



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

N60087.AR.001202  
NAS BRUNSWICK  
5090.3a

ANGUS S. KING, JR.  
GOVERNOR

MARTHA KIRKPATRICK  
COMMISSIONER

July 24, 2002

Mr. Orlando Monaco  
Department of Navy  
Engineering Field Activity-Northeast  
Code 1823/OM  
.10 Industrial Highway, Mailstop 82  
Lester, PA 19113-2090

Re: Sites 1, 3 & Eastern Plume-Monitoring Event 19-October/November 2001  
Naval Air Station, Brunswick, Maine"

Dear Mr. Monaco:

The Maine Department of Environmental Protection (MEDEP) has reviewed the report entitled Monitoring Event 19-October/November 2001, dated May 2002, prepared by EA Engineering, Science and Technology. Based on that review the Department has the following comments and issues.

**General Comments:**

1. Contaminant Rebound at End of Extraction Shutdown

MEDEP has studied the October 2001 (ME-19) contaminant concentrations in relation to concentrations reported for April 2001 (ME-18), and what changes occurred as a result of the extraction well shutdown for 50 days. The comparison showed a wide range of response, and some surprises, as follows:

- MW-229A: Total VOCs plummeted to about 1/40 of April value (from 83 to 2 µg/L). This well is approximately 150 feet south of EW-01.
- EW-04: Total VOCs dropped to about 1/3 of April value.
- MW-319: Total VOCs dropped to about 1/2 of April value.
- MW-311: Total VOCs remained nearly unchanged, however, the dominant solvent dramatically switched from TCE to 1,1,1-TCA after shutdown (1,1,1-TCA went from 170 to 3 µg/L).
- EW-02A: Total VOCs and solvent composition did not change much.
- MW-105A: No VOCs were detected for both events.
- MW-205: Total VOCs increased to about 1.5 times the April value (a new record high).

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769-2094  
(207) 764-0477 FAX: (207) 764-1507

- MW-225A: Total VOCs increased 3 times the April value.
- MW-331: Total VOCs increased 3+ times the April value. 1,2-DCE increased nearly 6 times. October total VOCs slightly exceeded the highest on record when sampling began in November 1998 after well was installed.

(NRR)

2. Plume Capture Concerns in MW-205 Area

The above information when viewed with data in the 2001 direct-push investigation has prompted a concern that more plume contamination is apparently present in the MW-205 area than previously recognized. In light of the declining pumping rate at EW-01 and evidence from past potentiometric maps indicating its capture zone does not extend even half way to MW-205, an apparently significant mass of VOCs has not been addressed by past remedial pumping. MEDEP understands that the Navy is planning to redesign EW-01, which has a well screen of 78 feet, to eliminate drawing from both the uncontaminated shallow and contaminated deep sandy zones. Such optimization of plume extraction in this area is encouraged, and with this in mind, the Navy should explore the benefits of moving EW-01 into the MW-205 vicinity. MEDEP, in consultation with EPA, can be ready to present our analysis of geologic and chemical data in support of relocating EW-01 at the next technical meeting. (RR/MTG)

**Specific Comments:**

3. Section 1.2.2, Results, p. 4, last sentence of top para:

As pointed out in our comments for Monitoring Event 18 Report (Comment 2), the water-level trend in EW-06 has been quite unusual as far back as 1998. As stated in our earlier comment the well and vault must be closely inspected for integrity, and repairs made as appropriate. Until this is done the data from this well is questionable for Site 1 & 3 evaluations. (RR)

4. Section 1.3.2, Water Quality Indicator Parameter Measurements, p. 5, 3<sup>rd</sup> para:

a.) "It should be noted that 10 of 28 monitoring wells sampled within the Eastern Plume were sampled with diffusion samplers only, and, therefore, only one set of water quality parameters was collected in-well following ADS of those 10 monitoring wells."

Historically, just one set of water quality parameters has been collected per well, therefore the fact that two sets of parameters (reported in tables 6 and 7) were collected in 15 wells should be emphasized, and the reason given in this paragraph. (ED)

b.) "The elevated turbidity is not expected to affect the quality of the sample data because it is consistent with previous monitoring event data."

Technically, the rationale given is not sound. The following wording is suggested: "The elevated turbidity is consistent with previous monitoring event data, and therefore, long-term concentration trend evaluations can be performed to indicate general trends. However, comparisons with data from monitoring wells with less than 10 NTUs of turbidity could be questionable for certain parameters." (ED)

5. Section 1.3.3.4, Ground-Water Extraction and Treatment System, p. 7, only sentence:

The reason given for not collecting water quality indicator parameters does not appear valid, as VOC samples were collected from these wells on November 19, 2001 and are reported in Table A-4. What was different between this date and April 30, 2001 (ME-18) that prevented collection of indicator parameters? (RR)

6. Section 1.5.1, Inspection Activities, p. 10, 1<sup>st</sup> bullet:

"Some settlement was noted in the vicinity of MW-217A. Further investigation is warranted to determine the cause of this subsidence."

Reporting more information on what was observed in the field is also warranted. The Navy should report the depth of the subsidence and the diameter of the area affected. Is the integrity of MW-217A in jeopardy? Items like this are routinely reported and should be discussed at the Technical Meeting following the monitoring event. (RR)

7. Section 1.7, Analytical Data Quality Review, p.11:

"With consideration of the data qualifiers and notes provided in Appendix C, the data represented in this report were found to meet specified acceptance criteria and, therefore represent data in compliance with the Quality Assurance Project Plan (EA 2000a)."

"Notable findings of the analytical data quality review are summarized in Table 13."

Table 13 consists of 4 pages of false-positives, estimated, estimated bias low, and estimated bias high qualifiers that involve nearly every well sampled and include contaminants of concern, such as 1,1,1-TCA, TCE, PCE, and benzene. Whether the many instances of methylene chloride and acetone false-positives due to various types of blank contamination should be reported as "notable findings" needs to be decided by the technical committee members. MEDEP requests that the topic of data quality be scheduled for an upcoming technical meeting to develop a common understanding of when data would be out of compliance according to the QAPP, and compare this with recent monitoring event reports. (MTG)

8. Figure 5, Interpreted Shallow Ground-Water Potentiometric Surface, October 29-30, 2002:

The contouring around two monitoring wells (EW-01 and MW-225B) is unexpected and almost certainly does not accurately represent shallow groundwater in these localities. Potentiometric contours indicate a 7-8 foot deep "sink" around MW-225B, and contours drawn around EW-01 indicate a 7-8 foot deep mound. Hydraulically, both are highly unusual features, not previously recognized. In light of the September 11 shutdown of the extraction well system, heads in the groundwater system have generally recovered between 6 and 8 feet during the 50 days prior to the Event 19 water-level measurements. MEDEP makes the following observations, and asks for the Navy's interpretations in the Annual Report.

(1) The mound around EW-01 is likely due to the confined pressure head of the lower sand dominating within the 78-foot long screen. EW-01's potentiometric elevation would fit nicely with the deep groundwater contours (Fig. 6). It seems that EW-01 should be removed from use with shallow potentiometric mapping (i.e., Figure 5).

(2) The sink around MW-225B is difficult to explain at this time. The water level has fluctuated within a 10-foot range since 1999, with no correlation to season. In October 2001, its water elevation does not fit with any surrounding data for either the shallow or deep groundwater zone. No recovery from the pumps being off was realized, in fact, the level was extremely low, compared to past data. The two "easiest" explanations are that (a) false levels have been inadvertently measured (moisture on riser), or (b) a well is being periodically pumped at the Weapons Compound, and that this well's drawdown reaches out elliptically towards MW-225B. If such a well exists and was used during the September 11 to November 13 shutdown this may also explain the water level in MW-220, just north of the Compound, which was also depressed about 5 feet from what Figure 6 contours would suggest (it was apparently ignored in drawing contours).

In order to eliminate the possibility of a well in the Weapons Compound Area it is essential that the Navy determine and state for the record whether there is a well for the Weapons Compound Area and if there is get the location, depth and rough monthly volume pumped. (RR)

9. Table 4, Monitoring Well Gauging Summary, Eastern Plume:

The water level measured in MW-231A is incorrect. The correct elevation is 23.66 feet, instead of 20.70 feet. It appears that the measurement was not transcribed correctly from Appendix B-1 field record sheet. (ED)

10. Table 5, Ground-Water Extraction Flow Rate and Run Time Summary:

This table was not updated in our report copies, and covers the same period as Monitoring Event 18. Please correct in the Annual Report for 2001. (ED)

Thank you for the opportunity to review this report. If you have any questions or comments please call me at (207) 287-7713.

Respectfully,



Claudia Sait  
Project Manager-Federal Facilities  
Bureau of Remediation & Waste Management

Cf: File  
Larry Dearborn-DEP  
Anthony Williams-BNAS  
Michael Barry-EPA  
Carolyn Lepage-Lepage Environmental  
Al Easterday-EA  
Ed Benedikt