STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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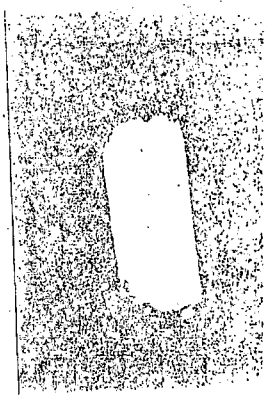

April 8, 2004

Mr. Brian Helland
Code 1811/BH
Department of the Navy,
Engineering Field Activity-Northeast
Naval Facilities Engineering Command
10 Industrial Highway, Mail 82
Lester, PA 19113

Re: Old Fuel Farm-Sept 2003 Monitoring Report
Naval Air Station, Brunswick

Dear Mr. Helland:

The Maine Department of Environmental Protection (MEDEP) has reviewed the draft "Groundwater Monitoring Report for the September 2003 Event at the Old Navy Fuel Farm", dated March 2004, prepared by EA Engineering, Science and Technology. Based on that review MEDEP has the following comments and issues.

General Comments:

1. MEDEP notes that the trend graphs are nicely done with the proper y-axis scale for easy readability. (NR)

2. While the September 2003 data do not support the conclusion that dissolved-phase DRO concentrations have continued to decrease from past levels, most of the monitoring wells had concentrations below 25 μg/L, which is below the Maximum Exposure Guideline (MEG). Apparent slight rises in DRO concentrations occurred at two wells, while a third well's data are in question due to a possible breach in well integrity. With an increase in seasonal precipitation in the late summer and fall of 2003, a slight rise in DRO is not surprising. If well integrity at MW-NASB-208R is not the reason for a large increase at this location, possibly a residual pocket of weathered petroleum yet exists, and was flushed by an increase in rainfall infiltration. See Specific Comments 5 & 7 below. (RR)

Specific Comments:

3. Section 1.2, Site Geologic Conditions, p. 1, last sentence:

   "The groundwater table occurs in the sandy zone, and groundwater flow is generally to the southeast, parallel to the surface topography."

   The flow direction is close to perpendicular to the topographic contours, and is not parallel to the surface topography. Please substitute "*drainage*" for "topography". (ED)

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4. Section 1.5, Groundwater Sampling Events, p. 5, first sentence:

   At the end of the first sentence, a reference to the recent report documenting the findings for the first six monitoring events needs to be added. This report is also missing from the list of references located immediately in front of Appendix A. (ED)

5. Section 3.1, Water Level Gauging Program, p. 8, 2nd paragraph:

   "A tar-like substance was observed in the well protective casing and on the outside of the polyvinyl chloride riser of MW-NASB-208R, possibly resulting from the recent paving activities around this well."

   MEDEP strongly recommends that the Navy needs to thoroughly investigate the situation described above to determine if the paving is responsible. The quantity of the substance in the annulus between the two casings, including its length along the riser, should be determined. The above description would suggest that the well construction has been compromised, as the protective well casing protrudes about 2 feet above the ground surface according to Table 2. If compromised, the elevated DRO found at this well (505 µg/L) may not be representative of in-situ contamination if the substance is entering the well. Other evidence of abnormality to consider regarding MW-NASB-208B include: (1) the well has the deepest well screen in the current monitoring network at the fuel farm, (2) the specific conductance of sampled water in September 2003 is very low (45 µmhos/cm) and resembles surface water runoff, and (3) the turbidity of purged water was 82 NTUs.

   Interestingly, MW-NASB-208R is located about midway on a line that runs east-southeast from MW-NASB-098 to MW-NASB-245, both of which still have DRO detections (35 and 48 µg/L, respectively). Perhaps not coincidentally, this orientation is the same as that mapped for groundwater flow. (RR)

   The Navy must also resolve the contradictory information regarding the MW-NASB-208R well construction. (See comment 8 below) (RR)

6. Section 4.1.2, Groundwater Monitoring and Sampling Program, p. 11, 2nd bullet:

   "Concentrations of TPH-DRO have increased at MW-NASG-208R for the last three events, although this well may not be representative of site groundwater conditions, as the well integrity may be compromised (Section 4.2)."

   Please see the comment 5 above. (NR)

7. Section 4.1.2, Groundwater Monitoring and Sampling Program, p. 12, 2nd bullet:

   "... and that downgradient concentrations of dissolved-phase TPH-DRO continue to decrease."

   Even if the DRO result for MW-NASB-208R can be discredited through further investigation of the casing integrity, the trend graphs in Appendix A do not support the above statement. While nine monitoring wells had concentrations that were below the detection limit (25 µg/L), three others (MW-NASB-098, MW-NASB-210, and MW-NASB-245) showed small rises in concentration. A decline was not documented in any monitoring well in September 2003. The above statement must be modified. (Also see paragraph 2 of comment 5 above.) (ED)

8. Table 2, Groundwater Monitoring Well Detail Summary:

In this table, MW-NASB-208R is designated as a replacement well by the "R" after the well number. The table furthermore gives the ground elevation as 72.7 feet and the top of casing elevation as 74.55 feet. These figures imply a stickup of the well is 1.85 feet above ground. However, in the table at the beginning of Appendix C, the well is called MW-NASB-208 and the well finish is indicated as a flush mount (i.e., no stickup). The table indicates that the well is not locked. The Field Record of Well Purging and Sampling in Appendix C also calls the well MW-NASB-208R, and indicates a flush mount installation. This field sheet further indicates that the well yield was very low, and that it was pumped down and sampled the following day. In the 20 minutes that the well was pumped, the measured turbidity shows more fluctuation than normally encountered. The following statement appears in Section 3.1: "This substance on the polyvinyl chloride riser was noted on the field form." The field form in Appendix C does not contain this note. However, the word "Dry" is crossed out, without any initially or dating. Clearly, there are a number of record-keeping issues and related explanations for this monitoring well that are needed. (RR)

9. Table 3, Monitored Natural Attenuation Parameters:

Two redox potential values are reported to the hundredth of a mV (1.39 mV and 1.51 mV). Please round these to the nearest tenth, unless documented justification can be presented that the field measurements are this accurate. (ED)

Thank you for the opportunity to review this report. If you have any questions or comments please call me at (207) 287-7713 or email me at claudia.b.sait@maine.gov.

Respectfully,

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Bureau of Remediation & Waste Management

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