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55 Jonspin Road • Wilmington, MA 01887-1020
Tel 978.658.7899 • Fax 978.658.7870 • www.tetrattech.com

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February 22, 2001

Project Number N5278

Ms. Kimberlee Keckler
U.S. Environmental Protection Agency
Federal Facilities Superfund Section
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Reference: CLEAN Contract No. N62472-90-D-1298
Contract Task Order 0218

Subject: Sediment PRG Development
Old Fire Fighting Training Area
Naval Station Newport, Newport, Rhode Island

Dear Ms. Keckler:

At the request of Mr. James Shafer, the Navy Remedial Project Manager (RPM) for the OFFTA site, I am responding to your letter dated January 16, 2001 expressing your concerns on the progress in developing sediment preliminary remediation goals (PRGs) for the OFFTA site and offering six alternative solutions. The Navy has reviewed the EPA sediment PRG development alternatives for the OFFTA Site and is providing responses (Attachment A). The EPA's comments on each PRG development alternative been itemized and presented verbatim in italic type followed by the Navy's response in standard type.

In addition, as discussed in the teleconference held with you, RIDEM and Navy project representatives on January 24, 2001, the Navy is developing a site-specific sediment PRG development process for the OFFTA site. The proposed OFFTA sediment PRG development process is based on human health risk and ecological risk, and partly incorporates some of the alternatives discussed in your letter. The ecological based process is derived from the PRG process recently used for the Portsmouth Naval Station in Maine that evolved from the McAllister Landfill Site (NAV STA Newport) PRG development process.

Please contact me or Jim Shafer of the Navy if you have any questions about this transmittal or would like to discuss this matter further.

Very truly yours,


James R. Forrelli, P.E.
Project Manager

JRF:rp

Enclosure

- c: J. Shafer, NORTHDIV (w/enc. - 3)
 M. Griffin, NAV STA Newport (w/enc. - 2)
 P. Kulpa, RIDEM (w/enc. - 2)
 K. Finklestein, NOAA (w/enc.)
 M. Imbriglio, NAVSTA/RAB (w/enc. - 5)
 J. Stump, Gannet Fleming (w/enc. - 2)
 D. Egan, TAG (w/enc.)
 G. Tracey, SAIC (w/enc.)
 J. Trepanowski/G. Glenn, TtNUS (w/enc.)
 File N5278-8.0 (w/enc.)/File N5278-3.2 (w/o enc.)

**ATTACHMENT A
RESPONSES TO
EPA ALTERNATIVE PRG PROPOSALS
EPA LETTER DATED JANUARY 16, 2001
OLD FIRE FIGHTING TRAINING AREA (OFFTA)
NAVAL STATION NEWPORT
JANUARY 26, 2001**

No. Comment/Response

1. *EPA is concerned about the recent proposal to use the Effects-range medium ("ER-M") concentrations or some variation of them, for cleanup goals at the Old Fire Fighter Training Area. It is imperative that the ultimate remedy selected for the site is both technically and legally defensible. ER-M guidelines were derived from a myriad of available data including those from sediment toxicity tests and field studies. The biological data compiled for derivation of the ER-M guidelines included a variety of different taxonomic groups and toxicological end points. The intent of the ER-M guidelines is as a screening tool in environmental assessments. They were never intended to preclude site-specific toxicity tests or other measures of biological effects. Sensitivities of different taxa to individual toxicants can vary considerably. The bioavailability of contaminants in sediments is largely dependent upon the chemical and physical properties of that sediment. As a result, EPA strongly supports the use of site specific data to derive clean up goals. As stated repeatedly by the researchers of the National Status and Trends Program, Effects-range low and ER-Ms are guidelines "...are not intended for use in regulatory decisions...."*

Response: The Navy agrees that screening values such as the ER-M are not intended to be used as cleanup goals and does not intend to use them as such at OFFTA. The Navy plans on using site-specific data to generate cleanup goals for the site.

2. *Formal PRG Development Process - As was used successfully at the McAllister Point Landfill, this method involves use of the data collected as part of the ecological risk assessment to generate cleanup goals. PRGs are developed to provide a risk-based means of focusing the remediation on the areas posing greatest risks. At the McAllister Point Landfill, each exposure pathway (aquatic, avian, and human health) for which an unacceptable risk had been identified was evaluated. These pathways were evaluated to determine a risk-based point-of-departure that would target risk reduction to most critical areas. An evaluation of site-specific chemical bioavailability was included in the PRG derivation via equilibrium partitioning and the use of SEM-AVS data. Toxicity test information was included to identify the highest concentration for which effects are unlikely. Other information from the ecological risk assessment was also included in the combined exposure pathway PRG development process. This formal PRG development process has the benefit of documenting for the record, based on site-specific data, a technically sound procedure for developing cleanup goals. EPA has used this methodology successfully at many other Superfund sites.*

Response. The PRG process that was used at Portsmouth Naval Shipyard (PNS) will be used to develop PRGs at OFFTA. The procedure used at PNS was selected because it is a more recent iteration of the procedure that was used at McAllister Point. The PRGs will be developed for the aquatic and human health pathways only, because no unacceptable risks to avian receptors were identified in the ecological risk assessment.

- 3 *Apparent Effects Threshold - This method has been used on the west coast (e.g., Puget Sound). Typically, the highest concentration of a contaminant of a sample not exhibiting toxicity is chosen as the cleanup goal.*

Response: The AET process is partly incorporated into the PRG process because the highest porewater concentration (or 95 % upper confidence limit) in samples that are not toxic are used to develop the PRGs. AETs, based on sediment concentrations, may be used to assess the PRGs that are developed as part of the proposed PRG process.

4. *Correlation of Sediment Concentration with Effects - This method involves developing dose-response relationships using the toxicity and chemistry data from the ecological risk assessment. Using individual scatter plots of the relationship made from the site-specific data, a cleanup goal is selected by determining the desired percent survival in the test organisms (e.g., 80%) and reading downward to determine the corresponding chemical concentration. Other cleanups have used a range from 20 to 30% greater mortality over reference concentrations as the remedial action objective for the desired percent survival. It is important to note, however, that this method may require use of reference data or a toxicity identification evaluation. Use of a total PAH concentration could simplify this method.*

Response: This approach may not work well for this site because of a relative lack of toxic sediment samples. However, if there are relationships between sediment concentrations and effects, they will be used to assess the PRGs developed from the process used at PNS.

5. *Equilibrium Partitioning Sediment Guidelines - This approach applies to nonionic organic chemicals. In this approach, the PRGs are calculated such that chemical concentrations in sediment correspond to chemical concentrations in interstitial water below ecological criteria. For example, a total PAH cleanup number would be calculated based upon site-specific sediment chemistry, (TOC), ecological criteria, and an equilibrium formula. Bioavailability is emphasized.*

Response: Equilibrium partitioning is the basis of the PRG process that is proposed to be used for the organics at this site because the toxicity in the toxicity test samples is assumed to be due to the chemical concentrations in the pore water. However, the PRG process uses the results of the toxicity tests to determine the concentration for the ecological criteria (i.e., 95% UCL pore water concentration in the non-toxic samples).

6. *Removal of the top two feet of sediment along the shoreline and backfilling with clean sediment - Currently, there is no clear justification in the administrative record to support remedial action at the stations mentioned in the December 22, 2000 E-mail message (1, 2, 3, 4, 5, 6, 7, and 12). In fact, four of these stations were determined in the ecological risk assessment to pose a low risk. While removing the top two feet would remove the exposure pathway for many benthic organisms, it is unclear how the seaward extent of the sediment removal would be determined. Development of cleanup goals would both establish the spatial extent of remedial action and establish a method to evaluate whether remedial action objectives have been met. Removal of solid waste from the intertidal zone could be argued to be adequate justification for action.*

Response Comment noted.

7. *Adopting the PRGs Developed for the Nearby McAllister Point Landfill - Owing to the proximity of the sites, it may be appropriate to adopt cleanup goals from nearby sites. However, most of the COPCs at OFFTA are PAHs while the cleanup goals at the McAllister Point Landfill were developed for nickel, copper, fluorene, anthracene, pyrene, and PCBs. Certainly, similarities among various physical parameters would need to be evaluated before such an adoption could take place. In order to determine whether this method is appropriate, an evaluation to determine whether risk drivers at Old Fire Fighter Training Area are co-located is necessary. Additionally, there needs to be an evaluation of whether achieving the McAllister Point Landfill PRGs at Old Fire Fighter Training Area will result in sufficient risk reduction.*

Response: The Navy must develop site-specific sediment cleanup goals. Use of McAllister Point PRGs is not appropriate for OFFTA for several reasons. The constituents of concern are different (metals, PCBs, limited PAHs for McAllister; PAHs for OFFTA). Also, site-specific differences in the bioavailability of these contaminants can change the concentrations at which these contaminants would cause toxicity.

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