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Ser 1813EG/L3045  
28 Oct 1992

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To: Distribution

Subj: REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) FOR  
NAVAL STATION TREASURE ISLAND, SAN FRANCISCO

Encl: (1) Navy Responses to DTSC Comments on the Draft Preliminary Risk Assessment  
(PRA) Report for NAVSTA TI, Site 12, dtd 24 Jan 1992

1. Enclosure (1) is the Navy's detailed response to DTSC comments and provided for your information.
2. Thank you for your guidance and involvement in this project. For further information, please contact Mr. Ernesto M. Galang, Code 1813EG, at (415) 244-2560.

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**RESPONSES TO DTSC COMMENTS ON THE  
DRAFT PRELIMINARY RISK ASSESSMENT  
TREASURE ISLAND, SITE 12**

**1. DTSC COMMENT ON PAGE 6**

The areas of known and suspected contamination must be identified on the map (Figure 2-1). The location of bunkers should also be identified. Any other information which was used to select the initial screening sites must be summarized and included in the document. Justification is needed for the clustering of the sampling locations.

**NAVY RESPONSE**

The initial screening sites were selected by examining historical aerial photographs and by conducting ground-penetrating radar (GPR) to identify areas where burial of waste may have occurred and areas of disturbed soil. Sampling locations were clustered in areas where GPR indicated disturbed subsurface material or potential buried objects.

Additional information used in selecting initial screening sites and justification for the clustering of the soil sampling locations has been added and is presented on page 6 of the Final PRA. Figure 2-1 has been revised to indicate the locations of GPR disturbances, former locations of bunkers at Site 12, and sample locations for Stage 1 soil sampling.

**2. DTSC COMMENTS ON PAGES 8 AND 10**

A summary of the tentatively identified compounds (TIC) is needed. The concentrations and chemical classifications represented must be included. The TICs cannot be eliminated from the PRA without additional information.

**NAVY RESPONSE**

A summary of the TICs was added to Appendix A on page A-7 and Table A-2, indicating concentration and chemical classification.

Freon-113 in one sample was the only volatile TIC reported. The semi-volatile TIC consisted of hydrocarbons with carbon-chain lengths similar to gasoline and diesel fuel constituents, and are evaluated as such.

**3. DTSC COMMENTS ON PAGE 8 AND TABLE A-2**

The depth of the samples should be indicated. Also, if the contaminants appear to be clustered, then the distribution on the site should be indicated.

**NAVY RESPONSE**

Table A-2 has been revised to show the depth of the samples collected during the Stage 1 sampling effort. Figure 2-2 has also been revised to show the distribution of Stage 1 contaminants at Site 12.

**4. DTSC COMMENT ON PAGE 9**

Was toluene found in the same location as gasoline? It should not be dismissed as a chemical of concern if it can be associated with areas of gasoline contamination.

**NAVY RESPONSE**

Figure 2-2 has been revised to indicate that toluene was detected in only one Stage 1 sample; neither gasoline nor diesel were detected in the same sample as toluene.

#### **5. DTSC COMMENT ON PAGE 11**

The selection of chemicals for the Stage 2 assessment was dependent on the conclusions of the Stage 1 assessment. It is not possible to determine if the selection was adequate until additional information is supplied on the Stage I assessment.

#### **NAVY RESPONSE**

Additional information on the Stage I assessment was included on page 6 and Figures 2-1 and 2-2. Appendix A tables and page A-7 were reorganized to more clearly present information on Stage 1 results. This additional information supports the selection of chemicals for the Stage 2 assessment.

#### **6. DTSC COMMENT ON PAGE 11**

Sampling the top 6 inches of the soil is not adequate for determining potential soil contamination. The 6 inch measurements are appropriate for the particulate inhalation pathway, but it is not sufficient for oral or dermal pathways. Samples from 1 to 3 feet for this site would be necessary.

#### **NAVY RESPONSE**

The discussion on page 14 of the Final PRA indicates why the top 6 inches of soil was considered adequate for determining potential soil contamination. This zone was considered to be appropriate for the oral and dermal pathways because the results of the Stage 1 investigation indicate that metals concentrations in the top 6 inches of soil can be considered to be representative of concentrations in deeper soil. Therefore, the top 6 inches can be used to adequately characterize the deeper zones. This conclusion is based on the analytical results from the Stage 1 samples collected at depths of 1-, 5-, and 10 feet below land surface (BLS) which indicate that metals concentrations do not vary significantly with depth.

#### **7. DTSC COMMENT ON PAGE 13**

The data in Appendix A are not well presented and it is difficult to determine where the samples are from, particularly for the play areas and the areas surrounding them. The individual play areas should be assessed as well as combining the data across the play areas. Potential hot spots could be masked the way the data are currently presented.

#### **NAVY RESPONSE**

Appendix A has been reorganized and now includes an explanation of the sample naming convention which indicates sampling location, depth, and matrix.

The following text was added to Page 17 of the Final PRA which discusses the analytical results for the sampling of the play areas and areas outside the play areas.

Within the play areas, the levels of metals are very low or undetected. For the areas immediately outside the play areas, the levels fall within the range of the grid sample concentrations. It is likely that the slightly lower levels outside the play areas, when compared with the grid samples, result from some dilution by sand beyond the limits of the play area. The range of concentrations of metals in the play areas are consistently approximately an order of magnitude below the concentrations of metals outside the play areas and at the grid intersection points.

**8. DTSC COMMENT ON PAGE 25**

The future populations on the site must be addressed. It is not clear what will be happening with this facility and what the potential future land uses will be.

**NAVY RESPONSE**

It was never the objective of this report to address future populations because they will be discussed in the baseline risk assessment performed in conjunction with the remedial investigation. As stated on Page 1 of the Final PRA, the PRA for Site 12 was performed prior to the pending baseline risk assessment to determine exposure and risk associated with current land use only. The baseline risk assessment will address risks from exposure to contaminants originating from all sites and areas of concern at Treasure Island, including Site 12, and will assume both current and potential future land uses.

**9. DTSC COMMENT ON PAGE 36**

It is stated that the soil concentrations were based on samples taken from the first foot. On page 11, it is stated that the samples were taken from the first six inches. These discrepancies should be reconciled.

**NAVY RESPONSE**

There is no real discrepancy; soil samples collected during the Stage 1 investigation were collected at 1-, 5-, and 10-foot BLS, whereas soil samples collected during the Stage 2 investigation were collected at 6-inches BLS. An explanation was added to the text on page 14 of the Final PRA.

**10. DTSC COMMENT ON PAGE 37**

Table 3-5 should contain all summary statistics for the soil contaminants including range, mean, standard deviation, sample size, and other appropriate information

**NAVY RESPONSE**

A new table has been generated (Table 3-5 in the Final PRA) which contains a statistical analysis of Stage 2 chemical concentrations in soil, including: arithmetic mean, geometric mean, maximum concentration, minimum concentration, standard deviation, sample size, number of detected samples, and upper confidence limit of the geometric mean.

**11. DTSC COMMENT ON PAGE 40**

The Toxicology and Risk Assessment Section is currently requiring a skin surface area of 2,000 cm<sup>2</sup>/day for children age 1 to 6.

**NAVY RESPONSE**

The dermal contact with soil pathway has been recalculated using the new skin surface area provided by DTSC. Page 43 and Table 3-7 of the Final PRA reflect this change.

**12. DTSC COMMENT ON PAGE 47**

In calculating the dermal RfD for cadmium, the oral (food) RfD should be used instead of the oral (water) RfD.

**NAVY RESPONSE**

The calculation of the dermal RfD was revised using the oral (food) RfD for cadmium instead of the oral (water) RfD. Tables 4-1 and 5-1 of the Final PRA reflect this change.

**13. DTSC COMMENT ON PAGE 47**

The RfD and health risks calculated for lead should be replaced with calculations using the lead model developed by the Toxicology and Risk Assessment Section. The guidance document "Assessment of Health Risks from Inorganic Lead in Soil" has been included and should be referred to in recalculating these risks.

**NAVY RESPONSE**

DTSC's lead model was used in calculating risks associated with potential lead exposure. When applied to the Stage 2 data for Site 12, the DTSC model predicted that 99 percent of the children exposed have blood lead levels of 7.9 micrograms per deciliter or less. New text pertaining to the method and the results was added to page 65 of the Final PRA.

**14. DTSC COMMENT ON PAGE 55**

TTLCs and STLCS are criteria which have been developed for identification of hazardous waste for treatment, storage, and disposal considerations. These are not necessarily health based numbers and a comparison of residual concentrations of contaminants at sites is not appropriate. These comparisons are misleading and should be removed from the document.

**NAVY RESPONSE**

The sections on TTLCS and STLCS were removed in the Final PRA.