9/11/95

RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY'S COMMENTS ON THE DRAFT FINAL PHASE II SITE-WIDE ECOLOGICAL ASSESSMENT WORK PLAN MOFFETT FEDERAL AIRFIELD

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MOFFETT FIELD
SSIC NO. 5090.3

Comments by Michael D. Gill, Remedial Project Manager, dated June 16, 1995

Comment No. 1:

Response to EPA comment #6. This comment concerned the choice of reference locations and stated that the criteria for judging the adequacy of these locations should include a comparison of the contamination levels to ER-L levels. If the Navy does not want to use ER-L levels, then responses to bioassays at these locations may be used. This appears to be the direction that the Navy intends to pursue. Please let us know if this is true. In the last sentence of this response, is the data being referred to bioassay data?

The statement: "Physical factors at a reference area may cause toxicity (e.g., if the sediment was a coarse "clean" sand, toxicity could be observed because of a lack of food or physical abrasion of the test organism)." is not supported by any available data. Please provide citations.

Response:

As defined in EPA (1994a), reference samples are: "New data collected from the least impacted (or unimpacted) area of the Superfund site, or from a nearby site that is ecologically similar to the Superfund site and is not affected by the Superfund site contaminants." The Navy has been unable to locate guidance that indicates that effects (i.e., ER-Ls and bioassays) should be considered in selecting a reference site. In the comment, the EPA appears to be recommending that a no effect level should be adopted for the reference site.

The data being referred to in the last sentence of this response is chemical and biological data. Events have somewhat overtaken this comment in that some of the chemical and biological data is available and have been discussed. The Navy proposes to delay resolution to this comment pending further discussions. The SWEA text will be modified in Section 3.4 as follows:

"The validity of the reference site and how the data are used in the Phase II SWEA will be determined at future meetings between the regulatory agencies and the Navy. The decisions and rationale will be documented in subsequent technical memoranda and in the Phase II SWEA report."

With regards to the EPA second paragraph, physiochemical characteristics can cause effects in bioassays (which is one of the reasons for reference samples). "There are a number of non-contaminant factors that may influence amphipod survival in these tests. The most important and variable factors include sediment

2334

particle size, pore water salinity, and pore water ammonia (EPA 1994b)."

Comment No. 2:

Response to EPA comment #7. We still have concern about Section 3.4 and Figure 3-16. The response states that "It was impractical to address all of the possible contingencies in the Work Plan". Our comment provides you with these contingencies. Does Navy disagree with our outline of comparisons or do you just not want to address them in the work plan? The response also states "As discussed in Comment No. 3 (sic), the Navy does not agree with the ER-L criteria for the reference site." The issue in question here is not the ER-L, but test performance. A 90% survival rate is required to ascertain that the reference locations are adequate. To reiterate our comment, the figure must be redrawn to reflect comparisons of reference site bioassay results that must have 90% survival as the first criteria. If the survival is less than 90%, then the tests must be rerun and/or another reference location must be selected. If the reference site survival is greater than 90% and the test site control survival is greater than 80%, the comparisons can continue. If the test site controls are less than 80%, then the test must be rerun. This is not represented in Figure 3-16 and needs to be corrected.

Response:

The contingencies were intended to refer to the physicochemical characteristics of the sediment, primarily ammonia, salinity, grain size, and TOC and not test performance. The Navy does not agree with the comparisons regarding effects as outlined in the comment. As discussed in the response to comment 1, the Navy does not agree with a no effects criteria for the reference site (which is essentially what a 90% survival rate is).

The response to comment for the Draft Phase II SWEA Work Plan incorrectly said see comment 3 and should have said comment 6. EPA's comment addresses two discrete issues: the acceptability of the reference area and the quality control of the bioassay. Please see response to comment 1 for the reference area. The Navy concurs with the bioassay protocol that requires no single control replicate to have less than 80 percent survival.

With regards to Figure 3-16, the figure has been redrawn and will be included in the Final Phase II SWEA Work Plan. This figure was initially presented at the July 12, 1995 meeting between the regulatory agencies and the Navy. With this approach, the reference area (if available) will be considered as part of the weight of evidence. This approach is outlined in EPA (1994a) where a series of samples are taken from highest to lowest chemical concentrations, and the lowest (in either impact or concentration) becomes the "reference" target for the site. Please note that Section 3.4.2 that discussed the RTR approach has been deleted because this approach is not appropriate

based on the available Phase II data. The Navy proposes to address the comment in the work plan by replacing the second paragraph in Section 3.4:

"Figure 3-16 illustrates the decision process that is proposed for evaluating the results of the sediment bioassays. This approach is subject to revision pending the outcome of working meetings between the regulatory agencies and the Navy. The Phase II SWEA report will document the changes and the rationale.

The first step is to compare the measured concentrations of COPECs to the effects observed in the bioassays. The comparisons will include measures of bioavailability, including AVS/SEM and TOC. If no effects were observed, the concentrations are compared to literature values and the evaluation proceeds to the risk characterization. The further comparison to the literature is warranted because of uncertainties associated with the bioassays. If effects are observed, the results are analyzed to identify the COPECs most likely responsible for the effect. When available, the results of the test site are compared with the results of the reference site. If the effects are not attributable to the concentrations of COPECs, the concentrations are compared to literature values and the evaluation proceeds to the risk characterization. If the effects are attributable to the COPECs, a dose-response relationship is derived to determine a NOAEL. The NOAEL is compared to literature values and the assessment proceeds to the risk characterization."

Comment No. 3:

The response to our comment #8 is satisfactory, although you end the response with a question, "...what is considered significant?". EPA assumes that your questions is directed towards what is biologically significant. Examples and citations of your answer to this question should be provided in the workplan. Our suggestion is to use site specific bioassay data in the following way. From reference sample results, the concentration representing NOAEC should be determined. Next, from the test site bioassay results, an actual concentration is measured. The ratio of the two concentrations is then used to determine if a potential problem exists. If the ratio (bioassay test result: reference NOAEC) is less than 1, no problem likely exists. If the ratio is greater than 1, a potential problem could exist.

Response:

As EPA surmised, the syntax should have stated "biologically" significant. The assessment and measurement endpoints are currently being refined and will be addressed in a forthcoming technical memorandum. Regarding the comparisons of a NOAEC, one of the reasons that the Navy invested in bioassays was to have a measure of the bioavailability of the COPECs. Consistent with Comments 1 and 2, the EPA's position appears to be that the reference should be a no effects level. The Navy is unclear of the value of a ratio because the

bioassay itself is a measure of the potential for effects. The Navy anticipates further discussion in the technical meeting and is willing to consider the proposed approach. No changes to the work plan.

Comment No. 4:

Response to Comment #10. Toxic identification evaluation (TIE) procedures are not still in development for sediment, as stated in your response. Procedures are available now. While your statement "In addition, assuming some remediation action is necessary, the alternatives would not likely be chemical specific..." may be true, this does not mean that a toxic identification evaluation will not add to the Navy's understanding of the site. Is the Navy stating that some remedial action is definitely going to occur to address ecological risks at Moffett Field? Has the Navy concluded that adverse effects have occurred? If so, then determining the specific cause of risk may or may not be necessary.

Response:

A TIE might provide additional understanding. However, the Navy is concerned with the high cost of the procedures and potentially ambiguous results (i.e. will the additional information benefit the decision-making process?). The Navy is aware that TIE procedures exist and may consider performing a TIE pending the conclusions of the SWEA (also see RTC No. 3 from the RWQCB).

The Navy did not state or intend to imply that remedial action will be necessary. Remediation is a risk management decision based on many considerations, of which the conclusions and recommendations of the SWEA are one. No changes to the work plan.

Comment No. 5:

Response to Comment #11. EPA's position regarding content of any toxicity profiles was made clear in this document. To repeat, toxicity profiles must provide information on: 1) the mechanism of toxicity; 2) the known toxic effects: 3) known relationships for uptake characteristics; 4) literature review for ecological effects, not just toxicological effects; and 5) the relationship of the particular chemical to the particular receptor/endpoints and site conditions. No additional meetings on this issue are necessary.

Response:

The Navy concurs with the comment. The reason that the Navy is interested in further discussion is the apparent lack of understanding between the agencies and the Navy on what is adequate for a toxicity profile. The Navy believes that the important issue is how the toxicity reference values (TRVs) are derived. The Navy will derive the TRVs and toxicity profiles utilizing the above criteria.

Comment No. 6:

Response to Comment #12. To add to the EPA (1992) reference citation, the Navy should also consider the following reference: Norton, S.B. et al., 1992. A Framework On Ecological Assessment at the EPA. Environmental Toxicology and Chemistry, Volume

11(12) pp. 1663-1672. We would like to stress a statement from pp. 1669-1670: "In addition, and perhaps most important, the assessor provides an interpretation of the ecological significance of the identified risks." The remainder of this paragraph defines what should be included in the risk characterization.

Response: Thank you for the additional reference. The Navy has always intended to interpret the ecological significance of any identified risks. The framework for quantifying the risks will be refined in the upcoming technical memorandum regarding refinement of the measurement and assessment endpoints.

RESPONSES TO DEPARTMENT OF TOXIC SUBSTANCES CONTROL'S COMMENTS DATED JULY 21, 1995 ON THE DRAFT FINAL PHASE II SITE-WIDE ECOLOGICAL ASSESSMENT WORK PLAN MOFFETT FEDERAL AIRFIELD

Comments by Laura M. Valoppi, M.S., Associate Toxicologist, Office of Scientific Affairs

The Human and Ecological Risk Section (HERS) in the Office of Scientific Affairs (OSA) was requested by Region 2, Office of Military Facilities, to review the Response to Comments (dated May 19, 1995) and the Draft Phase II Site-Wide Ecological Assessment (SWEA) Work Plan, dated May 19, 1995, prepared by PRC Environmental Management, Inc., and Montgomery Watson, for Moffett Federal Airfield (Moffett Field).

GENERAL COMMENTS

Comment No. 1:

HERS has previously reviewed and commented on the Draft Workplan in a memorandum dated March 28, 1995. At that time HERS only commented on the time-critical aspects of the workplan related to the sediment sampling and bioassays. The Response to Comments has adequately addressed HERS comments on those aspects of the draft workplan.

Other aspects of the draft or draft final workplan had not been commented on by HERS because we are currently participating in working discussions of these issues. The remaining issues include: evaluation of VOCs in owl burrows, refinement of measurement endpoints, indicator PAHs, exposure pathways and routes for vertebrate species, establishment of toxicity reference values for vertebrate species, modeling of bioconcentration and bioaccumulation to higher trophic levels, evaluation of multiple contaminants and multiple exposure pathways, and evaluation/ interpretation of bioassay results. It is HERS understanding that resolution of these topics reached at meetings will be written up into technical memorandum which will be included as an appendix to the final Phase II workplan.

Response:

The following text has been added to the Final Work Plan to indicate that noted items will be addressed in a series of meetings with the regulatory agencies and documented in the Phase II SWEA document:

"Several issues remain outstanding and are in the process of resolution between the Navy and the regulatory agencies. The items which will be addressed in a series of meetings are VOCs in owl burrows, refinement of measurement endpoints, indicator PAH, approach to development of species-specific NOELs for vertebrate species, approach to modeling of bioaccumulation to higher trophic levels, evaluation and interpretation of bioassay results, and evaluation of

multiple contaminants and multiple exposure pathways. These issues and their resolution will be documented in technical memoranda as well as in the Phase II SWEA report."

The technical memorandum will be included as appendices to the Phase II SWEA report rather than the Phase II SWEA Work Plan. Most of the memoranda will not be completed by the publication date of the Final Phase II SWEA Work Plan.

SPECIFIC COMMENTS

Comment No. 1:

It is HERS understanding that the preliminary evaluation of the sediment bioassay data has not yet revealed a correlation between chemical concentrations and toxicity. The chemistry data from the Phase II sampling effort has not yet been received by HERS, but we are recommending that evaluation of a correlation between chemistry and toxicity not be restricted to the list of COEPCs in Table 2-1. HERS request that the evaluation of the toxicity data be expanded to include evaluation of the "eliminated" chemicals of potential ecological concern (COEPCs). We are requesting this because, a) some chemicals have been eliminated as COEPCs based upon "low toxicity" without adequate documentation; and (b lower detection limits in the Phase II sampling. For example, aldrin, heptachlor, BHC, endosulfan II, and endosulfan sulfate have been eliminated as COEPCs in wetland sediments based on "low frequency of detection", and lack of ER-L values. As another example, azinphos methyl has been eliminated as a COEPC based on "low toxicity". Please refer to HERS memoranda dated August 17, 1994 and January 11, 1995 regarding Phase I SWEA COEPCs.

Response:

For the interpretation of the bioassay results, all chemical analyses will be evaluated. However, the Phase II SWEA will evaluate chemicals of potential ecological concern (COPEC) that were selected based on the criteria agreed on in the Phase I SWEA. The selection of COPECs was performed by Montgomery Watson based on meetings and formal, written agreements with the agencies. These agreements are discussed in detail in the Final Phase I SWEA Report that is awaiting production pending Montgomery Watson's submittal of additional data on the frequency of distribution of vanadium and molybdenum in the 3- to 10-foot below ground surface depth range. The following is a summary of the agreements documented in the Final Phase I SWEA:

- Along with the COPECs identified in the Draft Phase I Response to Comments (RTC) (PRC and Montgomery Watson 1994), endrin, endrin aldehyde, copper, zinc, nickel, silver, antimony, motor oil, diesel, "unknown" total petroleum hydrocarbons (TPHs), and one or more indicator polycyclic

aromatic hydrocarbon (PAH) compound(s) were retained as COPECs.

- All PAH compounds were retained as tentative COPECs in the Phase I SWEA pending further evaluation in the Phase II SWEA Work Plan. One or more PAH compound(s) will be selected as an indicator chemical.

- A search for more current toxicological literature was performed for chlordane, barium, beryllium, boron, cobalt, manganese, molybdenum, TPH (as motor oil, diesel, and weathered), thallium, and vanadium. Based on the summary of toxicity information, chlordane, manganese, thallium, and TPH were retained as COPECs.

- All organic chemicals that were detected at a frequency of five percent or less in the wetlands and nonlandfill uplands, and, except as noted below, were not indicative of a potential sink for chemical contamination or source of chemical contamination, were retained as tentative COPECs in the Phase I SWEA. As stated in the Final Phase I SWEA, these chemicals will be retained until the reporting limits obtained in the Phase I SWEA can be re-evaluated using the data obtained during the Phase II Additional Sites Investigation (ASI). The results of the re-evaluation of reporting limits and the final list of COPECs was presented in the Draft and Draft Final Phase II SWEA Work Plans.

- All volatile organic compounds (VOCs) were eliminated as COPECs because of their lack of persistence and short residence time. Moreover, the detected concentrations of VOCs are sufficiently low to preclude acute toxicity to site-specific ecological receptors. However, at the request of the regulatory agencies, the risk to the burrowing owl from VOCs in the burrows will be evaluated in the Phase II SWEA Report. This pathway is the only VOC pathway retained for further evaluation in the Phase II SWEA.

- For all other chemicals not specifically addressed above, the information in the Draft Phase I RTC for chemicals eliminated as COPECs during the first re-screening was acceptable; these chemicals remain excluded from the list of COPECs.

These agreements are documented in the following meeting minutes and letters:

- "Minutes of the April 1, 1994 Meeting Held at EPA, San Francisco, California. Site-Wide Ecological Assessment Issues at NAS Moffett Field." April 1994.

- "Minutes of the July 11, 1994 Meeting Held at PRC, San Francisco, California. Phase II Site-Wide Ecological Assessment Approach." July 1994.

- "Minutes; Agency Meeting at RWQCB." January 27, 1994.

- "Notes; Agency Site Walk at NAS Moffett Field, California." February 14, 1994.

- "Navy Response to Agency Comments on the Draft Site-Wide Ecological Assessment." July 18, 1994.

- "Letter from Mr. Michael Gill, EPA, Mr. Joseph Chou, DTSC, and Mr. Michael Bessette, RWQCB to Mr. Stephen Chao, Navy." October 13, 1994.

- "Letter from Stephen Chao, WESTDIV, to Michael Gill, EPA, regarding Schedule for Naval Air Station Moffett Field Draft Final Phase I Site-Wide Ecological Assessment Report." October 21, 1994.

Regarding DTSC's comment, "For example, aldrin, heptachlor, BHC, endosulfan II, and endosulfan sulfate have been eliminated as COPECs in wetland sediment based on 'low frequency of detection,' and lack of ER-L values," the Navy's position on COPECs is that chemicals may be included in, or eliminated from, the list of COPECs if the Phase II data changes our present understanding of the nature and extent of contamination using the criteria established in the Phase I SWEA for the selection of COPECs. This evaluation will be documented in the Phase II SWEA Report.

Regarding DTSC's comment, "As another example, azinphos methyl has been eliminated as a COPEC based on 'low toxicity,'" DTSC states in comments on the Draft Final Phase I SWEA, "The Department has also reviewed the raw data for the identification of azinphos-methyl and concluded that azinphos-methyl was incorrectly identified as being present in the samples because of matrix interference" (DTSC 1995). The Navy and DTSC are in agreement that azinphos methyl was incorrectly identified; therefore, azinphos methyl is not considered a COPEC.

Comment No. 2:

Page 2-10 indicates flux ponds (near IRP Sites 4 and 6) and the Lindbergh Avenue stormdrain channel have received "relatively high chemical loads". Apparently the remediation of the Lindbergh Avenue channel has begun, but the closing of the flux ponds has been delayed due to occupation of burrowing owls near the flux ponds. Neither of these areas are being addressed in the Phase II SWEA. HERS recommends that OMF consult with the

California Department of Fish and Game concerning damages to natural resources in these areas.

Response: Comment noted.

Comment No. 3: **Page 2-12 indicates only the inhalation pathway will be evaluated for burrowing owl; however Figure 3-1 and page 3-2 indicates the ingestion of contaminated invertebrates by burrowing owl will also be evaluated. It is HERS understanding from workgroup meetings that the Navy has agreed to evaluate food-chain pathways for the burrowing owl.**

Response: The comment is correct and the text was revised to indicate that ingestion of invertebrates will be evaluated for the burrowing owl.

Comment No. 4: **Table 2-1 should include PAHs as COEPCs because this has been agreed to previously.**

Response: Comment is accurate and Table 2-1 has been revised to note that individual PAHs with a frequency of detection of greater than 5 percent will be retained as COPECs for the Phase II. The spatial distribution of PAHs will also be evaluated to ensure that hot spots are not overlooked.

Commend No. 5: **Page 3-2 indicates the evaluation of the red fox as a representative species is eliminated since the fox has a "similar prey base as the kestrel". HERS requests that the differences between pathway exposure factors (ingestion rate, body weight, etc.) between the kestrel and fox be evaluated in the Phase II SWEA, and that differences in toxicity between mammalian and avian species by discussed in a section on uncertainty. In this way the implicit assumption that impacts on the kestrel can be used to represent the fox are documented.**

Response: The following text has been added to indicate that the kestrel is a more conservative receptor because of a higher food ingestion rate for the kestrel:

"The kestrel has a higher metabolic rate than the red fox. The kestrel has an average metabolic rate of approximately 339 kcal/kg-day and the red fox has an average metabolic rate of 168 kcal/kg-day (EPA 1993). The kestrel's higher energy requirement results in a food ingestion rate per kilogram of body weight that exceeds the fox's food ingestion rate by a factor greater than two. With the same prey base, the kestrel receives a higher contaminant dose than the fox."

Comment No. 6: **The direct toxicity to terrestrial plants and invertebrates is not addressed. Page 15 of the Response to Comments indicates the Navy is proposing to conduct earthworm tissue residue analysis**

and modeling of soil-to-plant tissue residues. While tissue residues are necessary to estimate prey item residues for higher trophic level organisms, they cannot be used to evaluate direct toxicity on terrestrial plants or invertebrates. In earlier discussions on the Phase II workplan, use of terrestrial plant and invertebrate toxicity tests were proposed, but this exposure pathway was eliminated because it was believed that there were no COEPCs in the non-landfill upland areas. However, more recent data evaluations indicate these chemical are present in the non-landfill upland, and therefore a complete exposure pathway exists.

Response: No action. The golf course area in question has no known waste disposal activities and the Navy believes that the pesticides detected are part of past applications made to control pests at the golf course. The plants that are present are those that are desired for the function of the golf course. The habitat is marginal because of the activities at the golf course and evaluation of direct effects to plants and invertebrates is not consistent with the assessment endpoints of the Phase II SWEA. Therefore, the Phase II SWEA is only concerned with the potential transport of contaminants to higher trophic levels from the plants and invertebrates at the golf course.

SUMMARY

Comment No. 1: **The response to comments adequately addresses HERS previous comments regarding the sampling and bioassay portions of the draft Phase II SWEA workplan. The remaining issues, as noted above, should be resolved in workgroup meetings, and documented in technical memorandum which will be appended to the final workplan.**

Response: Comment noted.

RESPONSES TO CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S COMMENTS DATED JULY 17, 1995 ON THE DRAFT FINAL PHASE II SITE-WIDE ECOLOGICAL ASSESSMENT WORK PLAN MOFFETT FEDERAL AIRFIELD

Comments by Susan Gladstone and Michael Bessette

GENERAL COMMENTS

Comment No. 1:

In a meeting with US EPA, DTSC, RWQCB, and the Navy contractors on July 12, 1995, the RWQCB agreed to review and approve, if appropriate, the Draft Final Phase II SWEA Workplan with the contingency that outstanding or as yet unresolved issues would be addressed by the Navy in either an addendum, a technical memo, or meeting minutes. The reason for this approach is that the ecological project team has not come to agreement on all portions of the Phase II SWEA Workplan, yet we do not want to delay the overall project schedule. Those remaining portions (Sections 3.4 - Interpretation of Sediment Bioassay Results and 3.5 - Risk Characterization) are currently under discussion in a series of meetings between the agencies, the Navy, and the Navy contractors. We agreed to this approach so that the field work portion of the project could proceed this spring without delay, and to allow sufficient time for meetings and discussions on how the data would be interpreted and utilized in the risk characterization. These meetings are proceeding satisfactorily.

The Navy contractors agreed to include a discussion of the outstanding issues in the Final Phase II SWEA Workplan, and to reference the document(s) in which they will be addressed.

In general, the RWQCB finds the field sampling and analysis portion of the Draft Final Phase II SWEA Workplan acceptable (with a few minor comments), and is reserving approval of Sections 3.4 and 3.5 until we have an opportunity to review the documentation of agreements reached in our series of technical meetings on those sections.

The minor comments below do not require specific changes to the Draft Final Phase II SWEA, but can be addressed in subsequent documents.

Response:

The Navy's understanding is consistent with the RWQCB comment. Text has been added to Sections 3.4 and 3.5 to indicate that the approaches for bioassay interpretations and risk characterization are being discussed and will be documented via technical memoranda.

SPECIFIC COMMENTS

Comment No. 1:

Response to RWQCB Comment 1: The Navy will need to provide additional information as to the modelling approach to be used to evaluate migration of indicator COPECs to Cargill Salt Ponds; this includes which COPECs and which model will be proposed. When will this study be carried out? Will it be part of the site-wide RI? How will this information be used in the context of the SWEA?

Response:

The Navy plans to model the transport of all COPECs identified in sediment samples taken from the Northern Channel. Modeling will not proceed until a list of COPECs is accepted by the regulatory agencies for the purposes of analysis in the Phase II Site-Wide Ecological Assessment. The objective in modeling transport of COPECs is to evaluate the possibility that these compounds are impacting sediment and surface water in the adjacent Cargill Salt Pond.

The Navy will assume a maximum driving force between the channel and pond, that being flood conditions in the channel and no water in the salt pond. The Navy will use a value from Freeze and Cherry, 1979 for hydraulic conductivity typical of bay muds from which the levee was likely constructed. Seepage velocity will be estimated with the following equation:

$$V_S = K \cdot i/\theta$$

Where K is hydraulic conductivity, i is hydraulic gradient, and θ is soil porosity.

Distribution coefficients for organic COPECs will be calculated based on the organic carbon fraction of sediment samples collected from the Northern Channel and organic carbon partitioning coefficients available in the literature (Montgomery and Welkom 1989). Distribution coefficients for metals will be selected from experimental data also available in the literature (Baes and Sharp 1983).

Retardation will be estimated based on the following equation (Freeze and Cherry 1979):

$$R = 1 + \partial_b \cdot K_d / \theta$$

Where ∂_b is bulk density, K_d is the distribution coefficient and θ is soil porosity. The travel time of COPECs is then estimated based on the following equation:

$$V_C = V_S / R$$

Comment No. 2:

Response to RWQCB Comments 2 and 8: The project team has been discussing the merits of carrying out the risk characterization with one or two indicator PAHs versus all of the PAHs in the COPEC list. The subsequent addendum or technical memo to the Phase II SWEA Workplan must clarify the final decision reached by the project team.

Response:

The Navy concurs with this comment. The final decisions reached regarding PAHs will be documented in technical memoranda and in the Phase II SWEA report.

Comment No. 3:

Response to RWQCB Comment 14: The interpretation of sediment bioassay results is one of the outstanding issues which is currently being discussed amongst the project team members. The results of these discussions and any agreements must be documented.

With regard to the possible need to perform a TIE, we believe the Navy should be willing to consider a TIE, depending upon the results of the analytical data and risk characterization. A TIE may be warranted if there is a desire to attribute adverse effects and subsequent remedial actions to a particular chemical or chemicals.

Response:

The Navy concurs that documentation of the approaches selected by the project team is extremely important to provide the rationale to other users of the SWEA.

The Navy is willing to consider a TIE, if, as noted in the comment, the outcome of the analytical results and risk characterization indicate that such an evaluation is warranted.

REFERENCES:

Baes, C.F., III and R.D. Sharp. 1983. A proposal for estimation of soil leaching and leaching constants for use in assessment models. J. Environmental Quality 12:17-28.

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EPA. 1993. Wildlife Exposure Factors Handbook. Volume 1. EPA 600/R-93/187a.

EPA. 1994a. ECO Update, Volume 2, Number 4, Selecting and Using Reference Information in Superfund Ecological Risk Assessments. EPA 540-F-94-050.

EPA. 1994b. Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods. EPA 600/R-94/025, p. 24.

Freeze, R.A. and J.A. Cherry. 1979. Groundwater. Prentice-Hall, Inc., Englewood Cliffs, N.J. pp. 381-457.

Montgomery, J.H. and L.M. Welkom. 1990. Groundwater Chemicals Desk Reference. Lewis Publishers, Inc., Chelsea, Michigan. 640 pp.

PRC and Montgomery Watson. 1994. "Navy Response to Agency Comments on the Draft Site-Wide Ecological Assessment." July 18.