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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

APR 20 1993

4WD-FFB

Mr. Byron Brant
Department of the Navy - Atlantic Division
Naval Facilities Engineering Command
Code 1822
Norfolk, Virginia 23511-6287

RE: Marine Corps Base Camp Lejeune NPL Site
Site 80 - Paradise Point Golf Course
Jacksonville, North Carolina

Dear Mr. Brant:

EPA has reviewed the document titled "Draft Site Inspection Report - Site 80 Paradise Point Golf Course" dated October 1992. Comments on the draft documents are enclosed. These documents have been given a cursory review to provide you with guidance in developing an RI/FS Work Plan (and associated project plans) to support a Record of Decision.

In addition to the enclosed comments, all applicable comments previously submitted on SI reports also apply here.

If you have any questions or comments, please call me at (404) 347-3016.

Sincerely,

A handwritten signature in cursive script that reads "Michelle M. Glenn".

Michelle M. Glenn
Senior Project Manager

Enclosure

cc: Peter Burger, NCDEHNR
Neal Paul, MCB Camp Lejeune

COMMENTS
DRAFT SITE INSPECTION REPORT
SITE 80 Paradise Point Golf Course
MARINE CORPS BASE CAMP LEJEUNE

GENERAL COMMENTS

1. The recommendation of "no further action" presented in the Draft SI Report is unacceptable since important data gaps remain, including the exclusion of metals and semivolatile compounds from the current list of analytical parameters and the need for additional sampling. Additional sampling, including analysis for the Target Analyte List (TAL) and Target Compound List (TCL) parameters, should be conducted in order to adequately characterize potential contaminant sources. The full TAL and TCL should be analyzed in all media because of the wide range of constituents that could have been handled at this site, including metals and semivolatile compound usage in the machine shop.

Additional soil and groundwater sampling should be conducted to provide the data necessary to characterize potential hotspots and to provide chemical data for parameters on the TCL and TAL that were not analyzed for in the initial investigation.

2. The number of original sampling points at the soil mound and dead foliage areas was sufficient; however, samples were not analyzed for metals and semivolatile compounds. A minimum of 10 percent of the soil sample locations should be resampled and analyzed for TAL and TCL constituents. The two existing monitoring wells at these suspect areas should also be resampled and analyzed for the TAL and TCL parameter list.

At the vehicle wash-sump area, soil and groundwater sampling was limited to a single well located upgradient with respect to the truck wash-sump area. Potential uncontrolled discharges from the wash area and potential contaminant releases from the sump should be assessed with additional sampling.

Several soil borings should be installed near the wash area. At least one additional soil boring should also be obtained from the sump area unless it can be shown that sump construction and operation could not have resulted in contaminant releases. In order to monitor any groundwater contamination originating from the wash-sump area, one downgradient monitor well should be installed. Based on the interpreted flow direction presented in the Draft SI Report, the well should be placed immediately west of the machine shop. All samples should be analyzed for the TAL and TCL parameter list.

A surface water and a sediment sample should be obtained from a location downstream from the wash-sump area. None of the ditch sampling locations appear to be located downstream from the point where surface water runoff from the wash-sump area would intersect the ditch. A likely surface water/sediment sampling point would be at the intersection of the unnamed road and the ditch in the extreme southwest part of Site 80, presumably downstream from the point where the ditch and the surface water runoff intersect. Both the surface water and sediment samples should be analyzed for the TAL and TCL parameter list.

3. The preliminary risk assessment (PRA) is incomplete because NUS failed to analyze a wide range of chemicals including metals and semivolatile compounds which could potentially be chemicals of concern at the site. Furthermore, substantiated conclusions could not be derived from the sampling analyses database because the database was too limited.

The PRA compares the concentrations of contaminants detected to Federal and state regulatory standards, applicable or relevant and appropriate requirements (ARARs), to be considered (TBC) guidelines and advisories and risk-based preliminary remediation goals (PRGs). For the surface water pathway, as stated in the Draft SI Report, the only chemical for which a Federal regulatory standard or screening criteria exist is toluene, which has been detected at a level exceeding the Ambient Water Quality Criteria established by EPA Region IV. The risks associated with the other detected chemicals of concern identified for the surface water pathway could not be assessed due to the lack of corresponding Federal and state standards. Therefore, a quantitative risk assessment that includes calculating both carcinogenic and noncarcinogenic cumulative risks associated with all the chemicals of concern should be performed.

The PRA was conducted based only on the current commercial/industrial land-use setting. Potential risks posed by the chemical of concern to human health and the environment should also be assessed under a more restrictive future land-use scenario. Even though the shallow aquifer beneath the site is not used as a potable water resource, the site should still be assessed for the more conservative residential-use scenario where contaminants in the shallow aquifer could potentially migrate into the underlying drinking water aquifer, the Castle Hayne aquifer. Therefore, efforts should be made to determine whether these two aquifers are hydraulically interconnected beneath the site and to verify the validity of using the current land-use scenario.

It is important to remember that the risk-based PRGs are initial guidance. They do not establish that cleanup to meet these goals is warranted. The PRGs may be revised based on the consideration of appropriate factors that include, but are not limited to, exposure factors, uncertainty factors and technical factors. Included under exposure factors are cumulative effect of multiple contaminants, the potential for human exposure from other pathways at the site, population sensitivities, potential impacts on environmental receptors and cross-media impacts of alternatives. Factors related to uncertainty may include the reliability of alternatives, the weight of scientific evidence concerning exposures, individual and health effects and the reliability of exposure data. Technical factors may include detection/quantification limits for contaminants, technical limitations to remediation, the ability to monitor and control movement of contaminants and background levels of contaminants. The final selection of the appropriate risk level is made when the remedy is selected based on the balancing of criteria.

An uncertainty analysis is a very important component of the risk assessment and should be included in the PRA. The uncertainty analysis should include a discussion of uncertainties associated with both the exposure assessment and toxicity assessment.

SPECIFIC COMMENTS

1. Page ES-1, "Field Activities" - The limited range of parameters has not provided the characterization necessary to support a "no further investigation" decision.
2. Page ES-2, "Recommendations" - Please delete the last sentence. It is not supported by the documentation.
3. Page 1-4, Paragraph 3 - The text describes the truck wash area and states that prior to the installation of a sump, wash water discharge may have been uncontrolled. There should be a description of the sump operation and the disposition of waste wash water. For example, what is the sump construction and are there barriers to wastewater migration into underlying soils? Is the discharge currently routed from the sump to a treatment plant? This description is important in evaluating the effectiveness of the sampling program used to characterize site contamination.

4. Page 1-4, Section 1.7.1 - The failure to analyze for full TCL/TAL has limited the usefulness of the data. Full scan TCL/TAL analyses must be run on some number of samples from each of the media.
5. Page 1-6, Figure 1-3 - With the exception of one possible contour line in this figure, neither this sampling location map nor other maps in the Draft SI Report include topography. Without this information it is not possible to verify potential surface migration routes for site contaminants. This is especially important in the vicinity of the machine shop and wash area where pesticides, herbicides and vehicle wash water may have been disposed on the ground surface. The adequacy of the soil sampling and ditch sampling cannot be verified without the inclusion of topographic contours on this sampling location map.

Which direction does water in the ditch flow? What is the direction of groundwater flow?

If the contour line, labeled "15," is actually a contour line, indicate the units represented.

6. Page 1-7, Section 1.7.2 - The subsurface soil investigation contains sufficient descriptive information on how the samples were obtained, but no rationale is presented for the choice of boring/sampling locations. Based on the site history, the soil sampling conducted in the northeast portion of the site appears to have been based on suspect site features: the soil mound and dead foliage area. These areas are adequately sampled; however, no explanation is presented for soil borings 80SB03 and 80SB04 (east side of the machine shop) and for the absence of soil sampling at the vehicle wash-sump area. Several additional soil borings should be installed and sampled in the vehicle wash-sump area and any other locations where site features suggest that disposal operations may have been conducted.
7. Page 1-7, Section 1.7.3 - One of the justifications presented in the Draft SI Report for the selection of the monitor well locations is that the selection is based on "suspected source areas." However, not all of the suspected source areas are adequately monitored. Two of the three wells, 80MW02 and 80MW01, are located at and slightly downgradient from the dead foliage area and the soil mound. These locations are adequate to detect any contaminant releases to groundwater from the two suspected source areas nearby. No wells are positioned to adequately

monitor any groundwater contamination in the machine shop and vehicle wash-sump areas. Monitoring well 80MW03 is located approximately 50 feet from the sump, but in an upgradient direction. One monitoring well should be installed downgradient from the wash-sump area and the machine shop, both potential sources of contamination.

8. Page 1-8, Section 1.7.4 - Assuming that topography slopes toward the ditch, the furthest downstream sample location, 80SW/SD05, would not adequately assess any surface water or sediment contamination resulting from disposal activities in the wash-sump area. Both of these media should be sampled at the intersection of the unnamed road and the ditch, which is downstream from 80SW/SD05, in order to provide sufficient data to more fully assess the affect of the wash-sump area on the ditch.

In order to verify the adequacy of the surface water/sediment investigation, topography must be shown on the site maps.

9. Page 1-9, Table 1-2 - What is the explanation for a difference of seven feet in the water level elevations?
10. Page 4-2, Paragraph 2 - The list of parameters analyzed for soil should also include total petroleum hydrocarbons as correctly indicated on Page 4-1.
11. Page 4-2, Paragraph 4 - The value for methylene chloride of 7 ug/kg was detected in soil from location MW03, not MW02.
12. Page 4-3, Table 4-1 - This table presents the contaminant data in a summarized format for only the range of detected concentrations and the number of samples that occur above detection. A table should be presented that indicates the individual detected concentrations and the corresponding sample numbers.
13. Page 4-4, Table 4-2 - The value for methylene chloride of 7 ug/kg was detected in soil from location MW03, not MW02.
14. Page 4-3, Table 4-3 - The value for methylene chloride of 7 ug/kg was detected in soil from location MW03, not MW02.
15. Page 5-1, Section 5.0 - This section should be heavily caveated in that the source of the various compounds detected is virtually unknown. It is very likely that elsewhere at this site, higher concentrations of the contaminants found exist.

In addition, this section has not been reviewed by the EPA Office of Health Assessment. Due to the current workload, only Baseline Risk Assessments (BRA) and BRA segments of work plans are under review.

16. Page 5-4, Paragraph 8 - The discussion of receptors and current land-use setting in the paragraph is unclear and too brief. The current land-use scenario used in the PRA should be specified.
17. Page 5-5, Paragraph 4 - The paragraph states that the groundwater exposure pathway is incomplete because no domestic or production water wells are located in the surficial aquifer at or near the site. This is inaccurate. A groundwater exposure pathway can be considered complete if the surficial aquifer is contaminated and is interconnected with a drinking water aquifer.
18. Page 5-5, Paragraph 6 - Rationale should be provided as to why areas surrounding the site are not considered to be sensitive environments.
19. Page 5-5, Section 5.2.2 - Assessment of the exposure pathway associated with sediment should also be included in this section.
20. Page 5-8, Section 5.3.2.4 - A list of input parameters and their assigned site-specific values used in the calculations of PRGs should be included in this section.
21. Page 5-8, Paragraph 3 - A future land-use scenario at the site should be developed and incorporated into the PRA. A qualitative assessment should be made of the likelihood that the assumed future land use will occur. For the commercial/industrial scenario, monitoring of the site may be required.
22. Page 5-8, Paragraph 8 - The paragraph states that PRGs were developed based on noncarcinogenic and carcinogenic toxicological information for the chemicals detected and are contained in Table 5-4 for comparison. However, only carcinogenic risk-based PRGs are included in Table 5-4.
23. Page 5-13, Paragraph 2 - The paragraph states that potential chemicals of concern for groundwater were identified based on a review of their individual toxicity. The potential chemical of concern selection process should be described.

24. Page 5-13, Paragraph 9 - Clarify what is meant by this statement: "All chemicals of concern are identified based upon standard/criteria/PRG exceedence."
25. Page 5-16, Paragraph 6 - The statement that "the only chemical of potential threat to the protection of aquatic life is toluene" is inconclusive. Acetone, carbon disulfide and total petroleum hydrocarbons (TPH) were detected along with toluene in the surface water samples. The risks associated with these chemicals could not be assessed due to the lack of corresponding Federal and state standards and screening criteria. However, they may still pose potential risks to aquatic life or human health. Therefore, a quantitative risk assessment which includes calculating both carcinogenic and noncarcinogenic cumulative risks associated with all the chemicals of concern should be conducted.
26. Page 5-16, Section 5.5.2 - Please delete the last sentence.
27. Page 6-1, Section 6.2 - Based on the PRA, the Draft SI Report concludes that "no further action" is recommended. However, the data necessary for development of the risk assessment are incomplete. Data gaps remain for groundwater, soil, sediment and surface water. These data gaps are more fully described in previous specific comments.