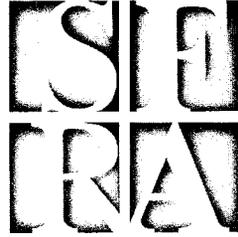


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HUNTERS POINT
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450-04100-190

October 13, 2000

Mr. Richard Mach
Southwest Division Naval Facilities
Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5190

SUBJECT: CITY COMMENTS, DRAFT FINAL VALIDATION STUDY WORK PLAN, PARCEL F, HUNTERS POINT NAVAL SHIPYARD

Dear Mr. Mach:

The City has several comments and concerns following a broad overview of the document "*Hunters Point Shipyard Parcel F Validation Study Work Plan*". Although we haven't completed a detailed review, we believe the work plan has several design flaws and is insufficient to accomplish the stated study objectives. We believe these insufficiencies undermine the Navy's objective of performing a scientifically defensible investigation and impede the RI/FS timeline to effectively close and transfer the site.

Our comments are attached and include General Comments, and Specific Comments through page 17. If you have any questions please contact me at 415-749-2400.

Sincerely,

A handwritten signature in black ink, appearing to read 'Byron Rhett', is written over the typed name.

Byron Rhett
Senior Project Manager
Hunters Point Shipyard

Enclosure

cc: Sheryl Lauth, EPA
Brad Job, RWQCB
Chien Kao, DTSC
Mike Wanta, TTEMI
Claire Trombadore, EPA
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John Chester, SFPUC

General Comments

Comment 1: The primary objective of the Validation Study is to “more clearly define the extent of sediments that pose an unacceptable risk to the environment...” This objective portends performance of an ecological risk assessment; however, risk is not defined in the work plan. Instead, a triad approach (i.e., a WOE) is used to determine if HPS sediment poses unacceptable risk. The study design fails to identify ecosystems potentially at risk, corresponding assessment endpoints, potential exposure pathways and corresponding risk questions. Without these critical elements, the study fails to define “unacceptable risk”, and therefore, cannot achieve its primary objective.

Recommendation: Develop a conceptual site model complete with assessment endpoints, exposure pathways and working hypotheses that the site investigation will address.

Comment 2: The work plan calls for collection of data at in-bay reference stations, however, these data are not used in the decision rules defined in Tables 3-1 through 3-5. In fact, reference data are excluded if they exceed decision rule criteria proposed in the work plan. This practice constitutes manipulation of results in order to achieve a desired outcome (e.g., reference sites are never impacted – naturally or otherwise). This manipulation potentially exaggerates differences between HPS and the rest of the bay.

Recommendation: Concurrent reference site data should be used to address differences at HPS.

Comment 3: The work plan decision rules primarily rely on previously established “criteria” developed using data collected at different times and primarily from different sites (only the amphipod survival criterion was generated using SF bay data). There is a disconnect between Step 2 (Identify the decision) and Step 5 (Develop a decision rule) in the work plan. In Step 2, decisions are framed as questions, asking if the site is at higher risk (e.g., more contaminated, more toxic) than ambient conditions. This approach implies testing of a null hypothesis to establish differences between reference and study areas. These questions, as presented, are not answered with the corresponding decision rules. For example, to answer the question, “Are COPEC concentrations in surface sediment at HPS elevated above ambient concentrations?” (Table 3-2 in work plan), a series of ERM-Q values are proposed. Therefore, the question is never answered, as ERM-Q’s can not be used as a proxy for ambient concentrations.

Recommendation: Expand in-bay reference sites and use to test null hypotheses of no differences between reference and HPS conditions. Restate Step 5 decision rules so that they satisfy the study questions posed in Step 2.

Comment 4: The use of ERMs in the decision rule does not apply to the majority of COPECs identified. Further, ERM values from Long & Morgan (1991) are cited for use as decision criteria, which are no longer supported by the author (Long et al. 1995) due to lack of certainty in ERM values, and/or insufficient and inappropriate data (e.g., 1992 ERM for chlordane). The work plan does not address how the broad list of COPECs without corresponding ERM values

will be addressed (e.g., butyltins, TPH, various metals). Further, an incorrect list of compounds is cited in the work plan for the calculation of at least one ERM: high molecular weight PAHs. The work plan calls for summation of 8 PAH compounds to calculate the corresponding ERM-Q for the site. The actual ERM is based on only 6 PAH compounds. Therefore, the resulting ERM-Q for HPS will most likely be biased high, thereby overestimating the value applied to the decision rule.

Recommendation: Eliminate use of ERMs in the decision rule. Replace with criteria based on significant differences in COPEC concentrations between HPS and reference sites.

Specific Comments

Fig. 1-1, pg. 3. Eastern Wetland Area is inappropriately labeled as VI – should be VIII.

Section 1.2.3, pg. 3, para. 2. At best screening results may approach the representative range of contaminant concentrations. It is unlikely that they will span the entire range of concentrations as stated.

Section 2.2, pg. 5, para. 2. It is doubtful that the governing regulatory bodies will consider in situ capping as a remediation alternative.

Section 3.1, pg. 8, para. 3. "...the expected variance for some of the proposed tests is not known." This is why it is so important to follow established methods such as EPA's Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (EPA 540-R-97-006; June 1997). The HPS work plan should follow Step 4 in the EPA document to estimate variance for proposed tests. Specifically, Step 4 addresses statistical considerations appropriate to the study design, including sample size and statistical power necessary to satisfy study objectives (i.e., answer risk questions).

Section 3.1.1.1, pg. 10, para. 2. "Aroclors also will be quantified to allow comparison with existing PCB data." What purpose does the comparison serve? Aroclor data are largely considered inappropriate by the scientific community to address ecological risk.

Section 3.1.1.1, pg. 10, para. 3. It makes little sense to use the ambient ERM-Q from 1993-1997 data when current reference data are proposed for collection and therefore available for this purpose. It is inappropriate to use 1993-1997 data as 1) they may no longer be representative of ambient conditions; 2) they may have been analyzed by different laboratories using slightly different methods; and 3) the work plan calls for collection of new reference site data that are more appropriate for comparison to site data.

Table 3-1, pg. 11, Step 2. Question 1 should be tested as a null hypothesis (i.e., inference test between site and reference data with requisite alpha level and power).

Table 3-1, pg. 11, Step 4. Need to describe how specified areas will be defined through use of screening data.

Table 3-1, pg. 12, Step 7. ERM values do not exist for many of the analytes listed, yet no alternative decision rule is provided for these data. ERM values from pesticides other than DDT were dropped in Long et al. (1995) due to insufficient data and/or incorrect type of data (i.e., based on freshwater results) used to generate Long & Morgan values. Use of these ERMs in the decision rule is inappropriate. Eight HMW PAH compounds are proposed for use, yet the ERM is based on six compounds; therefore, the resulting ERM-Q value generated for HPS data will be biased high.

Section 3.1.1.2, pg. 12, para. 3. The work plan calls for conductance of toxicity tests on reference sediment but does not incorporate use of results into decision rule.

Table 3-3, pg. 13, Step 5. What does $P=10$ refer to? Do the authors mean power of 0.9 with $\beta=0.1$?

Table 3-3, pg. 13, Step 6. Possible causes of decision errors are listed; however, no process to evaluate these errors are addressed.

Section 3.1.1.2, pg. 14, para. 2. Exclusion of reference site results that fall below the reference envelop tolerance limit is poor science and makes little sense. If negatively impacted, the reference site may represent confounding factors that have not been addressed in the study design or other bay-wide phenomena independent of chemical contamination at HPS. For example, amphipod toxicity was below this tolerance limit (i.e., 69.5% of control) for 3 of the 5 RMP reference stations when tested in Spring 2000 by SF PUC (control survival was > 90%). The reference results were found to be due to a "stressed" amphipod population that was dominated by gravid females. When the test was repeated several weeks later using a different population, reference results were within expected limits. It is imperative to make full use of any reference results, especially for concurrent testing, when attempting to explain conditions at HPS.

Table 3-5, pg. 16, Step 2. Upper trophic level receptors (i.e., assessment endpoints) at risk need to be defined.

Table 3-5, pg 16, Step 5. Method to develop reference threshold values needs to be defined.

Section 3.1.1.3, pg. 17, para. 2-3. It is not clear what reference site data is used to generate the reference threshold value for each COPEC. It appears that either 1) each of 5 laboratory replicates for each of the 5 reference sites (i.e., $n=25$), or 2) each of 5 laboratory replicates for one of 5 reference sites (i.e., $n=5$) for selected comparisons will be used. Either case uses laboratory replicates, which are not appropriate to establish reference conditions because they are not independent (i.e., they come from a single composite sample – pseudoreplication). In order to establish reference site variability for purposes of comparison, true field replicates must be used.

30 JUN 2012

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