



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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May 31, 2005

Mark Evans, Remedial Project Manager  
U.S. Department of the Navy  
Naval Facilities Engineering Command  
Northern Division  
10 Industrial Highway  
Code 1823, Mail Stop 82  
Lester, PA 19113-2090

Re: Year 5 Annual Groundwater Monitoring Report for the Area A Landfill

Dear Mr. Evans:

EPA reviewed the *Year 5 Annual Groundwater Monitoring Report for Area A Landfill*, dated May 2005 in light of its conformance to the Groundwater Monitoring Plan [1], completeness of the execution and presentation, consistency of the interpretations with the available data, and appropriateness of the recommendations. The report provides a review of the site history, environmental investigations, and monitoring results from the first five years of the current program, as well as detailed results from sampling and analyses performed in June and October 2005. Detailed comments are provided in Attachment A.

The field and analytical activities summarized in the Groundwater Monitoring Report (GMR) follow the Groundwater Monitoring Plan [1].

Observations from Year 5 are generally consistent with previous monitoring results. Qualitative review of the data raises no significant concerns with respect to contaminants from the site that may have impacted groundwater or surface water. Primary monitoring criteria for groundwater were exceeded for total copper and total chromium, but these detections were below the corresponding background measure. Primary criteria for surface water were exceeded for total and dissolved Cd, total Cr, total and dissolved Cu, total and dissolved Pb, and total and dissolved Zn. The only element present in the filtered surface water samples at concentrations significantly higher than the primary monitoring criterion is zinc (maximum concentration 643.2 micrograms per liter at SG-23, Round 15, exceeding the primary monitoring criterion by a factor of about 10X). These elements have remained somewhat elevated relative to the monitoring criteria from round to round.

Following the Draft Year 3 monitoring report (2003), there was a verbal agreement that the downgradient monitoring wells screened in the dredge spoil are redundant, and do not appear to reflect significant influence from the landfill. At the time, it was proposed to drop 2WMW38DS, -39DS, -41DS, -45DS, and -47DS. In addition, the discussion acknowledged

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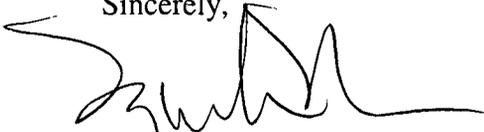
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rather sparse monitoring coverage of the alluvium, which may be a significant transport pathway for groundwater passing beneath the landfill and then to the north and northwest. At the time, it was proposed to add monitoring well 20LOW1D for a minimum of four rounds. What has become of these proposed changes? The present document shows that Area A Landfill monitoring is proceeding as it was prior to this discussion, and the same is recommended for Year 6.

I look forward to working with you and the Connecticut Department of Environmental Protection to protect the environs of the Naval Submarine Base. Please do not hesitate to contact me at (617) 918-1385 should you have any questions or wish to arrange a meeting.

Sincerely,



Kimberlee Keckler, Remedial Project Manager  
Federal Facilities Superfund Section

Attachment

cc: Mark Lewis, CTDEP, Hartford, CT  
Melissa Cokas, NSBNL, Groton, CT  
Bart Hoskins, USEPA, Boston, MA  
Chau Vu, USEPA, Boston, MA  
Pamela Harting-Barrat, USEPA, Boston, MA  
Jennifer Stump, Gannett Fleming, Harrisburg, PA

## ATTACHMENT A

<u>Page</u>	<u>Comment</u>
p. 2-1, §2.1	The text notes a number of maintenance issues with respect to the monitoring wells ( <i>e.g.</i> , eroded gravel from well pads, <i>etc.</i> ). The final section (p. 5-2, §5.0, final bullet) recommends that maintenance be conducted. How and when will these issues be addressed?
p. 2-2, §2.2	As noted in reviews of previous monitoring reports for the Area A Landfill, the interpretation of the potential surface shown in Figure 2-2 is consistent with the available data in the vicinity of the landfill. However, the interpretation on the upgradient side of the site ( <i>i.e.</i> , to the southwest) is not well constrained by data. The contours shown are based largely on interpolation between the single well on the elevated upland area (4MW1S) and downgradient points. It seems unlikely that the 110-foot and 120-foot contours are closed around 4MW1S, with more elevated topography lying to the southwest. Similarly, the 100-foot and 90-foot potential contours likely tend to parallel the topographic contours. These remarks have no important consequences for the monitoring program or for interpretation of the water-quality data. Nonetheless, the potential surface should not be overinterpreted in areas of low data coverage. The apparent groundwater “mound” centered on 4MW1S is largely an artifact of the lack of water-level control to the south and west.
p. 3-1, §3.0	The text refers to Tables 3-2 and 3-3 for analytical results. Minor discrepancies in the tables include: <ul style="list-style-type: none"><li>• Dissolved Zn for SG-24 in Round 14 is highlighted in blue. The result is 9.3J ppb, while the primary monitoring criterion is 65 ppb. Please check.</li><li>• Total Cu for SG-23 in Round 14 is highlighted in blue. The result is 1.5 ppb, while the primary monitoring criterion is 4.8 ppb. Please check.</li></ul>
p. 3-2, §3.0	<i>third bullet:</i> The text notes that total As was found above the background value (1.92 ppb) at 2WMW44DS in Round 15. This is confirmed by the entry in Table 3-2 of 3.55J ppb. However, the entry in the table is not highlighted in blue, as are other exceedances of background. Please check for consistency.
p. 3-2, §3.0	<i>fourth bullet:</i> The text notes that dissolved As was found above the background value (2.55 ppb) at 2WMW44DS in Round 15. Table 3-2 shows that As was not detected for this sample, but that the detection limit (4 ppb) was greater than the background value. Therefore, no conclusion can be drawn with respect to As relative to background here. Perhaps some notation ( <i>e.g.</i> , another color for

highlighting, a footnote, *etc.*) could be developed to flag cases such as this, where the laboratory reports detection limits greater than the criteria to which the results are compared.

- p. 3-3, §3.0 *third and fourth bullet:* It should be noted that the detection limit achieved for the cadmium analyses is generally higher (up to 5 ppb) than the primary monitoring criterion (0.25 ppb), so that no comparison can be made. Please see previous comment on developing notation to flag such occurrences.
- p. 4-4, §4.2 The text notes that total chromium in downgradient groundwater appears to exhibit an increasing trend overall since 2001. A plot provided at the end of the document seems to support this statement. It is acknowledged that the analytical results for total chromium do not seem to be of particular concern; all are well below the background value, and the three detections in Round 15 above the primary monitoring criterion are within a factor of 2X that value. Nonetheless, a rising trend, if real, demands an explanation. Have the data for total chromium been reviewed thoroughly for other factors that might influence this apparent trend? Turbidity data should be examined for any temporal trend at these three wells. Also, it may be pertinent to review reported laboratory detection limits for chromium through this period of monitoring. Can a trend in redox conditions be identified for these wells?
- p. 5-2, §5.0 *typo?* Please change (second bullet on this page) “Those wells include downgradient wells 2LMW20S and 4MW1S as upgradient wells ...” to “Those wells include 2LMW20S and 4MW1S as upgradient wells ...”.

## REFERENCE

- [1] Tetra Tech NUS, Inc., “Groundwater Monitoring Plan for Area A Landfill, Naval Submarine Base, New London, Groton, Connecticut,” January 1999.