03-MW02	180
Dibenzofuran	2.4	Screening Level	03-MW02	220
Naphthalene	21	2L Standard	03-MW02	2800
Phenol	300	2L Standard	03-MW02	430

**Table B. Soil Screening Levels for Compounds that Exceed
Groundwater Screening Levels or Standards
Operable Unit No. 12, Site 3
MCB, Camp Lejeune, North Carolina**

Organic Compound	Soil Max. Concentration ¹ (mg/kg)	Soil-to-Groundwater Screening Level (mg/kg)	Source	Contaminant of Concern
2,4-Dimethylphenol	ND	1.15	b	No
2-Methylnaphthalene	41J	4.9	b	Yes
2-Methylphenol	2J	1.05	b	Yes
4-Chloro-3-methylphenol	ND	No Data		No
4-Methylphenol	5.9J	0.0174	b	Yes
Acenaphthene	47	8.16	b	Yes
Carbazole	4.9	0.273	a	Yes
Dibenzofuran	36	80	b	No
Naphthalene	95	0.585	b	Yes
Phenol	7.2	1.75	b	Yes

¹ Source: Final Record of Decision, January 6, 1997, Table 5

a NC Draft Risk Analysis Framework, November 1996 (RAF), Table 3.4

b Calculated Using NC Draft RAF General Formula for S-3 Soil