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ATKEARNEY

Ms. Elizabeth Van Rabenswaay
Regional Project Officer
U.S. Environmental Protection Agency, Region 2
26 Federal Plaza
New York, New York 10278

Reference: Contract No. 68-W4-0013; EPA Work Assignment
No. R02020; Roosevelt Roads; Technical Review
of Documents; Task 02 Deliverable

Dear Ms. Van Rabenswaay

On January 13, 1995, the Environmental Protection Agency (EPA) held a meeting to discuss concerns with the Supplemental Investigation Report and Pre-Investigation Corrective Measures Study Report for the Roosevelt Roads Naval Station located in Ceiba, Puerto Rico. Meeting attendees included representatives from EPA, the U.S. Navy, Baker Environmental, Inc. ([Baker] contractor to the U.S. Navy), and TRC Environmental Corporation, subcontractor to A.T. Kearney. In this meeting, the Navy distributed a document intended to address EPA's concern regarding elevated sample quantitation limits for soil and sediment samples collected during the Supplemental Investigation. The Kearney Team was tasked to evaluate the data uses/limitations presented in this Baker document, entitled *Draft Additional Information Analytical Results - Provided as an Addendum to Supplemental Investigation, Installation Restoration Program Activities, Naval Station Roosevelt Roads, Ceiba, Puerto Rico* dated June 24, 1994. Based on our evaluation of this document, we believe that soil and sediment resampling for SVOC's is the only practical cost effective option for correcting the data deficiencies. Our evaluation of the proposed data uses and limitations is discussed below.

The referenced document indicates that the sample quantitation limits (SQLs) for semivolatile organic compounds (SVOCs) were elevated to the point where the non-detected concentrations produced risk estimates above the 10^{-6} point of departure established by the National Contingency Plan. It also contends that the SQLs are inappropriate for risk assessment purposes, and recommends that the SQLs be replaced with instrument detection limits (IDLs) for assessing risk. The Kearney Team disagrees with this contention and recommendation, for the reasons presented below.

First, it is important to understand what an IDL represents. The IDL strictly defines operational sensitivity of the instrument (i.e., the lowest concentration that an instrument is capable of detecting). IDLs are generally determined once a year for each instrument before environmental samples can be analyzed. These values are typically derived from an instrument's response to a standard volume of water which contains the compounds of interest. In short, IDLs are developed from periodic laboratory exercises using standards prepared in the laboratory. IDLs are not developed from environmental samples collected from Solid Waste Management Units.

An SQL is a lower limit at which a concentration can be assigned to a compound detected in a given environmental sample. At and above this limit, the laboratory can report the quantity of detected compound with sufficient confidence to be legally defensible under the Contract Laboratory Program (CLP). Below this limit, the reported concentration is questionable because the instrument does not respond consistently to a known concentration of test chemical. IDLs fall below SQLs and therefore have less certainty associated with them.

Unlike IDLs, SQLs are calculated for each environmental sample that the laboratory analyzes. SQLs account for sample extraction, dilution, other preparatory procedures, and/or matrix interferences. In addition, SQLs are adjusted for solid content of soil samples, another factor that is not incorporated into IDLs since the latter are derived from aqueous standards. Given these differences, it is more appropriate to use SQLs to describe the degree of contamination at a given site.

Another reason that SQLs should not be replaced by IDLs is that SQLs are specifically prescribed for assessing risk according to current risk assessment guidance (Guidance for Data Useability in Risk Assessment, 1990). This guidance emphasizes the need to use sample-specific quantitation limits rather than generic instrument detection limits.

Having established the importance of SQLs, it should be essential to note that the SQLs from the recent Supplemental Investigation are elevated above the risk-based action limits for many of the SVOCs. Since the quantitation limits exceed risk-based action limits, it is possible that some SVOCs may be present at concentrations above the risk-based limits. This indicates that the analytical results are not sufficiently sensitive for comparison to these regulatory criteria. Since the elevated SQLs were reportedly due to laboratory error (i.e., inadvertent sample dilution) rather than matrix interference or other complicating site-specific factors, re-sampling is the only practical option for correcting the data deficiency.

Although resampling is recommended, it should be unnecessary to perform it immediately. The existing data demonstrate the absence of grossly excessive levels of SVOCs in soil and sediments at the

Roosevelt Roads Naval Station. Therefore, resampling could coincide with future scheduled sampling events. Furthermore, since it appears that the elevated SQLs were a result of laboratory error, it would be prudent for the Navy to investigate having the laboratory pay for the analysis for all samples that had to be re-collected.

In summary, the proposal to replace elevated SQLs with IDLs is not appropriate because the IDLs are not sample-specific values and current risk assessment guidance specifies the use of SQLs rather than IDLs. Since the SQLs from the recent sampling event exceed risk-based action limits for SVOCs, resampling is recommended to correct this issue. Resampling is a technically feasible corrective action because soil conditions were not responsible for elevating the SQLs, a laboratory error was the cause. Resampling can coincide with future scheduled sampling events instead of occurring as a separate sampling event because existing data do not show grossly excessive SVOC concentrations at the facility.

For your convince, we have enclosed a copy of this letter on a 3.5-inch diskette formatted in WordPerfect 5.1, Courier 10.

Should you have any questions regarding this evaluation and/or recommendation, please do not hesitate to contact me or the A.T. Kearney Work Assignment Manager, Douglas Sullivan, at (212) 425-5470.

Sincerely,



William D. Goold
Regional Manager

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