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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

DEC 08 1992

4WD-FFB

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

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 63 - Verona Loop Dump  
Jacksonville, North Carolina

Dear Mr. Brant:

EPA has reviewed the document titled "Draft Site Inspection Report - Site 63 Verona Loop Dump" dated October 8, 1992. Comments on the draft documents are enclosed. These documents have been given a cursory review to provide you with guidance in developing an approach at the site to completing the site evaluation. EPA concurs with the recommendation for additional work. At the completion of the additional sampling the report should be resubmitted with a recommendation as to the final disposition of the site.

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  
George Radford, MCB Camp Lejeune

COMMENTS  
DRAFT SITE INSPECTION REPORT  
SITE 63 VERONA LOOP DUMP  
MARINE CORPS BASE CAMP LEJEUNE

GENERAL COMMENTS

1. As part of the SI, Baker conducted a preliminary risk assessment (PRA) which is included in the Draft SI Report. The PRA is considered incomplete due to the fact that the sampling analytical database used was too limited to derive any valid and substantiated conclusions, as acknowledged in the Draft SI Report. Furthermore, the sampling analytical database for the PRA was based upon the detected analytes in soil and groundwater samples that were collected around the perimeter of the landfill. The sample results may not be representative of the maximum concentrations of these contaminants. There may be contaminant sources (hot spots) in the landfill where wastes had been disposed that would contain higher concentrations of contaminants.
  
2. The PRA presented in the Draft SI Report compares the concentrations of detected contaminants to Federal and state standards, applicable or relevant and appropriate requirements (ARARs), to be considered (TBC) guidelines and advisories and risk-based preliminary remediation goals (PRGs). The PRA concludes that soil contamination poses no human health or environmental risk. However, the PRA was conducted based solely upon a current commercial/industrial land-use setting with only transient military personnel being considered as potential human receptors. Neither risks of the contaminants due to inhalation of volatile compounds from the soil nor risks due to inhalation of particulates from the soil were assessed, and a site-specific exposure duration value was assumed to be 2 years compared with a standard default value of 25 years for commercial/industrial land use. An assessment should be conducted of risks associated with all exposure pathways under a future land-use scenario which includes a more restrictive residential land use. This will have to be done as part of the Baseline Risk Assessment. 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 including, but not limited to exposure factors, uncertainty factors and technical factors. Included under exposure factors are the 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.

4. The Draft SI Report recommends that "the site should not undergo a remedial investigation/feasibility study (RI/FS) since hazardous wastes are not believed to have been disposed of at the site." This recommendation is premature since Site 63 has not been fully characterized. Volatile and semivolatile compounds, pesticides/ polychlorinated biphenyls (PCBs) and metals were detected in the soil and groundwater samples collected at Site 63. These detected contaminants may indicate that hazardous wastes were disposed in the landfill. Decisions regarding whether an RI/FS should be conducted at Site 63 should only be made after sufficient data regarding the extent of contamination at Site 63 has been collected.
  
5. The Draft SI Report recommendations regarding further actions are deficient. The Draft SI Report recommends that background inorganic groundwater samples and additional groundwater samples from the three existing monitor wells should be collected as well as surface water/sediment samples upgradient and downgradient from Site 63. These actions are necessary for site characterization. However, further actions in addition to those the Draft SI Report recommends would be necessary to provide sufficient data to allow development of a defensible risk assessment. These actions should include an investigation to determine whether the landfill at Site 63 contains hot spots. The EPA guidance on landfills, Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites (EPA 1991), states that if hot spots are delineated, samples should be collected to determine the characteristics of the hot spot wastes. Therefore, data on the existence of hot spots must first be obtained. Examples of investigative methods applied to the delineation of hot spots include soil gas and geophysical surveys.

6. Additional monitor wells should be installed to characterize the lateral and vertical extent of contamination in the shallow aquifer. The three wells that were installed around the perimeter of the landfill detected volatile and semivolatile compounds and metals in the groundwater. However, an insufficient number of wells were installed to provide data to determine extent of contamination.
7. All additional surface soil, subsurface soil, groundwater and surface water/sediment samples that may be collected in further sampling efforts should be analyzed for the full Target Compound List/Target Analyte List (TCL/TAL). The wastes that were disposed in the landfill have not been characterized and the extent of contamination resulting from the waste disposal activities at the landfill is still relatively unknown.

#### SPECIFIC COMMENTS

1. Page ES-1, 2nd paragraph - If the answer to item number one is "yes", then the answer to number three is "yes".
2. Page ES-2, 5th bullet - Indicate what "NEESA" represents. The QA/QC sample collection methods used should be no less stringent than the criteria set forth in the ECB SOPQAM.
3. Page ES-2, 1st paragraph - Regional background concentrations are not suitable for determining acceptable background concentrations. Background concentrations should be collected in an area that is close to Site 63 but unaffected by contaminants from either Site 63 or any other potentially contaminated sites near Site 63.
4. Page ES-2, 1st paragraph - An effort should be made to determine whether the shallow aquifer is hydraulically interconnected with the underlying Castle Hayne drinking water aquifer at Site 63. The commercial/industrial land-use scenario used in the PRA would be invalid if the drinking water aquifer has been impacted from migration of contaminants from the shallow aquifer.
5. Page ES-2, 2nd paragraph - The Draft SI Report states that "barium, chromium and lead were detected in groundwater above the State groundwater standards and/or Federal primary drinking water standards (i.e. MCLs)." Aluminum, arsenic, iron, manganese and nickel were also detected in

elevated levels in the groundwater at Site 63. These metals were detected in the monitor wells at concentrations that exceed the Federal Ambient Water Quality Criteria (AWQC) Human Health standards. The Federal AWQC Human Health standards for aluminum, arsenic, iron, manganese and nickel are 146 micrograms/liter (ug/l), 0.0022 ug/l, 300 ug/l, 50 ug/l and 13.4 ug/l, respectively.

6. Page ES-2, 4th paragraph - The Draft SI Report states that "surface water does not appear to be significantly impacted via groundwater discharge or surface water runoff from the site." However, aluminum and iron were detected in the surface water samples 63SW/SD01 and 63SW/SD02 at levels above the Federal AWQC Human Health standards. What is meant by "significantly"?
7. Pages ES-2, ES-3 - The comments in the Draft SI Report regarding the extent of contamination in the surface water and sediments in the intermittent stream at Site 63 are contradictory. On page ES-2, the Draft SI Report states that "surface water does not appear to be significantly impacted via groundwater discharge or surface runoff from the site." On page ES-3, however, the Draft SI Report states that "the contaminants indicate that adverse effects associated with aquatic organisms may occur." This contradiction requires clarification.
8. Page ES-3, top of page - What is a "potential remediation goal"? Where is it defined in the CERCLA guidance?
9. Page ES-3, 6th paragraph - The Draft SI Report states that "hazardous wastes are not believed to be present at Site 63." However, the sampling results contradict this statement. Volatile and semivolatile compounds, pesticides/PCBs and metals were detected in the soil and groundwater samples collected during the SI. The detected contaminants may indicate that hazardous materials were disposed in the landfill.
10. Page ES-3, last paragraph - The classification of the aquifer is of more significance than the current use.
11. Page ES-4, "Recommendations" - The decision on whether or not an RI/FS will be required may be deferred until additional information has been collected. It is apparent, though, that some kind of source is present as concentrations in the wells appear to vary by orders of magnitude over very short distances.

12. Page 1-7, Figure 1-3 - It appears that no upgradient or background sample was collected from the intermittent stream. This will be necessary in light of the elevated concentrations of inorganic compounds detected in the sediment sample collected adjacent to the disposal area.
13. Page 1-10, 2nd paragraph - The use of only steam cleaning for downhole and sampling equipment decontamination between each drilling event is inadequate. For appropriate decontamination procedures, refer to Appendix E.9 of the ECB SOPQAM for details. Furthermore, the ECB SOPQAM requires that the steam cleaner and/or high-pressure hot water washer shall be capable of generating a pressure of at least 2500 pound per square inch (PSI) and producing hot water and/or steam (200 F plus).
14. Page 1-10, 3rd paragraph - Deionized water and organic-free water should be used instead of distilled water for the decontamination of sampling equipment.
15. Page 2-8, Section 2.2.4 - The information provided here is confusing when compared with the groundwater elevations provided on Figure 1-3 and the topography discussion in Section 2.2.1 (page 2-7). Please clarify.
16. Page 3-1, paragraphs 4 and 5 - The Draft SI Report should provide specific details regarding the composition of the bivouac waste and the volume of the waste that was reportedly disposed in the landfill. The Draft SI Report states that the bivouac waste was disposed in the landfill, but does not provide a description of the composition of that waste, the volume of the waste disposed or the years of disposal operations at the landfill.
17. Page 4-2, Table 4-1 - Why are the detection limits so high for the semi-volatile compounds? At these levels, you might not detect contaminants present above MCLs.
18. Page 4-8, Figure 4-2 - There appears to be a significant disparity in the concentrations of contaminants found over a fairly small area. Does the author have a hypothesis as to the reason for the wide variation? Other than a potential contaminant source?
19. 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.

20. Page 5-1, 2nd paragraph - More specific terms such as "groundwater pathway" and "surface water pathway" should be referred to in the discussion of contaminant migration pathways rather than the term "water pathway."
21. Page 5-4, 4th paragraph - Rationale should be presented to justify the statement that "future residential use has not been considered due to the fact that there is no future residential use planned for the area at Site 63." EPA Region IV requires that a risk assessment be conducted under a future residential land-use scenario as a conservative approach. This is not a justification for the arbitrary land use scenario adopted by the author. In a situation where a potential "no action" scenario is under consideration, all assumptions made must be of the utmost conservative nature in order to ensure that the "no action" determination is protective.
22. Page 5-5, 2nd paragraph - The discussion on exposure pathways at Site 63 is insufficient and should include assessment of the following elements that constitute each pathway: source and mechanism of chemical release, retention or transport medium, exposure point of potential human contact with the contaminated medium and exposure route at the exposure point.  
  
The classification of the aquifer must be considered.
23. Page 5-7, paragraphs 1 and 2 - The concentrations of inorganic contaminants detected in the soil samples should only be compared to the site-specific concentrations of background soil samples collected at the same sampling intervals, not the concentrations in the soils of the eastern United States. Site-specific background soil samples should also be collected and analyzed for organic parameters.
24. Page 5-11, 2nd paragraph - Detailed rationale should be provided to justify the statement that "inhalation of volatile contaminants detected in the soils is not considered to be a factor."
25. Page 6-1, 2nd paragraph - If the inorganic contamination in groundwater is not related to disposal at the site, what is the source of the contaminants?

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