SUMMARY

This report presents the findings, conclusions, and recommendations of the Site Inspection (SI) at the Salton Sea Test Base (SSTB), Imperial County, California. The SI addressed sites posing a potential threat to human health or environment due to contamination from past handling and/or storage of hazardous materials. These sites were identified in the Preliminary Assessment (PA) (NEESA 1993) conducted by the Naval Energy and Environmental Support Activity (NEESA) as part of the Navy Installation Restoration Program (IRP) associated with processing the SSTB for closure under the Base Closure and Realignment Act of 1988.

The sites investigated at the SSTB can be loosely grouped into the following four categories of suspected contaminant sources:

- landfills (Sites 1, 4, 11, 12, 13, and 14),
- leach fields and septic tanks (Sites 6, 7, 20, 23, 25, and Remote Camera Site B 1),
- aeroballistic targets (Site 10), and
- maintenance facilities (Sites 8, 9, 15, 16, 17, 18, 19, 21, and 22).

The last category includes maintenance facilities and shops (Sites 8, 9, 15, 16, 17, 18, and 19), the oiled roads (Site 21), and the small arms range (Site 22).

The SI also included an effort to characterize background conditions, particularly for naturally occurring metals and radionuclides, for comparison with the data obtained from the potentially contaminated sites. The background characterization effort included sampling and analysis of the same media sampled and analyzed at the sites.

The purpose of the SI is to collect information concerning the potential presence of hazardous substance contamination at the SSTB, not to characterize the magnitude or extent of contamination or to recommend options. The SI scope and rationale were based on the SI Work Plan (JEG 1993) and the SI Work Plan Addendum (BNI 1994a) prepared for the SSTB. The SI included the following tasks:

- aerial topographic mapping;
- geophysical, soil gas, and radiological surveys;
- collection and laboratory analysis of soil, groundwater, sediment, and surface water samples;
- land surveying;
- aquifer testing; and
- risk screening.

These activities were performed to locate and identify suspect contaminant sources and to identify and quantify potential contaminants. The combination of investigation methodologies, sampling rationale, and analytical protocol selected for each site were based on available historical information concerning the suspected source(s) of contamination and nature of impacted media.

Summary

The subsurface geology at the SSTB consists of transgressional-regressional lacustrine deposits comprising predominately fine-grained sands, silts, and clays dipping gently to the east. Alluvial scour and fill sediments are present locally at, or near, ground surface in drainages. Hydrogeologic conditions at the SSTB are predominately unconfined, with semi-confined conditions controlled by laterally discontinuous heterogeneous interbedded strata. Groundwater flow is generally to the east toward the Salton Sea at a hydraulic gradient of 0.005. Confined aquifer conditions (approximately 16 feet of head above ground surface) were encountered in one background monitoring well. Groundwater at the SSTB is saline, unpotable, and does not meet criteria for agricultural use due to high concentrations of total dissolved solids (TDS) and other general minerals.

Risk screening was performed to evaluate if the highest concentrations of analytes detected in samples collected during the SI present potentially significant human health risks that may warrant further investigation. The risk screening was conducted using United States Environmental Protection Agency (U.S. EPA) Region IX Preliminary Remediation Goal (PRG) procedures.

The risk screening was used to calculate incremental risk due to the potential presence of contaminants related to past operations at the SSTB. Incremental risk was calculated by subtracting the risk due to naturally occurring compounds (i.e., metals and radionuclides) present at background concentrations. Risk was estimated based on potential exposure under a residential scenario for soils and sediments and under a drinking water scenario for groundwater. These scenarios are probably overly conservative since future residential development of the base is unlikely, and because groundwater at the site does not meet general quality standards for domestic use.

The calculated incremental risk for residential soil and drinking water scenarios is significant for Sites **1, 11,** and 17. The compounds that cause significant estimated risk for these sites are:

- Site 1 Taxiway Landfill: heptachlor epoxide in soil and 1,4-dichlorobenzene in groundwater.
- Site 11 Building 4033 Landfill: lead in a soil sample associated with fill materials comprising the remains of a scrapped underground fuel storage tank. This fill material is apparently unrelated to the suspect landfill at the site.
- Site 17 Old Vehicle Maintenance Area: benzene in groundwater.

Recommendations based on review of the findings and risk screening results have been grouped into the following five categories.

- No Further Action: Recommended for Sites 9, 12, 21, 22, 23B through 23E, and Remote Camera Site B 1.
- Limited Action: Recommendations for the removal of debris include the metallic debris at Site 4, the scrapped underground storage tank fill material at Site 11, the drums at Site 19. In addition, closure of the Site 20 Imhoff Tank and the Site 23A Firehouse Septic Tank is recommended.

Summary

- Groundwater Monitoring: The relative concentrations of general minerals (e.g., TDS) do not appear to be consistent between groundwater samples collected from some of the wells located in proximity to one another. The variability may reflect natural conditions, but also could indicate that the data is affected by the incomplete removal during development of water added during well installation. The source of this variability should be evaluated by the analysis of additional groundwater samples from all wells (Sites 1, 8, 14, 15, 16, 17, 18, 19, and 23A). Additionally, detection limits for some analytes, principally volatile organic compounds (VOCs) in groundwater samples, were greater than the PRG screening threshold concentrations. Therefore, conclusions concerning the potential presence of hazardous substance contamination in groundwater are conditional, and should be reviewed as additional data using analytical techniques capable of achieving lower detection limits become available.
- Feature Location: Additional field activities (e.g., geophysical surveys and/or test pits) are recommended to locate the limits of the Site 10 targets, the Site 11 landfill, and the Site 13 landfill.
- Sampling And Analyses: Additional sampling analysis of soil, groundwater, and/or sediment is recommended at Sites 1, 4, 6, 7, 10, 11, 13, 15, 16, 19, 20, 23A, and 25.