State of California

Memorandum

To : Mr. Chip Gribble
California Environmental Protection Agency
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710-2737

Date: July 8, 2004

From : Mr. Frank Gray
Environmental Scientist
Office of Spill Prevention and Response
California Department of Fish and Game

Subject : **Review of the Technical Memorandum Evaluation of Offshore Data Gaps, dated August 29, 2003, at Mare Island Naval Shipyard, Vallejo, California.**

The Department of Fish and Game, Office of Spill Prevention and Response (DFG-OSPR) has reviewed the subject report. This document characterizes the east and southern offshore areas (Area K) at Mare Island Naval Shipyard, Solano County. We agree with the U.S. Environmental Protection Agency, the Department of Toxic Substances Control (DTSC), and the U.S. Fish and Wildlife Service that unacceptable ecological risks are present in sediments in cells of the Fleet Reserve Piers, Berths 1 and 2, North Mare Island Strait, South Mare Island Strait, Dike 14, and Dike 12. These risks should be addressed in a revised Ecological Risk Assessment for Investigation Area K.

Scope of Review

The DFG has statewide jurisdiction over the conservation, protection, and management of fish, wildlife, and native plants, and the habitat necessary for biologically sustainable populations of those resources. The following are comments to fulfill part of our role as a natural resource trustee for the State of California's fish and wildlife and their habitats. The DFG-OSPR has provided the DTSC with Applicable or Relevant and Appropriate Requirements applicable to Mare Island Area J, via a memorandum dated October 31, 2001.

Background

Most of the sites which are addressed in the subject report are submerged bay lands. Species, which may be found in these areas, include the State and federally threatened Delta smelt (*Hypomesus transpacificus*). The project area is within the designated critical habitat of this species. Other species, which may be found, include, but are not limited to, the white sturgeon (*Acipenser transmontanus*) and striped bass (*Marone saxitilus*). Other aquatic species, as well as terrestrial species, may be present at the mudflats near the Fleet Reserve piers.

The DFG has access to much biological information about these habitat types. The DFG's California Natural Diversity Database (CNDDB) can be accessed via the following site: http://www.dfg.ca.gov/whdab/html/cnddb.html. In addition to the information, which is available at that URL, there is information, which is available through the CNDDB to the public digitally or as hard copy. Products include a personal computer application called Rarefind, hard copy graphic overlays at 1:24,000 scale, and printed text reports. For more detailed information about the CNDDB, please call (916) 324-3812.

Specific Comments

1. Pg. 7, Step 1: The DFG-OSPR recommends use of ER-Ls (effects range-low) rather than ER-Ms to identify Chemicals of Potential Concern in the weight-of-evidence evaluation. The ER-M reflects a chemical concentration above which adverse effects are expected to be frequent. This does not correspond to a "low" risk as is suggested by text in this section.
2. Pg. 7, Step 2: Contaminant levels in subtidal sediments vary significantly within a short distance and can also vary over time. It is unclear whether sediment samples were collected as a single grab sample or as a composite sample at a given station. If it was a single grab sample, the results from the amphipod survival bioassay might not fully reflect the exposure to the benthic invertebrate community living within the area. Please clarify this issue.
3. Pg. 7, Step 3: For additional offshore characterization of a BERA, we recommend that macro benthos assessment be included in the weight-of-evidence analysis. Benthic organisms are the most common targets in biological assessments of sediment quality. This is because they are important ecosystem components that provide a primary food source for many fish, birds, and mammals. A method for assessing impacts of sediment contamination upon the benthos in the San Francisco estuary has been developed (Thompson and Howe, 2004)[1]. For additional information regarding this method, please contact the San Francisco Estuary Institute. This method should be added to sediment chemistry, toxicity, and bioaccumulation in the weight-of-evidence analysis.

Benthic community analysis can reveal whether adverse conditions are present because varieties of benthic organisms present in San Francisco Bay have highly variable tolerances to contaminants. For example, several indices, such as community indices, dominance, number of taxa, and abundance, could be used along with polychaete, crustacean, and mollusk abundance. Stations reporting two or more of these indices at values less than the reference value can be considered to represent adverse benthic conditions.

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[1] References: Thompson and Howe, 2004. Assessment of Macrobenthos Response to Sediment Contamination in the San Francisco Estuary, U.S.A., San Francisco Estuary Institute, In Press.

Summary

The DFG-OSPR appreciates the opportunity to review this document. We look forward to working with you and others in the CERCLA remediation process at Mare Island Naval Shipyard. If you have any questions regarding this memo or require further details, please contact me at (916) 327-9961 or by e-mail at fgray@ospr.dfg.ca.gov.

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