



**RESPONSE TO COMMENTS FROM THE
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
ON THE DRAFT GROUNDWATER MONITORING REPORT
FOR SIX SAMPLING EVENTS, OLD NAVY FUEL FARM,
NAVAL AIR STATION, BRUNSWICK, MAINE**

Commentor: Claudia Sait	
Comment Issue Date: 25 February 2004	Navy Response Date: 4 March 2004

Thank you for your response to comments dated February 4, 2004, on the *Draft Groundwater Monitoring Report for Six Sampling Events for the Old Navy Fuel Farm*. For the record, MEDEP finds all the responses acceptable except as follows.

4. **Section 2.1.2, Groundwater Sampling Program, Page 7, 1st Paragraph**—"In accordance with the Groundwater Monitoring Plan (EA 2000a), only the shallow well was gauged and sampled at nested monitoring well clusters."

With the unexpected finding of MTBE in MW-NASB-098 (up to 15 µg/L in April 2003), the deeper monitoring wells should be sampled because this potent gasoline oxygenate is known to "dive" to greater depths than other fuel compounds in aquifers. The emergence of this issue assumes that the MTBE in MW-NASB-098 originated from the Old Fuel Farm site, however, the groundwater potentiometric contour map (Figure 8) does not readily support this premise. Nonetheless, a one event sampling at a minimum of the deeper wells for MTBE is needed. (RR)

Response—The detected concentrations of MTBE (ranging from 5.3 ug/L to 15 ug/L) are not unexpected since the presence of MTBE is very prevalent within the environment, occurring in the atmosphere, surface water and groundwater. As pointed out by the MEDEP, this well is not directly downgradient of the Old Navy Fuel Farm and given the low detected concentrations is most likely due another source, most likely a non-point source. Possible non-point sources include stormwater that contains fuel residues from roads, parking lots, etc. (API 1998 and USGS 1998). It has been reported that MTBE tends to stay in water and not sorb to subsurface solids, it can move to groundwater at almost the same rate as recharge water. Well MW-NASB-098 is a shallow screened well (3 to 13 feet below ground surface) and given the proximity to the road and location downgradient, this occurrence of MTBE as this location is most likely attributed stormwater runoff from roads

The MEDEP's statement that "this potent gasoline oxygenate is known to "dive" to greater depths than other fuel compounds in aquifers", is not supported here at this site, since a steep vertical hydraulic gradient would be needed for this to occur. Additionally, we question whether MTBE would in fact show any likelihood to 'dive' to deeper portions of the aquifer at these very low concentrations. Note that MTBE dissolves easily in groundwater and moves with the flow field. We request MEDEP to provide additional documentation on the rationale for why MTBE at 3.5 to 15 ppb would be found at lower depths within the aquifer.

At this time we disagree that sampling of deeper wells at the Old Navy Fuel Farm is warranted based on concentrations of MTBE detected below the State MEG in a shallow overburden. The Navy will continue to monitor this well and report on the concentration trend of MTBE. We request additional information or references from the MEDEP to support the contention that MTBE would not follow local groundwater flow patterns, and would be more likely to be found at depth.

MEDEP Response—MEDEP is willing to accept the Navy's response at this time however if MTBE continues to increase in concentration at MW-NASB-098 further investigation maybe necessary.

11. *Table 8, Monitored Natural Attenuation Parameters, Page 2 of 2*

- a. Under the Conductivity column, two values appear erroneous (1.12 and 5.34). It appears that the decimal point should be removed. (ED)

Response— The field data sheets were reviewed for the April 2002 Event. The conductivity value for MW-NASB-51 was checked and the correct value is 49 $\mu\text{mhos/cm}$ for the April 2002 Event. This error in Table 8 will be corrected for the final report. The field data sheets for the September 2003 Event were reviewed. The correct conductivity value is 5.34 $\mu\text{mhos/cm}$ for well MW-NASB-245. Only one field parameter reading was collected from MW-NASB-245 due to the lack of sufficient water in the monitoring well. Sampling activities were terminated and the well was allowed to recharge before sampling as per the groundwater monitoring plan for the ONFF. Due to the lack of water in the monitoring well, only one stabilization parameter was collected.

MEDEP Response—MEDEP cannot accept the above value as valid. New fallen rain water is commonly around 20 $\mu\text{mhos/cm}$, so a value of 5 $\mu\text{mhos/cm}$ would be close to distilled water. Other reported conductivity readings for this well in Table 8 range from 402 to 641 $\mu\text{mhos/cm}$. Therefore, it looks like the decimal point has been shifted two places too far to the left. MEDEP suggests flagging this value as questionable.

Navy Response—Please note that the September 2002 conductivity reading of 5.34 $\mu\text{mhos/cm}$ is the value recorded on the field form. This reading of 5.34 $\mu\text{mhos/cm}$ is not representative of the groundwater conditions at the Old Navy Fuel Farm. Only one stabilization parameter was collected at this monitoring well due to the lack of sufficient water in the monitoring well. Three consecutive stabilization readings were unable to be collected during purging of this monitoring well. The reported value of 5.34 $\mu\text{mhos/cm}$ does not represent true subsurface conditions; however, this was the value recorded on the field form for the first reading of field parameters. The following note has been added to Table 8:

The conductivity value for MW-NASB-245 in September 2002 was 5.34 $\mu\text{mhos/cm}$. This value was collected after one field parameter reading due to the lack of sufficient water in the well. The value does not represent the true conductivity of the groundwater at MW-NASB-245 in September 2002 because field parameters were not allowed to stabilize.