

North Carolina  
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor  
William G. Ross Jr., Secretary  
Dexter R. Matthews, Director



March 18, 2003

Commander, Atlantic Division  
Naval Facilities Engineering Command  
1510 Gilbert Street (Building N-26)  
Norfolk, Virginia 23511-2699

Attention: Mr. Kirk Stevens, PE  
Navy Technical Representative  
Code EV23KS

RE: Additional Comments on the Draft Amended Remedial Investigation,  
Operable Unit (OU) # 20, Site 86, MCB Camp Lejeune, NC  
Soil and Groundwater  
Camp Lejeune, NC6170022580  
Jacksonville, Onslow County, North Carolina

Dear Mr. Stevens:

The NC Superfund Section has received the responses to State comments on OU #20 (Site 86) Amended Remedial Investigation Report for the Camp Lejeune, MCB Superfund Site located in Jacksonville, NC. The State concurs with the responses to State comments, dated January 30 2003, with the exception of the following items. If you have any questions or comments please contact me at (919) 733-2801 ext. 341.

**Response:**

*The other point regarding considering iron in the monitoring program if concentrations exceed 2 times background needs to be discussed separately. It should be noted that Lejeune Partnering team has agreed to use the mean plus 2 standard deviations as background comparison (not two times the average background concentration as mentioned in comment 1). Using the mean plus 2 standard deviations as background, the maximum concentration of iron at the site (30,400 µg/L in 86-GW05) would still exceed background (16,245 µg/L for shallow wells) and included as a CPOC. However, the distribution of iron at the site is similar to background iron concentrations (5.1 µg/L to 30,400 µg/L and 46.9 µg/L to 32,700 µg/L, respectively). So, the distribution of iron at Site 86 is similar to background and is not recommended for inclusion in the monitoring program. Lead and manganese were the other inorganic COPCs. Both maximum concentrations are below mean plus 2 standard deviations.*

1. The mean plus 2 standard deviations of the mean concentration of un-impacted groundwater is an excellent standard for background comparison. I was unaware of this decision.

1646 Mail Service Center, Raleigh, North Carolina 27699-1646  
Phone: 919-733-4996 \ FAX: 919-715-3605 \ Internet: [www.enr.state.nc.us](http://www.enr.state.nc.us)

Mr. Kirk Stevens

3-18-2003

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The State does not wish to pursue background levels of iron that would cause staining, taste or even toxicity problems with the water. Each resident, municipality, or military facility must address these issues when they choose to build within areas with high naturally occurring inorganic contaminants in the groundwater. The State would request, however, that a minimal monitoring be completed on the monitoring wells at Site 88 that contain high iron concentrations that exceed background (the mean plus 2 standard deviations of the mean iron concentration in un-impacted background areas of the Base). In this manner we can assure that the iron concentrations in the area do not continue to increase and spread.

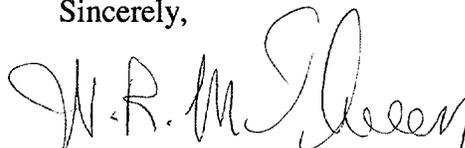
It is very common in groundwater plumes impacted by solvents to see naturally occurring metals leach into groundwater due to the pH changes resulting from the presence of solvents in the aquifer. It is strongly expected that the high metals concentrations in the surface, intermediate, and deep aquifers at Site 88 are being caused by the dry cleaner solvents that have leached into groundwater. If this is the case, the iron and other metals will likely precipitate out of solution as the chlorinated solvent plume is treated and reduces in concentration. Metals reduction in groundwater should then be proportional to the reduction in solvent concentrations or would follow after solvent reduction.

In any case we would only need to document that metals reduction was occurring and that they have returned to background concentrations (the mean plus 2 standard deviations of the mean). At this point we could stop monitoring the plume for metals. It is recommended that we sample and test for metals at the pre-remedial action monitoring event and sample for metals only on an annual basis thereafter until we observe a clear reduction in metals concentrations. We could then decide on a new sampling frequency not to exceed the 5-year review frequency. When metals concentrations return to background as defined above we would no longer be required to monitor for metals.

2. The State has no further comments on the Human Health Risk Assessment for this document. A comment by Mr. Dave Lilley on the Site Screening Ecological Risk Assessment has been forwarded separately in order to more quickly address the item.

If you have any questions or comments, please contact me, at (919) 733-2801, extension 341 or email [randy.mcelveen@ncmail.net](mailto:randy.mcelveen@ncmail.net)

Sincerely,



Randy McElveen  
Environmental Engineer  
NC Superfund Section

Cc: Dave Lown, NC Superfund Section

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March 18, 2003

TO: Randy McElveen

FROM: David Lilley *DBL*

RE: Comments on the Screening-Level Ecological Risk  
Assessment and Step 3A Refinement Contained Within the  
Draft Amended Remedial Investigation, OU 20, Site 86,  
MCB Camp Lejeune, NC  
May, 2002

1. Comment 24: Please provide the cited equation and inputs so this information can be reviewed.

DL/dl/word/Eco2RA.doc/35

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March 18, 2003

TO: Randy McElveen

FROM: David Lilley *DBL*

RE: Comments on the Human Health Risk Assessment, DENR  
Comments on the Draft Amended Remedial Investigation  
Report for OU 20, site 86, MCB Camp Lejeune, NC

1. No comments.

DL/dl/word/Human Health RA1/55

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