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C-49-10-5-031
October 4, 1995
Project Number 5082

Mr. Mark Evans
Northern Division (Code 1823)
Naval Facilities Engineering Command
Mail Stop 82, 10 Industrial Highway
Lester, PA 19113-2090

Reference: CLEAN Contract N62472-90-D-1298
Contract Task Order No. 203

Subject: Minutes Of Meeting With USEPA & CTDEP
Area A Landfill Design
Naval Submarine Base New London, Groton, Connecticut

Dear Mr. Evans:

Please find attached one (1) copy of the minutes prepared by Brown & Root Environmental for the September 27, 1995 meeting held in Boston with U.S.EPA Region I (USEPA) and the Connecticut Department Of Environmental Protection (CTDEP) to discuss the proposed scope of the upcoming Groundwater/Leachate Modeling Study.

Copy of the attached document is also being sent today to Jim Briggs at NORTHDIV Civil Design and Andy Stackpole at NSB NLON Environmental Department.

Very truly yours,

Jean-Luc Glorieux, P.E.
Project Manager

JLG/jlg

Attachment
cc: Mr. Roger Boucher, NORTHDIV (letter only)
Mr. Jim Briggs, NORTHDIV (1 copy)
Mr. Andy Stackpole, Environmental Department, NSB NLON (1 copy)
Mr. John Trepanowski, Brown & Root Environmental, Wayne (1 copy)
Mr. Daryl Hutson, Brown & Root Environmental, Pittsburgh (letter only)
File 5082

SUMMARY OF MEETING ON GROUNDWATER/LEACHATE MODELING STUDY FOR AREA A LANDFILL REMEDIAL DESIGN NSB-NLON, GROTON CONNECTICUT

LOCATION: Boston, Massachusetts

DATE: September 27, 1995

TIME: 10:00 am to 4:00 pm

ATTENDEES: Kymberlee Keckler - Region I EPA
Yoon-Jean Choi - Region I EPA
Dale Weiss - TRC
Mark Lewis - CTDEP
Mark Evans - NORTHDIV
Jim Briggs - NORTHDIV
Jeff Dale - NORTHDIV
Al Briggs - Brown & Root
J.D. Chiou - Brown & Root
Corey Rich - Brown & Root

SUMMARY OF DISCUSSIONS:

General

The EPA indicated that they will not have formal comments on the work plan until October 7, 1995. By the end of the meeting, the EPA gave their conditional verbal approval for the field work. The CTDEP did not indicate if they had any comments on the work plan or if they would be providing any.

The EPA has not received the formal responses to their comments on the final design submittal. The Navy indicated that they should receive them soon.

Field Investigation

- TRC questioned Brown & Root on the approach to collecting additional field data (3-transects). TRC indicated that the field effort may be too small in scope to collect the data needed for a 3-D modeling effort. TRC commented that there was a possibility that additional field investigations would still be necessary after the proposed effort and the Navy said they understood this. The Navy later said they would entertain the idea of relocating borings/wells, but would not increase the size of the sampling event.

- The use of hydropunches to collect additional waterlevel measurements was discussed by EPA, the Navy, and Brown & Root.

- EPA questioned the nature of the "Geoprobe" sampling which was done. Brown & Root and Navy indicated that this may have only been probing outside the southern limit of the landfill, to locate the surface of bedrock, and will investigate further.

- EPA expressed concern that the proposed modeling study would not evaluate discharge into landfill from either the weathered bedrock or alluvium. Brown & Root assured EPA that the appropriate data is going to be collected along the upgradient side of the landfill to evaluate the discharge.

- TRC indicated that new borings should be continued through dredge spoils to bedrock in areas where stratigraphy is undefined.

- EPA indicated that additional tests should be conducted to evaluate soil strength parameters. A discussion of the data is provided below in the Slope Stability section.

Action Items

1. Brown & Root will prepare a detailed summary of the existing and proposed wells to be used in the modeling effort. Information such as screen interval, units intercepted, availability of water level data, and hydrogeologic parameters available will be summarized.

2. Brown & Root will develop a more comprehensive discussion of the rationale for the current field effort. The text will provide justification for number and location of the wells.

3. Brown & Root will verify if "Geoprobe" sampling was completed and provide a written summary of the findings.

Modeling Task

- Initially, TRC questioned Brown & Root about the basis for selection of 3-D model versus 2-D model. TRC thought a 2-D model may be adequate or even a water budget may be appropriate. Brown & Root and Navy indicated that they were trying to provide the best, most complete, and most defendable model first so that they did not get criticized. TRC somewhat changed their position on the necessity of a 3-D model as the meeting progressed and complexities of the site were discussed.

- TRC thought that it was appropriate to have the model boundary, model grid, layers, etc. defined for this work plan. Brown & Root understood the work plan should deal only conceptually with model development, and indicated that the information TRC was requesting would be prepared during the model creation, which will be after evaluation of the new data.

- EPA asked about the flow and contaminant criteria which would be used to evaluate modeling results. Brown & Root and Navy indicated that it was premature to define the criteria; however the Navy reassured the EPA and CTDEP that they will be involved in the criteria selection process.

- TRC expressed concern about the calibration criteria (natural fluctuation in water table) and the approach to sensitivity analysis (performed after calibration). Brown & Root reassured TRC that they intended to match a more stringent calibration criteria, however without any other information, a typical starting point (i.e., modeling standard) is to match the natural fluctuation in the water table. Brown & Root also expressed confidence in the approach that they were taking to sensitivity analysis.

- TRC indicated to Brown & Root that selection of boundary conditions is critical and that constant head boundary conditions may not be appropriate. Brown & Root will evaluate the water level data and the modeling domain to determine the most appropriate model boundary conditions.

Action Items

1. The Navy and Brown & Root agreed to evaluate the data collected during the field investigation and determine the most appropriate type of model (i.e., 2-D or 3-D) for the system at that time.

2. The Navy and Brown & Root told the EPA and CTDEP that they will be involved in the selection of criteria for evaluating the modeling results. In addition, the Navy and Brown & Root will keep the EPA and TRC informed about model development and incorporate EPA and TRC comments over the entire project.

Slope Stability

- EPA expressed their concern that more data is needed to validate Brown & Root's stability analysis. The EPA believes that there is a horizontal weak layer in the dredge spoil. The EPA disagrees with the vertical separation concept Brown & Root used. The EPA believes that other tests (direct shear) are necessary and that CU total stress parameters will not provide the same result. Brown & Root indicated that collection of samples in the toe area may be difficult because of the boulders and material currently in place.

- EPA indicated that the stability of the OBDA should be considered.

- EPA discussed total stress analysis at the toe of the cap, particularly in relationship to construction equipment near the toe of the slope and failure during construction (short term).

- The EPA suggested 3 additional samples in the dredge spoils. The Navy proposed collecting up to 3 more dredge spoil samples at or in the wetland to address EPA's concern. The EPA did not indicate if this would be sufficient.

Action Items

1. The Navy will be submitting responses to EPA's comments on the final design submittal. These responses will address EPA's concerns regarding the stability analysis.

2. The Navy and Brown & Root will research appropriate test methods for determining the parameters EPA requires for stability analysis and will evaluate the feasibility of completing the tests.