

# Proposed Plan/Draft Remedial Action Plan for Site 31, Former South Storage Yard Naval Station Treasure Island

## INTRODUCTION

The Department of the Navy (The Navy) is responsible for cleaning up contamination that may have resulted from historical operations at Naval Station Treasure Island (NAVSTA TI) (Figure 1). Under the **Installation Restoration (IR) Program** the Navy conducted environmental investigations at Site 31, the Former South Storage Yard. The investigations were conducted in cooperation with the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC), the Cal/EPA Regional Water Quality Control Board (Water Board), the U.S. Environmental Protection Agency (EPA), and the Treasure Island Development Authority (TIDA).

This **Proposed Plan/Draft Remedial Action Plan (RAP)** for **remedial action** provides information on the environmental investigations, the remedial alternatives (the options for cleaning up the site) that were evaluated, and identifies the Navy's preferred remedial alternative, removal and off-site disposal of contaminated soil. This Proposed Plan/Draft RAP meets requirements under the National Contingency Plan (NCP), which is a part of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** and the California Health and Safety Code (HSC), chapter 6.8.

## INVITATION TO COMMENT

The Navy invites you to participate by submitting comments on the Proposed Plan/Draft RAP for remedial action for Site 31. This Proposed Plan/Draft RAP is being issued pursuant to the NCP as found in CERCLA and the California HSC to ensure that the public has an opportunity to provide comments to fulfill public participation requirements. You are also invited to attend a public meeting scheduled on October 7, 2008 at 7:00 p.m. at the Casa de la Vista, Building 271, on Treasure Island to discuss this Proposed Plan/Draft RAP. The 30-day public comment period will be from September 23, 2008 to October 23, 2008. This Proposed Plan/Draft RAP highlights information from the final **Feasibility Study** report for Site 31. For a detailed review, the final Feasibility Study report is available to the public at the San Francisco Public Library information repository, and at the Treasure Island Building 1 information repository.

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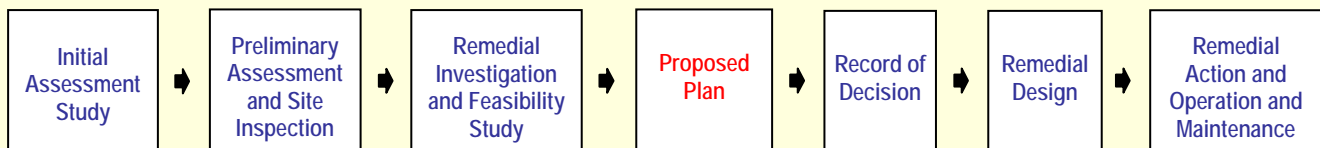
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Figure 1: Treasure Island Location

### THE CERCLA PROCESS



**SITE BACKGROUND**

Treasure Island was constructed from San Francisco Bay fill in the 1930s for use during the World Exposition in 1939. Navy operations at the island began in 1941, primarily for training, administration, housing, and other support services to the U.S. Pacific Fleet. In 1993, the Defense Base Realignment and Closure (BRAC) Commission recommended closure of NAVSTA TI; the facility was subsequently closed on September 30, 1997.

Site 31 is located in the central portion of NAVSTA TI (see Figure 2 below). During the early 1970s, the land at Site 31 was used as a storage yard (known as the South Storage Yard). In the late 1970s, Site 31 was paved over and developed as an elementary schoolyard. The schoolyard and associated elementary school were leased to the city and county of San Francisco in May 1996.



Figure 2: Site 31 Location

**NATURE AND EXTENT OF CONTAMINATION**

The Navy began investigating Site 31 in 2002 after a utility map was found that identified an old “trash dump” near a utility line along 11<sup>th</sup> Street. Investigations were conducted in 2002 and 2003 to evaluate the impact of previous activities at the South Storage Yard and to characterize the nature and extent of the buried debris. Based on the investigation results, the Navy established IR Site 31 at the former South Storage Yard in September 2003. Site 31 was configured to include the schoolyard, portions of 11th Street and Avenue E, associated sidewalks, and a portion of a parking lot near the intersection of 11th Street and Avenue E. Site boundaries and details are shown on Figure 3. Site 31 does not include the elementary school building or any other buildings or structures.

Investigations conducted at the site include the following:

- 2002 – South Storage Yard investigation
- 2002 – Exploratory trenching and Time-Critical Removal Action
- 2003 – Additional soil sampling at Site 31
- 2004 – Temporary **groundwater** well installation and sampling
- 2006/2007 – Final **Remedial Investigation** Report and Feasibility Study

The time-critical removal action conducted in 2002 to removal soil along 11<sup>th</sup> Street containing elevated concentrations of copper and lead. Environmental data collected between 2002 and 2004 were used to assess the extent of impacts to soil and groundwater and to evaluate potential **risks** to human health and the environment.

The results of the investigation concluded that soil was the only contaminated medium at Site 31. **Chemicals of concern (COC)** in soil at Site 31 include benzo(a)pyrene (B[a]P), dioxins, and lead. (See text box “What are the “Chemicals of Concern” on Page 4.) The table below lists the COCs for each of the five debris areas.

Debris Area	Area (ft <sup>2</sup> )	Chemicals of Concern
A	400	Lead
B	400	Lead
C	11,500	Dioxins, B(a)P
D	3,000	Dioxins, B(a)P
E	6,600	Lead

**SUMMARY OF SITE RISKS**

As part of the Remedial Investigation, a quantitative baseline **human health risk assessment (HHRA)** was completed to assess potential adverse human health effects from exposure to chemicals at the site. The HHRA for Site 31 is summarized below.

**Human Health Risk Assessment**

The HHRA considered both current and potential future use of the site. The existing and planned future use of the site is as an elementary schoolyard. Both elementary school children and adult staff were considered potential **receptors** under the current exposure setting. The following hypothetical receptors were also evaluated: construction workers, adult/child residents, and commercial/industrial workers. A separate **Tier 1 screening-level risk assessment** was conducted for recreational visitors due to potential redevelopment of the southeastern quadrant of the site, including Debris Area D, as a recreational area. Finally, a separate risk assessment was conducted for lead.

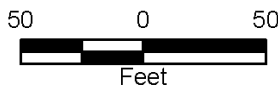
# Proposed Plan/Draft RAP for Site 31, Former South Storage Yard



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### Legend

- FENCE
- ROAD CURB
- IR SITE 31 BOUNDARY
- BUILDING
- APPROXIMATE AREA AFFECTED BY DEBRIS
- AREA WHERE DEBRIS HAS BEEN REMOVED
- UNPAVED AREA
- PAVED AREA



**Barajas & Associates, Inc.**

Naval Station Treasure Island, California

U.S. Department of the Navy, BRAC PMO West, San Diego, California

## FIGURE 3 SITE LAYOUT

Proposed Plan, Site 31

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Estimated excess cancer risk for the elementary school child, elementary school staff, and construction worker was within the EPA **risk management range**. This means that the information from the risk assessment, along with other information such as economic or legal concerns, is used to reach decisions regarding the need for and practicability of site cleanup actions. Estimated excess cancer risk for the elementary school child and staff and construction worker were within the EPA risk management range, assuming that the pavement within the schoolyard is removed. Estimated cancer risk for the hypothetical child/adult resident and commercial/industrial worker were within the cancer risk management range using the Federal risk calculation method, but above the risk management range using the State method. These two methods differ in the manner in which chemicals are selected for use in risk calculations. Noncancer hazards were below EPA's noncancer **hazard index (HI)** threshold of 1 for all receptors except hypothetical residents and commercial/industrial workers.

Site contaminants detected in groundwater were below the risk management range and below the HI of 1. B(a)P, other carcinogenic polycyclic aromatic hydrocarbons (PAHs), and dioxins are risk drivers for soil at Debris Areas C and D.

The potential for human health impacts caused by lead is typically based on blood-lead concentrations. *LeadSpread* modeling was used to predict blood-lead levels in elementary school child and adult/child residents, based on the concentration of lead in soil. The modeling results indicated a potential risk to child residents from lead. In addition to the modeling criteria, the lead concentrations were also compared with the EPA Region IX **preliminary remediation goal (PRG)** for soil in an industrial use scenario. The industrial PRG is a criterion that is applicable to elementary school staff, construction workers, or commercial/industrial workers. The lead concentrations in the three surface soil (top two feet) data sets were well below the industrial PRG. However, when site-wide surface data were combined with site-wide subsurface soil data, lead exceeded the PRG.

Table 1 highlights the cancer risks and noncancer hazards for receptors from Federal and State HHRAs.

### Ecological Risk

A Tier 1 screening-level **ecological risk assessment (ERA)** evaluated the potential for terrestrial receptors to be exposed to soil at IR Sites 6, 12, 21, 24, 30, 31, 32, and 33 at NAVSTA TI. The draft screening-level ERA did not identify any ecological resources at Treasure Island that needed to be protected. Based on the overall poor quality of the habitat on Treasure Island, the Navy does not recommend further evaluation of ecological risk for these sites. Potential impacts to marine receptors in San

Method 1 - Federal		
Receptors	Cancer Risk	Noncancer Hazard
Elementary School Child	1x10 <sup>-5</sup>	0.2
Elementary School Staff	2x10 <sup>-5</sup>	0.1
Construction Worker	3x10 <sup>-6</sup>	0.6
Future Resident	6x10 <sup>-5</sup>	24
Future Commercial/Industrial Worker	3x10 <sup>-5</sup>	2
Method 2 - State		
Receptors	Cancer Risk	Noncancer Hazard
Elementary School Child	2x10 <sup>-5</sup>	0.2
Elementary School Staff	4x10 <sup>-5</sup>	0.2
Construction Worker	5x10 <sup>-6</sup>	0.8
Future Resident	3x10 <sup>-3</sup>	25
Future Commercial/Industrial Worker	4x10 <sup>-4</sup>	2

### WHAT ARE THE "CHEMICALS OF CONCERN"

The Navy, in cooperation with DTSC, the Water Board, and EPA, has identified the following contaminants that pose the greatest potential risk to human health at Site 31.

**Benzo(a)pyrene:** Benzo(a)pyrene (B(a)P) is a member of a class of compounds known as PAHs. PAHs are primarily by-products of incomplete combustion. These combustion sources are numerous, including natural sources such as wildfires, industrial processes, transportation, and disposal activities such as open trash burning. Benzo(a)pyrene is a likely human carcinogen, causes skin disorders in humans and animals, and causes harmful developmental and reproductive effects.

**Dioxins:** Dioxins are a group of chlorinated hydrocarbons that form as by-products of a variety of chemical reactions and combustion processes. The most common health effect from dioxin exposure in humans is a skin condition called *chloracne*. Other effects of exposure to large amounts of dioxin include skin rashes, skin discoloration, excessive body hair, and possibly mild liver damage.

Several studies suggest that workers exposed to high levels of dioxins at their workplace over many years have an increased risk of cancer. Animal studies have also shown an increased risk of cancer from long-term exposure to dioxins. Also, based on data from animal studies, there is some concern that exposure to low levels of dioxins over long periods (or high level exposures at sensitive times) might result in reproductive or developmental effects.

**Lead:** Lead is a heavy metal that occurs naturally in rock and soil. Common sources in soil include paints and leaded fuels. The term heavy metal refers to any metallic chemical element that has a relatively high density and is toxic at relatively low concentrations. Heavy metals are dangerous because they tend to bioaccumulate. Lead is neurotoxic, so individuals whose body is still developing (such as children or developing fetuses) are most at risk.

**Polycyclic Aromatic Hydrocarbons (PAH):** PAHs are compounds typically associated with the incomplete combustion of fossil fuels. These compounds are stable and resist common degradation processes in the environment. Many PAHs will bioaccumulate and are toxic to humans and ecological receptors.

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Francisco Bay were evaluated for chemicals detected in groundwater at the site. This evaluation determined that the groundwater was not a potential risk to the marine receptors.

### REMEDIAL ACTION OBJECTIVES

**Remedial action objectives (RAOs)** are developed to identify and screen remedial alternatives that protect human health and the environment and are consistent with reasonably anticipated land use. The RAOs were developed for the present and planned land use and, as an added conservative protection measure, for any future unrestricted residential or commercial/industrial use of Site 31. Residential or commercial/industrial use of the property is not currently anticipated and therefore is considered a hypothetical alternate land use. The hypothetical alternate land use scenario conservatively assumes that the paved areas are no longer in place and that residential or commercial/industrial areas are developed. The RAOs specify the COCs, **exposure pathways**, receptors, and an acceptable contaminant level or range of levels for each exposure route for protection of human health and the environment. RAOs are listed below.

- For the elementary school child and staff receptor, to prevent direct contact with and ingestion of shallow soils containing B(a)P at concentrations exceeding established target cleanup levels and dioxin concentrations above the **ambient** level.
- For the construction worker, prevent direct contact with and ingestion of soils that contain lead concentrations exceeding the EPA industrial PRG.
- For the recreational visitor, prevent direct contact with and ingestion of soils located in the southeastern quadrant that contain dioxin concentrations above ambient levels and B(a)P concentrations that exceed target cleanup levels.
- For the commercial/industrial worker, prevent direct contact with and ingestion of soils containing B(a)P concentrations that exceed target cleanup levels, dioxin concentrations above the ambient levels, and lead concentrations that exceed the EPA industrial PRG.
- For the residential receptor, prevent direct contact with and ingestion of soil containing B(a)P concentrations that exceed target cleanup levels, lead concentrations exceeding the EPA residential PRG, and dioxin concentrations above the ambient levels.

Specific cleanup target concentrations are 0.62 milligrams per kilogram (mg/kg) for B(a)P equivalents, 12 nanograms per kilogram for dioxin equivalents, and 400 mg/kg for lead in the residential scenario.

The RAO for the recreational visitor was developed based on the risk evaluation for the southeastern quadrant of Site 31, the only part of Site 31 currently designated for potential recreational use in the 1996 Reuse Plan. RAOs for the protection of aquatic and terrestrial ecological receptors from soil were not developed because there are no complete exposure pathways for ecological receptors.

### SUMMARY OF REMEDIAL ALTERNATIVES

The Feasibility Study identified the following response actions to prevent contaminants from posing a potential future **unacceptable risk** to human receptors.

Summary of Remedial Alternatives - Site 31	
Alternative	Description
1	No Action
2	Engineering Controls Combined with <b>Institutional Controls</b>
3	Engineering and Institutional Controls, Hot Spot Excavation (Debris Area E), and Off-Site Disposal
4	Engineering and Institutional Controls, Hot Spot Excavation (Debris Areas C and D, Excluding Street), and Off-Site Disposal
5	Complete Removal of Debris Areas A, B, C, D, and E, and Off-Site Disposal

Alternative 5 is identified in this proposed plan as the preferred alternative. Each of the alternatives and their estimated costs are described below.

#### Alternative 1: No Action

*Estimated Present Worth Cost:* ..... \$0

Alternative 1 provides a baseline used to compare the other alternatives. Under this alternative, no remedial action would be undertaken at Site 31. No efforts would be made to contain, remove, monitor, or treat the contaminated soil at the site. This alternative would not meet the established RAOs, because no remedial action, engineering controls, or institutional controls would be implemented. There are no costs associated with the no action alternative.

#### Alternative 2: Engineering Controls Combined with Institutional Controls

*Estimated Present Worth Cost:* .....\$788,000

Remedial Alternative 2 uses a combination of engineering and institutional controls to prevent exposure to COCs identified in soils beneath Site 31.

This alternative would use engineering and institutional controls to ensure that the existing asphalt and concrete at Site 31 is maintained as an exposure prevention barrier and include provisions for allowing repairs or improvements to subsurface utilities. The institutional controls would also

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limit commercial/industrial or residential use of the property to uses that maintain adequate barriers to prevent exposure. Thus, Alternative 2 would meet the RAOs by preventing exposure to COCs.

Institutional controls would include the following:

- A land use covenant requiring inspection of the existing exposure prevention barriers (concrete and asphalt) and provisions for making utility repairs, as necessary.
- A Deed Notice to notify the public of the existence of potential contamination and deed restrictions limiting commercial/industrial reuse of the site.
- A **Remedial Action Work Plan (RAWP)** to specify the roles and responsibilities for implementing, monitoring, and enforcing the institutional controls.

### **Alternative 3: Engineering Controls, Institutional Controls, Hot Spot Excavation (Debris Area E), and Off-Site Disposal**

*Estimated Present Worth Cost: .....\$1,331,000*

Alternative 3 is similar to Alternative 2, with the addition of limited demolition, excavation, and disposal of waste associated with Debris Area E (see Figure 3). This Alternative involves engineering and institutional controls, active remediation of hot spots by removing soil within Debris Area E, and off-site disposal of contaminated soil at a permitted hazardous-waste landfill. Selective hot spot removal is expected to eliminate lead exposure to construction workers at concentrations that exceed the industrial PRG. Engineering and institutional controls would prevent exposure of residents to lead in concentrations that exceed the residential PRG.

A temporary security fence would be installed around the site to prevent unauthorized access during remedial activities. The asphalt and concrete on the surface of Debris Area E (11<sup>th</sup> Street between Avenue D and Avenue E; see Figure 3) would be demolished. Additionally, soil would be removed to a maximum depth of 4 feet and disposed of as nonhazardous waste. Asphalt and concrete debris would be segregated from targeted contaminated soils. Contaminated soil would be excavated and transported as hazardous waste for disposal. The excavation would be backfilled with clean material. Engineering and institutional controls would be required because Alternative 3 does not involve complete excavation of all debris areas (to a depth of 6 feet) and therefore would not support unrestricted use of the site.

Lead is considered the principal COC in Debris Area E for construction/utility worker exposure. Alternative 3 would meet the RAOs for the following receptors:

- Commercial/industrial worker – meets RAOs by removing debris and soil in Area E that contains lead concentrations exceeding the commercial/industrial PRG.
- Elementary school child and staff, recreational visitor, and resident – meets RAOs for contaminants that would remain on site by implementing engineering and institutional controls.

Engineering and institutional controls require monitoring, maintaining, and reporting on the effectiveness and integrity of existing exposure prevention barriers and/or implementing land-use restrictions.

### **Alternative 4: Engineering Controls, Institutional Controls, Hot Spot Excavation (Debris Areas C and D, excluding Street), and Off-Site Disposal**

*Estimated Present Worth Cost: .....\$1,950,000*

Under this alternative, asphalt and concrete on the surface of Debris Areas C and D would be demolished and soil removed to a maximum depth of 4 feet (see Figure 3). Alternative 4 involves the same engineering and institutional controls as Alternatives 2 and 3. Alternative 4 does not involve complete excavation of all debris areas (to a depth of 6 feet) and would not support unrestricted use of the site.

Alternative 4 would meet the RAOs for the following receptors:

- Elementary school child and staff, commercial/industrial worker, recreational visitor, and resident – meets RAOs by removing debris and soil that contains B(a)P and dioxins above the RAOs limits.
- Commercial/ industrial worker and resident – meets RAOs for contaminants that would remain on site by implementing engineering and institutional controls.

### **Alternative 5: Complete Removal of Debris Areas A, B, C, D, and E, and Off-Site Disposal**

*Estimated Present Worth Cost: .....\$2,308,000*

This alternative would include demolishing the street, replacing or rerouting utilities, and removing asphalt and concrete to access, remove, and dispose of contaminated soils at Debris Areas A, B, C, D, and E (beneath 11<sup>th</sup> Street). Alternative 5 would involve the removal of all soils within these areas with concentrations of lead, B(a)P, and dioxins in excess of the RAO concentrations. Confirmation samples would be collected from the bottom and sidewalls of the excavations to assure that all contaminants at concentrations exceeding the cleanup goals were removed. Alternative 5 meets the Department of Defense requirement for evaluation of an alternative for unrestricted use of the site.

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Alternative 5 is the most extensive of the alternatives evaluated and involves complete excavation of Debris Areas A, B, C, D, and E to a depth of 6 feet. This is a conservative depth because the bottom of the excavation is designed to be below the lowest known contamination depth. Groundwater is expected to be 5 to 7 feet below ground surface at Site 31. Soil will be excavated to the depth necessary to remove the contaminants. Confirmation samples will be collected from the bottom and sidewalls of the excavation to assure contaminants are removed to below the cleanup goals. A temporary security fence would be installed around the site to prevent unauthorized access during remedial activities.

It is assumed that a total of 21,900 square feet of soil beneath Debris Areas A, B, C, D, and E would be removed to a depth of 6 feet bgs. An estimated 930 cubic yards of asphalt and concrete (demolition debris) would require disposal as nonhazardous waste and an estimated 6,080 cubic yards of contaminated soil would require disposal as hazardous waste. Construction of a new or replacement schoolyard and replacement of the street and the parking lot are included in the costs for this alternative, however, the decision to replace these surfaces would be made during the remedial design phase.

Alternative 5 would meet the RAOs for all receptors by removing contaminated soil from the hot spots.

### EVALUATION OF ALTERNATIVES

The assembled remedial action alternatives represent a range of distinct environmental restoration strategies that address the environmental RAOs associated with dioxin, lead, and B(a)P contamination in soil at Site 31. The alternatives were evaluated against the nine EPA criteria shown in the shaded box.

These criteria are used to evaluate the cleanup alternatives for this site. The first seven criteria are discussed in the following comparison of alternatives. The last two criteria will be addressed through public comment and regulatory agency review periods. The final decision on the remedy for Site 31 will be made by the Navy and DTSC after receiving and evaluating the public input.

#### 1. Overall Protection of Human Health and the Environment

Alternative 5 is protective of human health under all land use scenarios. Alternatives 2, 3, and 4 employ engineering and institutional controls to ensure human exposure pathways remain incomplete by (1) requiring the existing schoolyard paving to remain and be periodically inspected and maintained, and (2) requiring any alternative future reuse of the property to preserve the existing paving.

### EVALUATION CRITERIA FOR REMEDIAL ALTERNATIVES

**Overall Protection of Human Health and the Environment** determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

**Compliance with Applicable or Relevant and Appropriate Requirements (ARAR)** evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other requirements that pertain to the site.

**Long-Term Effectiveness and Permanence** considers the ability of an alternative to maintain protection of human health and the environment over time.

**Reduction of Toxicity, Mobility, or Volume** assesses the relative performance of recycling or treatment technologies on the toxicity, mobility or volume of contaminants.

**Short-Term Effectiveness** considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.

**Implementability** considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

**Cost** includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

**Regulatory Acceptance** considers whether the DTSC and other regulators agree with the Navy's analyses and recommendations, as described in the Remedial Investigation/Feasibility Study and Proposed Plan/Draft RAP.

**Community Acceptance** considers whether the local community agrees with Navy's analyses and preferred alternative. Comments received on the Proposed Plan/Draft RAP are an important indicator of community acceptance.

- Alternative 5 would remove any contaminated soil and the source for potential human health risk under all use scenarios.
- Alternatives 3 and 4 would remove contaminated soil in varying quantities, representing elimination of risk under various exposure pathways.
- Alternative 1 is the least protective of human health and the environment.

#### 2. Compliance with Applicable or Relevant and Appropriate Requirements

**Applicable or Relevant and Appropriate Requirements (ARARs)** are Federal or more stringent State environmental standards, requirements, criteria, or limitations that need to be attained by final remedial actions. *Applicable* requirements are cleanup standards or other substantive requirements under laws that specifically address the situation at a CERCLA site. *Relevant and appropriate requirements* are environmental regulations

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that, although not applicable, address problems or situations sufficiently similar and are well suited to the conditions at a site. ARARs may be chemical-specific, location-specific or action-specific, as discussed below.

No potential chemical-specific ARARs for soil that present a numerical cleanup goal were identified. Because there are no chemical-specific ARARs for soil other than the waste characterization requirements, remediation goals for Site 31 are based on ambient levels for dioxins, EPA Region IX PRGs for lead, and a risk-based screening level for B(a)P. No location-specific ARARs were identified for Site 31.

- No action-specific ARARs apply to Alternative 1 because it does not involve initiation of any action.
- Alternative 2, as well as Alternatives 3 and 4, would comply with the potential action-specific state ARARs for institutional controls, as identified in the Feasibility Study.
- Action-specific ARARs associated with on-site waste generation, waste characterization, waste piles and excavation would be addressed as part of the work plan for Alternatives 3, 4, and 5 to ensure compliance with ARARs.

### 3. Long-Term Effectiveness and Permanence

- In implementing Alternative 5, long-term human health risks would be eliminated by the extensive excavation of contaminated soil for disposal.
- Alternatives 2, 3, and 4 are not as effective or permanent long term because risks associated with current and future land uses are mitigated to a lesser extent depending on the quantity of soil removed.
- In implementing Alternatives 2, 3, and 4, engineering and institutional controls would limit exposure to contaminated soil beneath the asphalt and concrete.
- Because no action is taken, Alternative 1 would not provide long-term effectiveness and permanence.

### 4. Reduction of Toxicity, Mobility, and Volume

- Alternatives 1 and 2 do not involve active treatment of potential contamination, or reduce its toxicity, mobility, or volume. The COCs identified for this site (e.g., lead, dioxin, and B(a)P) are known to persist in soils and are not expected to degrade quickly.

- Alternatives 3, 4 and 5 would identify and remove contaminated soil from Site 31 and, therefore, reduce the toxicity and volume of contaminated soil at the site. Placing the soil in an approved landfill would reduce the mobility of contaminants in the environment.

### 5. Short-Term Effectiveness

No active remedial action is involved under Alternatives 1 and 2, so no new health risks are posed to the community, current occupants, workers, or the environment in the short term. The risk under present and planned site use is within the risk management range; therefore Alternatives 1 and 2 are considered highly effective in the short term.

Alternatives 3, 4, and 5 would introduce risk to the community from dust and truck traffic during field activities; however, these risks could be mitigated through best management practices such as truck route planning and dust control measures. Although the risk assessment indicates the risk to the construction worker is below the risk management range, any construction or demolition poses some risks for workers. These construction-related risks can be mitigated through best management safety practices.

### 6. Implementability

All of the alternatives are technically feasible and are considered equally implementable.

- Alternative 1 does not require any action.
- Alternatives 2, 3, 4, and 5 are proven technologies, and it is unlikely that technical or administrative problems would delay implementing any of these alternatives.
- The materials and services necessary to implement Alternatives 2, 3, 4, and 5 are readily available locally.

### 7. Cost

Costs estimates for the alternatives are as follows:

- Alternative 5: \$2,308,000
- Alternative 4: \$1,950,000
- Alternative 3: \$1,331,000
- Alternative 2: \$788,000
- There are no costs associated with Alternative 1

The cost estimates include capital construction costs for soil removal and long-term operation and maintenance costs for engineering and institutional controls covering a 30-year period for alternatives 2, 3 and 4. The above estimates represent present value costs.



### 8. Regulatory Acceptance

Regulatory acceptance of the Navy's preferred alternative will be addressed through meetings, response to comments, and approval on the PP, **Record of Decision (ROD)** and RAP.

### 9. Community Acceptance

Community acceptance of the preferred alternative will be evaluated after the public comment period and will be described in the ROD and RAP for Site 31.

### SUMMARY OF THE PREFERRED ALTERNATIVE

Alternative 5, complete removal and off-site disposal of contaminated soil from Debris Areas A, B, C, D, and E, is the Navy's preferred alternative for Site 31. Alternative 5 would prevent exposure to contaminated soils at the site and would allow unrestricted use. Alternatives 1, 2, 3, and 4 were rejected because they would provide a lower degree of protection to potential human and ecological receptors at the site. The preferred remedial alternative would require approximately one year for implementation.

### MULTI-AGENCY PARTICIPATION

The BRAC Cleanup Team (BCT) is comprised of the Navy, US EPA, and Cal/EPA. The primary goals of the BCT are to protect human health and the environment, coordinate environmental investigations, and expedite environmental cleanup at facilities. The BCT reviewed all major documents and activities associated with Site 31 including the Feasibility Study. Based on the reviews and discussions on key documents, the BCT supports the Navy's recommended preferred alternative at Site 31.

### REGULATORY SUMMARY

#### **California Health and Safety Code**

This document is intended to meet the requirements of California HSC Section 25356.1 for hazardous substance release sites, as required by DTSC. The HSC requires preparation of a RAP for sites that are not listed on the **National Priority List (NPL)**, such as NAVSTA TI. Therefore, this document also serves as a draft RAP in order to fulfill the public notice and comment requirements of the HSC. The final RAP will be incorporated in the ROD for this site.

#### **California Environmental Quality Act**

DTSC has prepared an Initial Study to evaluate potential impact of the proposed project on the environment. The findings of the Initial Study indicate that the project would not have a significant effect on public health or the environment. Therefore, DTSC has prepared a proposed

Negative Declaration for the Site 31 cleanup. Both the Initial Study and proposed Negative Declaration are available for review and comment during the public comment period.

#### **Nonbinding Allocation of Responsibility**

HSC Section 25356.1(e) requires DTSC to prepare a preliminary nonbinding allocation of responsibility among all identifiable potentially responsible parties. HSC Section 25356.3(a) allows potentially responsible parties with an aggregate allocation in excess of 50 percent to convene an arbitration proceeding by submitting to binding arbitration before an arbitration panel. Based on available information regarding the former NAVSTA TI, DTSC determines that the Navy is a responsible party with aggregate alleged liability in excess of 50 percent of the costs of removal and remedial action pursuant to HSC Section 25356.3. The Navy may convene arbitration if they so choose.

### COMMUNITY PARTICIPATION

Community involvement is essential to selecting remedial alternatives. Input will be collected after the alternatives are presented to the public, and a final decision will be made after regulatory agencies and community input on the Proposed Plan/Draft RAP has been reviewed. The Navy will then issue a ROD and DTSC will approve the RAP to select the final remedy.

The public comment period on the Proposed Plan/Draft RAP and the proposed Negative Declaration begin on September 23, 2008 and ends on October 23, 2008. A public meeting will be held on October 7, 2008, so the public can discuss the Proposed Plan/Draft RAP and the proposed Negative Declaration with representatives from the Navy and DTSC. The Navy and DTSC invite you to comment on the results of environmental investigations at Site 31 and on this Proposed Plan/Draft RAP and the proposed Negative Declaration.

### THE NEXT STEP

The 30-day public comment period will end on October 23, 2008. After the comment period has ended, the Navy and DTSC will consider the comments received on this Proposed Plan/Draft RAP and the proposed Negative Declaration before making a final decision for Site 31. The Navy's decision will be documented in a ROD, which will include the final RAP and responses to all comments received on this Proposed Plan/Draft RAP and the proposed Negative Declaration. A public notice will be placed in the San Francisco Chronicle announcing when the ROD will become available to the public in the San Francisco Public Library information repository and at Treasure Island Building 1.

## **INFORMATION REPOSITORIES**

The Proposed Plan/Draft RAP, the proposed Negative Declaration, and other Site 31 related documents are available at:

San Francisco Public Library  
Government Publications Section  
100 Larkin Street  
San Francisco, California  
(415) 557-4400

Navy BRAC Caretaker Support Office  
410 Palm Avenue, Building 1, Room 161  
Treasure Island  
San Francisco, California  
(415) 743-4704

## **OPPORTUNITIES FOR COMMUNITY INVOLVEMENT**

**Public Meeting October 7, 2008, 7:00-8:00 p.m.**

**Location: Casa de la Vista, Building 271, Treasure Island**

You are invited to this community meeting to discuss the information presented in this Proposed Plan/Draft RAP and the proposed Negative Declaration for Site 31. Navy representatives will provide information on the environmental investigations conducted for Site 31. You will have an opportunity to ask questions and formally comment on the Navy's and DTSC's preferred remedial alternative for Site 31 as presented in this Proposed Plan/Draft RAP and DTSC's proposed Negative Declaration.

### **Public Comment Period Continues through October 23, 2008**

We encourage you to comment on this Proposed Plan/Draft RAP and the proposed Negative Declaration during the 30-day public comment period. You may provide comments on the Proposed Plan/Draft RAP and the proposed Negative Declaration orally at the public meeting or submit your comments in writing during or after the public meeting. You may mail or email written comments on this Proposed Plan/Draft RAP to the Navy contact person provided on page 11 postmarked no later than October 23, 2008. Similarly, you may mail or email written comments of the proposed Negative Declaration to the DTSC contact person identified on page 11 of this document with the same deadline. The Navy and DTSC will consider all public comments received during this comment period, or in person at the public meeting mentioned above, before making a final decision for Site 31.

## GLOSSARY OF TERMS

Specialized terms used in this Proposed Plan/Draft RAP are defined below.

**Ambient** – Concentrations of a man-made compound (such as dioxins) that are known to be dispersed throughout the environment and can be found in almost all locations.

**Applicable or Relevant and Appropriate Requirements (ARARs)** – Federal or more stringent State environmental standards, requirements, criteria, or limitations that need to be attained by final remedial actions for a CERCLA site.

**Chemical of Concern (COC)** – Chemical identified as a potential risk during a site-specific, human-health, or ecological risk assessment.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)** – A Federal law that sets up a program to identify hazardous waste sites and establishes procedures for cleaning up sites to protect human health and the environment.

**Ecological Risk Assessment (ERA)** - An analysis of the potential negative ecological effects to plants and animals caused by exposure to hazardous substances released from a site.

**Exposure Pathway** – The way that a chemical comes into contact with a living organism, such as touching, breathing, or ingesting.

**Feasibility Study** – A study that identifies and evaluates potential cleanup methods based on their effectiveness, availability, cost, and other factors.

**Groundwater** – Water below the ground surface in rock or sediment.

**Hazard Index (HI)** – A calculated value used to represent a potential noncancer health effect. An HI value of 1 or less is considered protective of human health.

**Human Health Risk Assessment (HHRA)** – An analysis of the potential negative human health impacts caused by exposure to hazardous substances released from a site.

**Installation Restoration (IR) Program** – The program initiated by the Department of Defense, in compliance with CERCLA (see above), to identify, investigate, assess, characterize, clean up, or control past releases of hazardous substances.

**Institutional Controls** – Non-engineered mechanisms established to limit human exposure to contaminated waste, soil, or groundwater. These mechanisms may include deed restrictions, covenants, easements, laws, and regulations.

**National Priority List (NPL)** – The Federal list of Superfund sites nationwide. NPL sites are those considered high priority for cleanup under the Federal Superfund program. NAVSTA TI is not on the NPL list.

**Polycyclic Aromatic Hydrocarbons (PAHs)** – Compounds typically associated with the incomplete combustion of fossil fuels. These compounds are stable and resist common degradation processes in the environment. Many PAHs will bioaccumulate and are toxic to humans and ecological receptors.

**Preliminary Remediation Goals (PRGs)** – PRGs are developed by USEPA Region IX to estimate contaminant concentrations in the environmental media (soil, air, and water) both in residential and industrial settings, that are protective of humans, including sensitive groups, over a lifetime.

**Proposed Plan** – A document that reviews the cleanup alternatives, summarizes the recommended cleanup actions, explains the reasons for recommending them, and solicits comments from the community.

**Receptors** – Any organism (human or ecological) that may be exposed to site contaminants.

**Record of Decision (ROD)** – a public document that specifies the final cleanup alternative for a site, based on information from the Remedial Investigation and Feasibility Study, and on public comments and concerns. Under Federal law (CERCLA), the decision document is called a ROD. Under State law, the document is called a Remedial Action Plan (RAP).

**Remedial Action** – A CERCLA phase in which the selected cleanup technology is constructed, installed, implemented, and/or operated until confirmatory sampling and analysis indicate that cleanup levels have been reached.

**Remedial Action Objective (RAO)** – A description of remedial goals for each medium of concern at a site (for example, soil or groundwater), expressed in terms of the contaminants of concern, target cleanup levels, exposure pathways and receptors, and/or maximum acceptable exposure levels based on cumulative risks and hazards.

**Remedial Action Plan (RAP)** – A plan that outlines a specific program leading to the remediation of a contaminated site, prepared for public review and comment. The RAP is required under California Health and Safety Code Section 25356.1 for sites that are not listed on the NPL.

**Remedial Action Work Plan (RAWP)** – A plan that details the specific actions required to implement the selected remedy.

**Remedial Investigation** – An investigation to identify nature and extent of potential contaminants at a site and assess human health and environmental risks and hazards that the chemicals may cause.

**Risk** – Likelihood or probability that a hazardous substance released to the environment will cause adverse effects on exposed human or other biological receptors. Risk calculations incorporate very conservative assumptions. Adverse health effects can be classified as carcinogenic (cancer-causing) or non-carcinogenic. Risk from cancer is expressed as a probability such as 1 in 1,000,000 (also expressed  $1 \times 10^{-6}$ ). This means that one person in a population of 1,000,000 is more likely to get cancer over their lifetime. Non-cancer risk is expressed as a hazard Index (HI), see above.

**Risk Management Range** – The risk management range is considered to represent a risk between 1 in 10,000 and 1 in 1,000,000.

**Tier 1 Screening-Level Risk Assessment** - An assessment of risk based on published screening criteria.

**Unacceptable Risk** – A quantification of potential harm to humans, animals, or plants from exposure to contaminants at elevated levels. An unacceptable risk means there is a threat to human health or the environment and an action must be taken. Unacceptable risk is characterized by a site risk above 1 in 10,000 ( $1 \times 10^{-4}$ ).

# Proposed Plan/Draft RAP for Site 31, Former South Storage Yard

## FOR MORE INFORMATION

For more information on the environmental program at NAVSTA TI, the Proposed Plan/Draft RAP, RAP, Record of Decision, or Negative Declaration, please contact the following:

### Navy Contact

Mr. Charles Perry  
1455 Frazee Road, Suite 900  
San Diego, CA 92108-4310  
(619) 532-0911  
(617) 532-0983 (fax)  
[charles.L.perry@navy.mil](mailto:charles.L.perry@navy.mil)

### Water Board Contact

Mr. Paisha Jorgensen  
1515 Clay Street, Suite 1400  
Oakland, CA 94612  
(510) 622-2756  
[pjorgensen@waterboards.ca.gov](mailto:pjorgensen@waterboards.ca.gov)

### DTSC Contact

Mr. Ryan Miya  
700 Heinz Avenue  
Berkeley, CA 94710-2721  
(510) 540-3775  
[rmiya@dtsc.ca.gov](mailto:rmiya@dtsc.ca.gov)

### EPA Contact

Ms. Christine Katin  
75 Hawthorne St. SFD-8-1  
San Francisco, CA 94105-3901  
(415) 972-3112  
[katin.christine@epa.gov](mailto:katin.christine@epa.gov)

## WHERE TO SUBMIT COMMENTS

### Proposed Plan/Draft RAP

In addition to the public meeting, you may submit your comments on the Proposed Plan/Draft RAP via fax, email, or mail to the Navy contact person identified above.

### Proposed Negative Declaration

You may submit your comments on the proposed Negative Declaration via mail or email to the DTSC contact person listed above.

## DATES TO REMEMBER

**October 7, 2008  
7:00-8:00 p.m.**

Public meeting for comments on the Proposed Plan/Draft RAP and the proposed Negative Declaration.

All comments must be postmarked by  
October 23, 2008 for consideration.

*Cut Here*

## MAILING COUPON

If you would like to be added to the Naval Station Treasure Island mailing list and receive copies of future newsletters and fact sheets, please fill out the coupon below and mail it to:

Mr. James Sullivan  
Navy BRAC Program Management Office West  
410 Palm Avenue  
Building 1, Room 161  
Treasure Island, San Francisco, CA 94130-1806

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_

ADD MY NAME TO THE MAILING LIST  DELETE MY NAME FROM THE MAILING LIST