STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY
PETE WILSON, Governor

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
REGION 2
[illegible] HEINZ AVE., SUITE 200
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(510) 540-2122

December 22, 1995

Commanding Officer
Engineering Field Activity West
Attn: Code 18, Mr. Ernesto Galang
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Galang:

COMMENTS TO PHASE II ECOLOGICAL RISK ASSESSMENT DRAFT FINAL WORK PLAN AND FIELD SAMPLING PLAN, NAVAL STATION TREASURE ISLAND (NOVEMBER 8, 1995)

The Department of Toxic Substances Control, San Francisco Bay Regional Water Quality Control Board, and Department of Fish and Game have reviewed the Phase II Ecological Risk Assessment Draft Final Work Plan and Field Sampling Plan for Naval Station Treasure Island, dated November 8, 1995. The State has concerns about polychaete bioassays, pore water preservation, evaluation of Clipper Cove, rationale and locations for additional offshore sampling, screening criteria, and terrestrial ecological assessment.

Specific comments are enclosed. If you have any questions regarding this letter, please contact me at (510) 540-3818.

Sincerely,

Thomas P. Lanphar for

Mary Rose Cassa, R.G.
Engineering Geologist
Office of Military Facilities

Enclosures

cc: Ms. Gina Kathuria
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Ms. Rachel Simons [H-9-2]
U. S. EPA, Region 9
75 Hawthorne Street
San Francisco, California 94105-3901

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STATE OF CALIFORNIA—CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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MEMORANDUM

TO: Mary Rose Cassa, Project Manager
Office of Military Facilities, Region 2
700 Heinz, Building F, Second Floor
Berkeley, CA 94704

FROM: James M. Polisini, Ph.D.
Office of Scientific Affairs (OSA)
Human and Ecological Risk Section (HERS)

DATE: December 15, 1995

SUBJECT: TREASURE ISLAND PHASE II ECOLOGICAL ASSESSMENT WORK PLAN
[PCA 14740 SITE 200231-45 24]

Background

We have reviewed the document titled *Phase II Ecological Risk Assessment Draft Final Work Plan and Field Sampling Plan Naval Station Treasure Island*, dated November 8, 1995 and prepared by PRC Environmental Management, Inc. of San Francisco, California. The document was delivered to our offices on November 16, 1995. This review is in response to your written work request dated December 4, 1995.

We have reviewed previous drafts of the Phase II Ecological Risk Assessment Work Plan in OSA memoranda dated February 8, 1995 and September 1, 1995 in addition to attending a meeting at PRC offices in San Francisco to discuss the Phase II ecological assessment risk work plan on August 15, 1995.

Naval Station Treasure Island occupies both Treasure Island and Yerba Buena Island in San Francisco Bay midway between San Francisco and Oakland. Treasure Island (TI) is manmade and approximately 450 acres in size. Yerba Buena Island (YBI) is a natural island in San Francisco Bay approximately 130 acres in size. The U.S. Army first occupied YBI in 1866. The Navy began operations on YBI in 1896. TI was constructed in 1936 and 1937 as a site for the Golden Gate International Exposition in 1939. TI was leased to the Navy in 1941 for use as a training and personnel processing facility. Naval Station Treasure Island (NAVSTA TI) is used today for processing personnel, and training such as fire fighting. YBI is mainly a residential facility.

General Comments

This draft work plan is in general agreement with the discussions held at PRC offices in San Francisco on August 15, 1994 and addresses most of the previous comments by OSA.

Telephone conversations, even when immortalized as PRC telephone discussion notes (Response to Comments, Reference Section, PRC 1995a through 1995d), cannot take the place of published experimental results, which are readily available for independent review, in determining the direction of the ecological studies at NAVSTA Treasure Island. The suite of proposed bioassays and pore water preservation proposal are based on telephone conversations in which OSA representatives were not included. These two components of the work plan should be augmented to support the Navy position on polychaete bioassays and pore water preservation.

Specific Comments

Two aquatic bioassays are proposed in the work plan (Section 6.2.2, page 27). The value of an additional aquatic bioassay measuring mortality and growth as endpoints in polychaete worms was discussed at the August 15, 1995 meeting at PRC. OSA agreed to review material submitted by PRC in support of the PRC and Navy contention that assessment of mortality and growth endpoints in the polychaete bioassay would not provide additional information for categorizing sites. Amphipod and polychaete bioassay results from Naval Air Weapons Station Point Mugu were transmitted by facsimile copy from the PRC Houston Offices of PRC by James Baker on August 16, 1995. The results are summarized below, and directly refute the response to comments (Appendix C, Response to DTSC comments, Comment 13, page 16) which states that 'However, there were never toxic responses with polychaete when there were no toxic responses with the amphipod'. Statistically significant results are indicated in **bold** with an asterisk. The bioassay results submitted by PRC-Houston are:

Sample Number	*Eohaustorius* Survival (%)	*Eohaustorius* Reburial (%)	*Ampelisca* Survival (%)	*Neanthes* Survival (%)	*Neanthes* Growth (mg dry weight)
278-S02-008	**59 ***	96		96	0.83
278-S02-012			82	92	**0.50 ***
278-S02-050	**55 ***	93		92	0.47
278-S04-011			83	80	1.92
278-S04-016			81	88	0.41
278-S05-005			84	96	0.42
278-S05-023			**42 ***	80	0.70

I appreciate the telephone survey conducted of some staff of the U.S. EPA Region 9, San Francisco Regional Water Quality Control Board and Corps of Engineers (Response to DTSC comment 13), but remain convinced, based on the PRC-Houston results, that polychaete worm bioassays should be performed on a small number of NAVSTA TI samples to verify the Navy contention that the growth endpoint of the polychaete worm bioassays is insensitive.

My notes of the August 15,1995 meeting at the PRC-San Francisco offices, indicate that pore water was to be extracted within 24 hours of sediment sample collection. The response to comments indicates that pore water may not be separated from sediment for up to 1 week (Response to DTSC comments, page 14). The agreement at the August 15, 1995 meeting to allow pore water storage by freezing prior to testing was based on PRC's presentation of telephone discussions with Gary Ankley at the U.S. EPA offices in Duluth, Minnesota. I can recall no mention at the August 15, 1995 meeting of delaying separation of the pore water for one week. Pore water should be separated within the agreed 24 hours. In addition, a small number of pore water bioassays should be performed on the pore water prior to freezing and after freezing to demonstrate that preservation of pore water by freezing does not alter the results of the pore water toxicity test. This method of assessing the Navy proposal for pore water preservation would then be analogous to the pre-storage and post-storage amphipod testing for whole sediments. In

fact, the pore water testing might be performed on pore water from the same sample location as the pre-storage and post-storage amphipod testing.

PRC had agreed to apply the sediment classification criteria to the data available from the NAS Alameda Phase I investigation as part of this evaluation and furnish the results of the NAS Alameda classification to regulatory agencies for evaluation. Is there a projected delivery date for the NAS Alameda evaluation?

Given the presentation that there is no source of freshwater for drinking on YBI and TI (Response to DTSC comment 16, page 18), we agree that water ingestion need not be included for avian receptors. We accept the Navy proposal that avian exposure via ingestion of surface water or inhalation will be evaluated if data becomes available indicated the pathways are significant. The additional avian endpoint of embryo toxicity associated with egg shell absorption of contaminants such as polycyclic aromatic hydrocarbons (PAHs) should also be evaluated.

We also accept evaluation of avian dermal exposure in a qualitative manner (Response to DTSC comment 16, page 18). However, dermal exposure and inhalation of particulates should be evaluated for the burrowing mammal representative species. Human exposure parameters can be applied as default dermal exposure parameters should small mammal-specific parameters not be available.

We support use of *Eohaustorius estuarius* as proposed for the amphipod bioassays (Section 6.2.2, page 29). The sediment bioassay appendix (Appendix B) outlines the protocol for the tube-dwelling amphipod, *Ampelisca abdita*.

Conclusions

The aquatic toxicity suite of tests should be augmented with polychaete worm bioassays at a few selected sites. The pore water preservation technique should also be validated as part of this study.

Once the comments outlined above are addressed and the draft San Francisco Bay sediment screening concentrations are developed and evaluated in the NAS Alameda 'test case', the studies outlined in this work plan should provide information sufficient to evaluate the potential ecological risk associated with contaminants at NAVSTA Treasure Island.

Reviewed by: Yugal K. Luthra, Ph.D., MRSC, MIBiol
Staff Toxicologist
Human and Ecological Risk Section

cc: Michael J. Wade, Ph.D., Senior Toxicologist, OMF Liaison, HERS
Deborah J. Oudiz, Ph.D., Senior Toxicologist, Northern California Liaison, HERS

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
San Francisco Bay Region

Prepared by: Susan Gladstone, Gina Kathuria — File No. 2169.6013(sfg)

Date: December 20, 1995

Subject: Draft Final Workplan and Field Sampling Plan for Phase II Ecological Risk Assessment, Naval Station Treasure Island, dated November 8, 1995

General Comments:

1. Regional Board staff agree with the proposed approach for screening sediment sites at TI. This report reflects changes to RWQCB comments made on the interim draft version during the working meeting of August 15, 1995 and written comments dated August 22, 1995. However, a number of modifications are required to provide clarification on the approach prior to beginning the field work.

2. With regard to evaluation of Clipper Cove, all requirements in Regional Board Order No. 93-130 must be satisfied. The skeet range will require some degree of biological characterization or evaluation of threat to aquatic receptors, even if sediment chemistry falls below the sediment screening values.

3. Staff at the RWQCB are strongly recommending deriving TPH-diesel and TPH-gasoline risk based cleanup goals for aquatic receptors. This approch was implemented at the San Francisco International Airport (SFO) via RWQCB Order 95-136. We would like to meet with the Navy to discuss this risk based approach and its feasibility at NSTI. The Navy should follow up later with a time and location for such a meeting.

4. When available, please provide to CAL-EPA a field schedule for activities that will be performed under this workplan.

Specific Comments:

1. **pages 13 and 14, Section 2.11.2, Identification of Offshore COPCs:** The Navy should modify the first sentence to distinguish between the earlier sediment screening values used to evaluate the Phase I data and the sediment screening

values currently proposed to be used in the Phase II. The values used to screen Treasure Island Phase I data are not those proposed by the Navy as baywide sediment screening values for all Navy sites.

Please also add a statement indicating that the 1989 Regional Apparent Effects Threshold values (AETs) used for the initial screening are no longer considered valid for the San Francisco Estuary. There were a small number of data points used to develop those values, therefore limiting their representativeness. The RWQCB is currently revising the AETs with a much larger data set.

2. **page 14, Section 2.11.3, Identification of Storm Water COPCs, paragraph 2 and Navy Response to RWQCB Comments #2):** The Navy must delete this paragraph. The statement that indicates that the RWQCB has a water quality objective for TPH-diesel in aquatic organisms is incorrect.

3. **page 17, Section 5.1, Rationale for Additional Offshore Sampling:** This paragraph mentions that sampling will focus on tracking contaminants from onshore sources to offshore. We believe that onshore sources should address not only storm water outfalls, but any horizontal conduits which may provide a pathway for contaminants in groundwater to move towards the Bay.

   The Navy should describe what sampling (i.e., sediment or surface water sampling in storm drains) has been performed to date, describe specific locations, and the results of that sampling effort which leads to the current proposal for additional offshore sampling.

4. **page 17, Section 5.1.1, General Locations for Additional Offshore Sampling:** The Navy should clarify whether the 1990 (Long and Morgan) or 1995 (Long and MacDonald, et al) effects range-low (ER-Ls) were used to develop the hazard indices (HIs).

5. **page 18, Section 5.1.1, General Locations for Additional Offshore Sampling, paragraphs 1 and 2 and Appendix A:** There is no description in Appendix A of how HIs and hazard quotients (HQs) were developed, as is stated in this section. This information is critical to complete review of the approach used to screen Phase I sediment data. The description should include issues such as whether all RWQCB stations were used, or only those in the vicinity of TI. The RWQCB Pilot Regional Monitoring Program collected data from 18 stations ranging from extreme South Bay to Sacramento/San Joaquin Rivers, and were located at both contaminant sources and away from known sources. It should also include discussion on the implications of using the Long and Morgan 1990 ER-Ls, since they included both marine and freshwater values, and the benefit of using San Francisco Estuary mean values.

6. **page 18, Section 5.1.1, General Locations for Additional Offshore Sampling, paragraph 2:** The Navy should include a discussion as to how HIs for pesticides and SVOCs were evaluated to "assure that the station did not require additional sampling." Does this mean simply that any station which exceeded a HI of 1 for a pesticide or SVOC was included in the proposed additional sampling?

7. **page 19, Section 5.1.1, General Locations for Additional Offshore Sampling, paragraph 2 and Section 11.3.1.3:** The Navy should describe what leachate test will be used on the sediment samples and provide rationale. The second sentence of this paragraph is unclear and should be modified.

8. **page 19, Section 5.1.1, General Locations for Additional Offshore Sampling, paragraph 4:** The Navy should clarify that each two-foot section of the eight-foot core will be analyzed separately. This is somewhat unclear as it relates to the Response-to-RWQCB Comments in Appendix C (Response 7.b) in that it states that two-foot sections will be composited and analyzed. Please modify the fourth sentence to read "The 8-foot sediment cores will be split into 2-foot sections ~~for a total of four samples per core~~, and tested separately to determine vertical contamination gradients."

9. **page 20, Section 5.1.2, Clipper Cove Skeet Range Sampling Locations, second paragraph:** Given the phased approach to sediment sampling at one, two, and three-foot depths, will this affect sediment holding times (8 weeks) for bioassay sampling? The Navy should clarify how phased chemical analyses will work in the context of field mobilization and coordination with laboratories on chemical biological analyses.

10. **page 20, Section 5.1.2, Clipper Cove Skeet Range Sampling Locations, second paragraph:** This section should discuss the two cores (S3 and S6) indicated on Figure 5-3. The figure indicates they will be six-foot cores, however the text on page 19 indicates that 8-foot cores will be taken.

11. **page 20, Section 5.1.2, Clipper Cove Skeet Range Sampling Locations, second paragraph, sentence 6:** This sentence indicates that a feasibility study may be performed at the *station* which exceeds the action level at the surface and three-foot depths. How will horizontal extent of contamination be defined if feasibility studies are to be performed station-by-station?

12. **pages 30 and 31, Section 7.1, Characterization of Ecological Risk to Benthic Aquatic Receptors:** This section needs to be expanded to address bioaccumulation at sites that fall below the screening values for toxicity. The first paragraph on page 31 should expand on the idea of performing a cost-benefit analysis of further investigation verses going directly to feasibility study

for any give site at NSTI.

13. **page 31, Section 7.1.1.1, Sediment Screening Criteria:** For clarity, the Navy should modify the paragraph, as follows:

> "The whole sediment total chemistry values will be compared to San Francisco Bay specific sediment screening values ~~developed from based on~~ 2 years of sampling by the RWQCB ~~Bay Protection Program. For each chemical~~, the Navy and ~~EPA~~ agencies will jointly ~~evaluate the chemistry and toxicity data to determine San Francisco Bay specific low and high toxicity screening values (LSV and HSV) which may reflect chronic and acute toxicity determine these values which will be submitted for agency review. San Francisco Bay specific screening values which indicated low toxicity (LSV) and San Francisco Bay specific screening values which indicate high toxicity (HSV) will be determined.~~ Table 7-1 provides a list of sediment criteria values for selected contaminants that have been used ~~as guidelines at a number of sites~~ in San Francisco Bay: the NOAA ER-L and ER-M values (Long and Morgan, 1990), the Er-Ls and ER-Ms of Long and others (1995), and the San Francisco Bay Basin means (RWQCB 1992 as cited in Wolfenden and Carlin 1992) for the same contaminants."

14. **page 32, Section 7.1.1.2, Pore Water Chemistry Screening Criteria:** For the chemicals of concern which do not have Water Quality Objectives (WQOs) or Ambient Water Quality Criteria (AWQC) (i.e. TPH), the Navy should be developing site specific values. Again, RWQCB staff would like to meet with the Navy to discuss our approach at other sites in the San Francisco region.

15. **page 33, Section 7.1.2.1, No Further Action:** This section should describe how sites will be handled where bulk sediment concentrations fall below the LSVs, but the porewater exceeds WQOs or AWQC.

From previous discussions, it has been our impression that a site cannot be categorized for No Further Action unless it falls below LSVs for all chemicals. The Navy should clarify this point. Bioaccumulation must also be addressed before a site can be placed in the No Further Action category.

16. **pages 33 and -34, Section 7.1.2.3, Toxicity Evaluation:** The Navy should specifiy when they will determine how many times the concentrations of specific chemicals must exceed the screening values in order to undergo bioassay testing.

17. **page 36, Section 7.1.4, Clipper Cove Skeet Range Risk Characterization:** Regional Board Order No. 93-130, Provision 2c and 2d requires some level of

biological characterization at the skeet range, even if the chemical concentrations fall below the screening values.

18. **page 63, Section 11.3.1.3, Surface Sediment Analysis:** The Navy should list those sampling stations in which VOC sources are suspected and will be analyzed for VOCs.

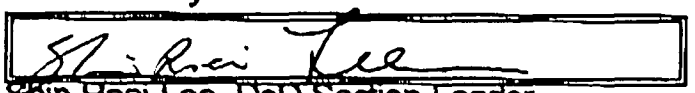
19. **page 64, Section 11.3.2, Core Samples, second paragraph:** According to Regional Board Order No. 93-130, environmental concerns at the skeet range are disposal of lead and clay targets. The Order indicates that clay targets contain asphaltenes, which can contain PAHs. Therefore, sediment samples at Clipper Cove must be analyzed for PAHs, as well as lead. Chemical analysis of PAHs in only four samples has not been justified, and will not meet in the Order for evaluating the impact from the site to aquatic receptors.

    As discussed in section 5.1.2, this paragraph should indicate that 25% of the cores will be analyzed to the three-foot depth.

20. **page 69, References:** Please add reference for *California Regional Water Quality Control Board, San Francisco Bay Region Order No. 93-130, Site Cleanup Requirements for Naval Station Treasure Island, Treasure Island Skeet Range.*

21. **page 9, Appendix C, Response to Agency Comments on Interim Draft Final Workplan, #17:** The response to RWQCB comment regarding how cleanup numbers will be developed seems vague. Contrary to the response, we believe that the document should indicate how or when these values will be developed. The response that cleanup goals should be a joint effort between the Navy, the agencies and "other parties in the Bay area" is unclear. Other than receiving input from community members or the RAB, who would these "other parties" consist of?

Concurred by:



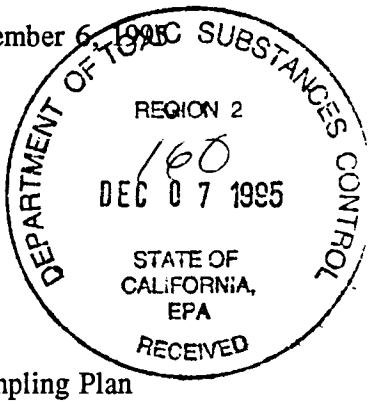
Shin-Roei Lee, DoD Section Leader

State of California

Memorandum

To : Ms. Mary Rose Cassa
Office of Military Facilities
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, California 94710

Date : December 6, 1995



From : **Department of Fish and Game**

Subject : Review of Phase II Ecological Risk Assessment Draft Final Work Plan and Field Sampling Plan Naval Station Treasure Island (NAVSTA TI) (5920/60130/NTX506 00: 40)

The California Department of Fish and Game (DFG) has reviewed the subject document. We offer the following comments and questions for clarification at this time:

Section 2.4.2 Yerba Buena Island (YBI) Geology

Is site 11, the YBI landfill, on top of, or a part of, the artificial fill on the eastern shoreline of YBI? If so, consideration of historic marsh restoration should be a part of the plan.

Also, please clarify if any part of the Clipper Cove area is historic wetland. If this area was previously a wetland, restoration should be considered.

Section 4.0 Threatened and Endangered Species Survey

The proposed timing of the various biological surveys is not clear. Plant surveys for threatened or endangered plants should be coordinated with DFG to ensure proper timing and methodology.

It is necessary to reiterate a comment Department of Toxic Substances Control (DTSC) made on the draft document. There still is no mention of surveying for bats at the facility. Two issues concerning bats are of importance to DFG. First, bats are extremely sensitive to human contact. Persons entering maternity colonies can cause bats to abandon young or drop them to the floor from where they usually are not retrieved and subsequently die. Disturbance during hibernation may cause bats to arouse prematurely, elevating their body temperatures and utilizing stored energy reserves which usually cannot be spared. Second, during remediation activities, it must be taken into account that the preservation and conservation of bat roosts is probably the most important issue in bat conservation because many roosts are traditional and used by successive generations of bats over many years.

Section 6.0 Assessment and Measurements Endpoints

The language added on page 21 regarding terrestrial ecological assessment of YBI is not specific enough. The additional detail required at YBI should be outlined. The paragraph implies that a quantitative risk analysis will not be required.

With the exception of these comments, the DFG has no other concerns with the work plan as presented. We are interested in continued oversight of the ecological risk assessment and field activities, especially those actions involving State fish, wildlife, biota, and their habitats. The DFG should always be contacted prior to initiating surveys for plants or bats at NAVSTA TI. This will ensure that the surveys are being done at the proper time of year. If it is anticipated that bats are present, substantive compliance with permit conditions, including reporting requirements and notification is required for capturing the animals. If you have any questions or wish to discuss our comments, please contact Susan Ellis, Senior Biologist, 1701 Nimbus Road, Suite C, Rancho Cordova, California, 95670 or by telephone at (916) 358-2852 or me at (916) 653-7560.

Michael Martin for

John L. Turner, Chief
Environmental Services Division

SE:gm

cc: California Department of Fish and Game

Ann Malcolm
Legal Affairs

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