UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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James Shafer, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
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10 Industrial Highway
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Paul Kulpa, Remedial Project Manager
Rhode Island Department of Environmental Management
Office of Site Remediation
235 Promenade Street
Providence, RI 02908-5767

Re: Old Fire Fighter Training Area

Dear Messrs. Shafer and Kulpa:

I writing to you directly to express my concern over the stalemated progress at the Old Fire Fighter Training Area site and to offer six alternative solutions that may move the site closer to cleanup. Despite numerous meetings and conference calls over the last two years (November 10, 1998; March 18, 1999; May 24, 1999; June 14, 1999; November 4, 1999; and December 8, 1999), outstanding issues regarding the ecological risk assessment and the background data remain.

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...."

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.

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.

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.

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.

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.

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.

One benefit of developing numerical cleanup goals is that it is not complicated to determine when the remediation is complete. Pre-design studies could better delineate the areas requiring remediation. Clearly, the final remedy selected will need to be selected from a range of alternatives using the nine criteria for evaluation set forth at 40 C.F.R. § 300.430(e)(9)(iii).

I would appreciate it if you could respond to this letter by February 9, 2001 to let me know whether any of the aforementioned six proposals are acceptable to you. I look forward to working with you toward the cleanup of the Old Fire Fighter Training Area. Please do not hesitate to contact me at (617) 918-1385 should you have any questions. I recommend that we meet soon to set a course for site cleanup.

Sincerely,

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

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