

03.01- 9/7/93 - 00455

**Baker**

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September 7, 1993

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

Attn: Ms. Linda Berry, P.E.  
Engineer-in-Charge  
Code 1823

Re: Contract N62470-89-D-4814  
Navy CLEAN, District III  
Contract Task Order (CTO) 0177  
RI/FS Report for Operable Unit No. 1  
Technical Approach for the Human Health Risk Assessment  
MCB, Camp Lejeune, North Carolina

Dear Ms. Berry:

A Baseline Human Health Risk Assessment will be prepared as part of the RI/FS reports for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune. In order to be proactive on the approach of the human health risk assessment, the following information has been developed for review and concurrence by LANTDIV, the State of North Carolina, USEPA, and Baker Environmental, Inc (Baker).

Figure A is provided to indicate the location of the three areas of concern, within Operable Unit 1, which were investigated. The following is a brief site history:

Site 21 (Lot 140) - This area has a history of pesticide usage and transformer oil disposal. The area was used as a pesticide mixing area and as a cleaning area for pesticide application. It is currently used by the base as a storage area (IDW wastes).

Site 24 (Industrial Fly Ash Dump) - This area was used for disposal of fly ash, cinders, solvents, used paint stripping compounds, sewage sludge, and water treatment spiractor sludge. The area is no longer used as a disposal area and is heavily wooded.

Site 78 (Hadnot Point Industrial Area) - This area is comprised of maintenance facilities, warehouses, painting shops, printing shops, auto body shops, etc. The site covers approximately 590 acres. Much of the area is paved (i.e., roadways, parking lots, loading docks, and storage lots), however, there are small lawn areas associated with the individual buildings at HPIA and along stretches of roadways.

As part of the remedial investigation environmental samples were collected from several media at these sites. Many of the samples were collected for use in conducting the quantitative human health risk assessment and to assist in defining the nature and extent of contamination. The following media were sampled:



A Total Quality Corporation

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Site 21 - Groundwater samples were collected from four monitoring wells.

Surface and subsurface soils were collected from 31 grid locations.

Sediment samples were collected from 15 stations in the ditch surrounding the site. Only two surface water samples were collected due to the absence of surface water.

Site 24 - Groundwater samples were collected from seven monitoring wells.

Surface and subsurface soils were collected from 38 grid locations.

Site 78 - Groundwater samples were collected from approximately 45 monitoring wells throughout the HPIA.

Surface and subsurface soil samples (approximately 30) were collected from building locations which were selected based on literature searches, site history, and results of a soil gas survey conducted at the HPIA.

Surface water and sediment samples were collected from two distinct surface water bodies (Codgels Creek and Beaver Dam Creek).

In order to accurately estimate the human health risks from the Operable Unit, the following data groups, exposure scenarios, and receptors are being proposed for evaluation.

**Groundwater** - Based on existing information, the underlying aquifer appears to be interconnected throughout the Operable Unit. Therefore, exposure via ingestion, dermal contact, and inhalation will be estimated for current military personnel, and future residents (i.e., children and adults). The entire groundwater data set (i.e., shallow, intermediate, and deep wells) for the Operable Unit will be used to perform the statistical evaluation on the 95 percent upper confidence level (UCL).

**Surface Water/Sediment** - The samples collected from Site 21 will not be used to estimate any potential human health risks. The water that may be present following rainfall events is not a classifiable surface water body and is not interconnected with groundwater. The current activities at this site would not involve an exposure duration or frequency sufficient enough to estimate a human health risk. In addition, if this area were to be developed for future residential scenarios, although unlikely, this drainage would be eliminated, therefore, eliminating the exposure route.

Analytical data will be evaluated from the surface water/sediment samples collected from the Beaver Dam Creek and Codgels Creek in order to estimate future potential human health risks to future residential children and adults. Currently, military personnel do not use these water bodies for recreational purposes (swimming, fishing, hiking), therefore, current human health risks will not be estimated.

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Surface Soil - Because the Operable Unit is divided into three distinct source areas, current and future exposure routes (i.e., incidental ingestion, dermal contact, and particulate inhalation) will be computed for each distinct area using only the analytical results from soil samples collected in that area. The exception to this approach is Site 78. Because of industrial activities conducted in this area, limited soil exposure (due to paved surfaces), and results of prior field and soil gas investigations the soil sampling at this site was limited to specific locations within the HPIA (see Figure A). Using this biased sampling strategy to estimate potential risks would not be indicative of the entire site. Therefore, exposure routes for current and future receptors is not warranted for inclusion as part of the human health risk assessment.

Subsurface Soil - Like surface soils, subsurface soils were collected from the three source areas. In order to estimate potential risks from exposure to subsurface soil, future construction scenarios will be developed for each of the source areas (Sites 21, 24, and 78).

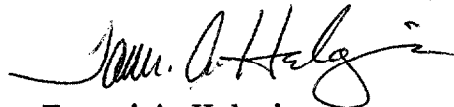
Baker is requesting that the information provided in this letter be reviewed, and that prior to commencement of the report process, a consensus regarding the approach of the human health risk assessment be reached between the NC DEHNR, USEPA, and the Navy/Marine Corps/Baker.

A timely review of this information is required in order to meet the scheduled delivery date for the Preliminary Draft version of the RI/FS report. Baker would like to initiate a phone conference on, Wednesday, September 15, 1993 with LANTDIV/USEPA/NC DEHNR in order to discuss comments and answer questions regarding this letter.

If you have any questions prior to the conference call, please do not hesitate to contact me at (412) 269-2023.

Sincerely,

BAKER ENVIRONMENTAL, INC.

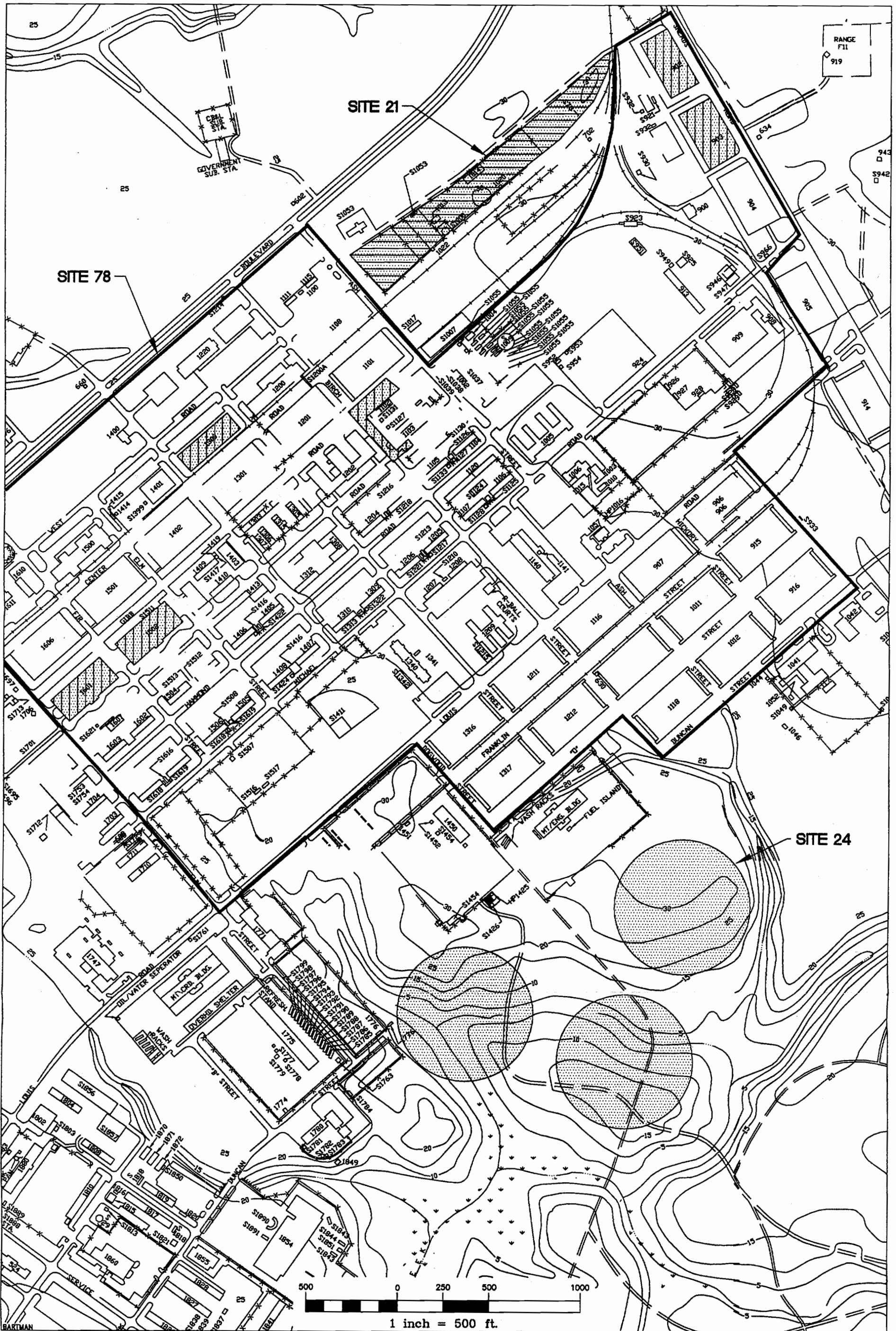


Tammi A. Halapin  
Project Manager

TAH/nd  
Attachments

cc: Mr. Neal Paul (EMD)  
Ms. Lee Anne Rapp (w/o attachment)  
Ms. Gina Townsend (USEPA)  
Mr. Patrick Watters (NC DEHNR)

Figure A



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