



PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN FORMER NAVAL STATION TREASURE ISLAND Installation Restoration Program Site 21

San Francisco, California

October 2011

THE DEPARTMENT OF THE NAVY ANNOUNCES PROPOSED PLAN/ DRAFT REMEDIAL ACTION PLAN

INTRODUCTION

The Department of the Navy (The Navy) presents this **Proposed Plan/Draft Remedial Action Plan (RAP)** for remediation of **Installation Restoration (IR)** Site 21, at the former Naval Station Treasure Island (NAVSTA TI) (Figure 1). Under the IR Program, the Navy conducted environmental investigations at Site 21, a parcel of property that formerly included a vessel waste oil recovery area. The Navy coordinated its investigations and is presenting this plan 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).

The Department of the Navy (The Navy) is responsible for planning and implementing clean-up actions to remediate contamination that may have resulted from historical operations at former NAVSTA TI. This Proposed Plan/Draft RAP provides information on the environmental investigations conducted at the site prior to the treatability study and the remedial alternatives (the options for cleaning up the site) that were evaluated. This document identifies the Navy’s preferred remedial alternative. The preferred remedial alternative is to implement **institutional controls (IC)**, which is the most cost-effective alternative that will provide adequate protection of human health and the environment. ICs will allow redevelopment of the site in a manner consistent with the approved local reuse plan so long as appropriate ICs are implemented that are protective of residential receptors. ICs will also prohibit groundwater use, except for dewatering purposes during construction activities.

This Proposed Plan/Draft RAP meets the requirements of the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)**, the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)** and the California Health and Safety Code (HSC), chapter 6.8 (Figure 2).

INVITATION TO COMMENT

Public participation is a critical part of the CERCLA process. The Navy invites you to participate by submitting written or verbal comments on the Proposed Plan/Draft RAP for Site 21. This Proposed Plan/Draft RAP is being issued pursuant to CERCLA, the NCP, and the HSC to ensure that the public has an opportunity to provide comments, in fulfillment of public participation requirements.

This Proposed Plan/Draft RAP highlights information from the 2009 final **Focused Feasibility Study (FFS)** report for Site 21. This report is available to the public at the San Francisco Public Library information repository, and at the Treasure Island Building 1 information repository (See page 9 for information.)

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*Note: Specialized or technical terms are highlighted in **bold** the first time they appear and are defined in the glossary on page 10.*

— NOTICE —

Public Comment Period

October 14 to November 14, 2011

Public Meeting

November 2, 2011

Casa de la Vista, Building 271
Treasure Island

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 21 is located along the southeastern shoreline of NAVSTA TI, (see Figure 1). Site 21 operated between 1946 and 1995 in various capacities. Historically, the principal operation at Site 21 was the unloading of waste oil from ships and the transfer of the waste to an onshore oil-water separator at Site 21. Several buildings are located or partially located at Site 21, including Buildings 3, 112, 12A, and 12B. Historically, Building 3 housed maintenance facilities, port and emergency services, applied vocational schools, chemical storage facilities, and an office space annex. Building 112 was a former storage and office building, 12A was a former Harbor Master's office, and 12B was a tool shed and storage building.

The northeastern half of the site is an open parking area adjacent to Building 3. The southeastern half of the site is fenced and currently is occupied by the Treasure Island Sailing Center, which operates a nonprofit sailing outreach program for adults and children throughout the Bay Area. NAVSTA TI is currently in the process of being transferred to the City and County of San Francisco.

NATURE AND EXTENT OF CONTAMINATION

The Navy began investigating Site 21 in 1988. The initial site inspection concluded that areas where waste oil recovery operations occurred between Building 3 and the bay warranted further investigation because of the potential for contamination of soil and groundwater. Investigations conducted at the site include the following:

- 1988 - Preliminary assessment/site inspection
- 1992 – Remedial investigation (phases I and II)
- 1994 – Inactive fuel line investigation
- 1995 – Tidal mixing study and aquifer testing
- 1997 – Environmental baseline study
- 2001 to 2002 – Ambient metals study, base-wide groundwater monitoring, former dip tank investigation.

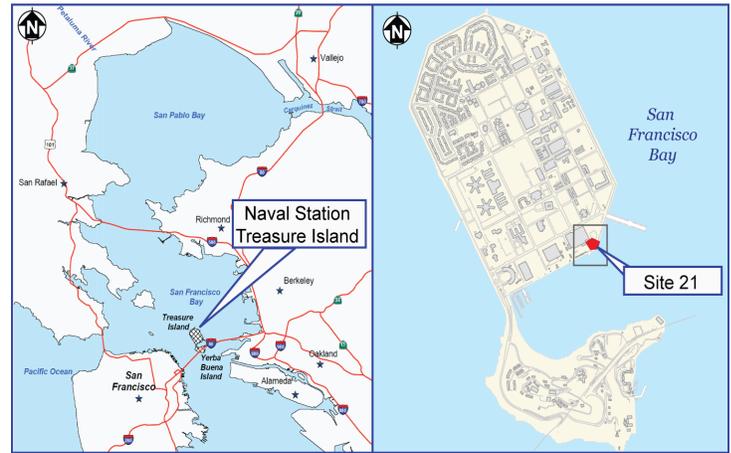


Figure 1. Location of Former Naval Station Treasure Island and Site 21

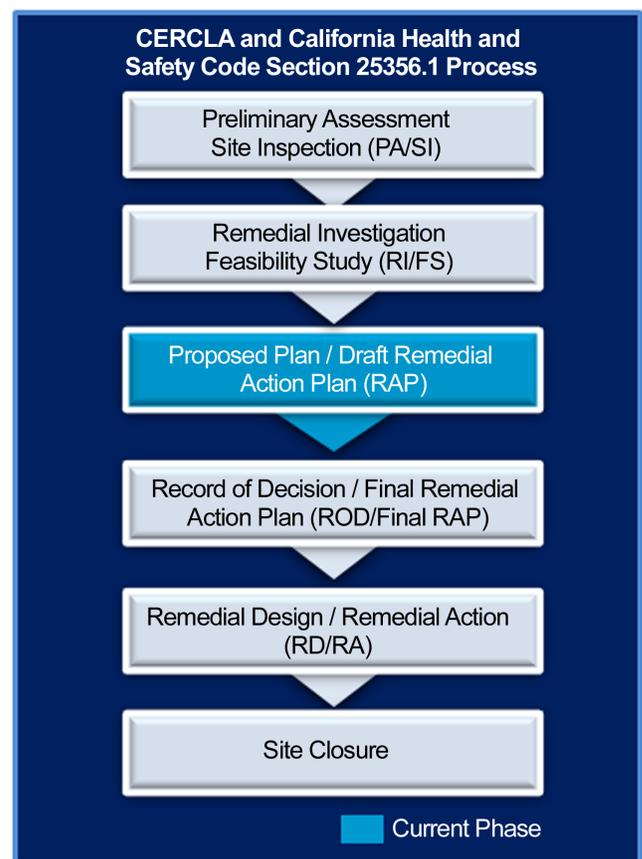


Figure 2. Current Phase in CERCLA and California HSC Process

- 2005 to present – Treatability Study
- 2007 – Remedial investigation
- 2009 – Focused Feasibility Study

Environmental data collected between 1994 and 2002 was used to assess the extent of impacts to the soil and **groundwater** and to evaluate potential **risks** to human health and the environment. The evaluation of all the environmental data collected (pre-treatability study data)

at Site 21 is presented in the 2007 **remedial investigation (RI)** report. The results of the RI concluded that **volatile organic compounds (VOC)** in the groundwater are the **chemicals of concern (COC)** at Site 21 (see text box below). This VOC contamination apparently resulted from the operation of a solvent parts washing station located in the southwest corner of Building 3.

WHAT ARE THE CHEMICALS OF CONCERN AT SITE 21?

The Navy, in coordination with DTSC, Water Board and EPA, has identified VOCs as the contaminants that pose potential risk to human health at Site 21.

VOCs: Volatile organic compounds are organic chemical compounds that have a high vapor pressure and low water solubility; VOCs can significantly vaporize under normal atmospheric conditions. VOCs are often a component of petroleum fuels, hydraulic fluids, paint thinners, and dry cleaning chemicals.

Health effects vary greatly from exposure to VOCs from those that are highly toxic, to those with no known health effect. As with other pollutants, the extent and nature of the health effect will depend on many factors including the amount or concentration of the chemical and the length of time an individual is exposed. Adverse health effects from VOC exposure include eye, nose, and throat irritation; headaches, loss of coordination, and nausea; and damage to the liver, kidneys, and central nervous system. Some organic compounds can cause cancer in animals, and some are suspected or known to cause cancer in humans.

Source: U.S. Environmental Protection Agency
<http://www.epa.gov/iaq/voc.html#Health%20Effects>

Groundwater samples were collected at Site 21 as part of the phase II remedial investigation, the additional remedial investigation, the inactive fuel line investigation, and base-wide groundwater monitoring.

Nearly all VOCs reported in the groundwater samples collected at Site 21 were chlorinated solvents and their degradation products. The highest concentrations of VOCs in the shallow groundwater zone (the A Zone) were reported in samples collected near the suspected source area south of Building 3 at depths ranging from 7 to 10 feet below ground surface. In addition, VOCs were reported in samples collected downgradient from the suspected source area. This VOC groundwater plume extended to the tidal mixing zone that begins approximately 75 feet inland from San Francisco Bay.

An EPA screening model, “**BIOCHLOR**,” was used to simulate the migration of VOCs in groundwater at Site 21. BIOCHLOR results suggested that the lateral extent of the VOC groundwater plume was neither increasing nor decreasing, indicating that the VOC groundwater plume was stable. Fate and transport modeling of VOCs using BIOCHLOR indicated the VOC groundwater plume at Site 21 reached steady-state conditions by 2002 and would remain at steady-state conditions for the duration of a 100-year simulation.

SUMMARY OF SITE RISKS

As part of the remedial investigation, a quantitative baseline **human health risk assessment (HHRA)** was completed to assess the potential adverse human health effects from exposure to chemicals at the site. The HHRA for Site 21 is summarized in Table 1.

Table 1. Cancer Risks and Noncancer Hazards from Groundwater

| Receptor | Exposure Point / Exposure Pathway | Chemicals ^a | Chemical-Specific Cancer Risk ^b | Chemical-Specific Noncancer Hazard ^c |
|---------------------------------------|--|------------------------|--|---|
| Current Commercial/ Industrial Worker | Building 3 Annex / Inhalation (groundwater vapor intrusion) | PCE | 1.8 x 10 ⁻⁶ | <1 |
| Current Commercial/ Industrial Worker | Building 111 / Inhalation (groundwater vapor intrusion) | PCE | 3.2 x 10 ⁻⁶ | <1 |
| | | TCE | 1.6 x 10 ⁻⁶ | |
| | | VC | 1.6 x 10 ⁻⁶ | |
| Future Commercial/ Industrial Worker | Hypothetical building over plume / Inhalation (groundwater vapor intrusion) | PCE | 4.6 x 10 ⁻⁶ | <1 |
| | | TCE | 2.3 x 10 ⁻⁶ | |
| | | VC | 2.4 x 10 ⁻⁶ | |
| Future Construction Worker | Construction trench / Dermal (groundwater accumulation in construction trench) | PCE | 7.4 x 10 ⁻⁶ | <1 |
| Hypothetical Future Resident | Hypothetical building over plume / Inhalation (groundwater vapor intrusion) | PCE | 1.4 x 10 ⁻⁴ | <1 |
| | | TCE | 6.8 x 10 ⁻⁵ | <1 |
| | | VC | 1.0 x 10 ⁻⁴ | 23 |

^a Chemicals are defined in the glossary.

^b Risk from cancer is expressed as a probability such as 1 in 1,000,000 (also expressed as 1 x 10⁻⁶). This means that one person in a population of 1,000,000 is more likely to develop cancer over his or her lifetime.

^c Noncancer risk is expressed as a hazard index. A hazard index value of 1 or less is considered protective of human health.

Risks to ecological receptors, including birds and animals likely to be found at the site, were evaluated in the *Final Screening-Level Ecological Risk Assessment for Sites 6, 12, 21, 24, 30, 31, 32 and 33*, March 2007.

Human Health Risk Assessment

The HHRA considered the existing and planned future use of Site 21, which involves the following potential **receptors**: current and future commercial or industrial workers, and future construction workers. Commercial, industrial, and construction workers are a conservative and quantifiable surrogate receptor used in the HHRA evaluation and RAO development. The HHRA also considered alternate site uses, including recreational and hypothetical residential uses. In 2007, the Navy made a risk management decision for Site 21 that, for nonresidential receptors, COCs would be identified as those chemicals that present an excess lifetime cancer risk greater than 1×10^{-5} or chemical-specific incremental **hazard index** greater than 1. This risk level is within the **risk management range** of 10^{-4} to 10^{-6} established by the EPA as a guideline for risk management decisions. That is, 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. This risk management decision is appropriate for Site 21 based on current and future site conditions.

Estimated excess cancer risk for commercial/industrial workers and future construction workers was below the risk management level. Estimated excess cancer risk for a future recreational user also does not pose an **unacceptable risk** because future recreational users are assumed to occupy Site 21 for less time than commercial/industrial workers. Estimated excess cancer risk for a hypothetical future residential user poses an unacceptable risk.

Noncancer hazards (the likelihoods of illness or injury other than cancer) were also evaluated for commercial/industrial workers and future construction workers. The noncancer hazards did not exceed the level that EPA considers safe. The noncancer hazards for a hypothetical future residential user exceed the level EPA considers safe.

Ecological Risk Assessment

A Tier 1 **screening-level ecological risk assessment (SLERA)** 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 SLERA did not identify any ecological resources at Treasure Island that need 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 Francisco Bay were evaluated for chemicals detected in groundwater at the site as part of the Site 21 RI, in 2007. This evaluation determined that the groundwater did not pose a potential risk to the marine receptors.

TREATABILITY STUDY

The Navy conducted a treatability study between August 2005 and February 2006 to identify the best way to clean up the VOCs at Site 21. The treatability study evaluated biological treatment as a method of cleanup. The biological treatment involves injecting microscopic organisms and substrates, such as lactate, into the area of groundwater contamination. The organisms degrade the VOCs into non-toxic byproducts. Based on the success of the initial treatability study, the treatability study was expanded in late 2008 to further evaluate the biological treatment technology. That treatability study is complete; however, additional groundwater and soil gas samples are being collected to evaluate how much contamination remains at the site.

REMEDIAL ACTION OBJECTIVES

Although groundwater conditions at Site 21 do not pose an unacceptable risk for current and anticipated future receptors, the ongoing treatability study at the site caused fluctuations in VOC concentrations as degradation of VOCs was occurring. Therefore, the Navy developed **remedial action objectives (RAO)** and remedial goals for VOCs in groundwater to ensure that post-treatability study groundwater concentrations are protective of current and future commercial or industrial workers, and future construction workers. The RAOs are also protective of recreational users because future recreational users are assumed to occupy Site 21 for less time than commercial/industrial workers. Additionally, the Navy developed risk-based groundwater concentrations for COCs which would be protective of human health if Site 21 would be used as a residential area instead of a commercial and recreational area.

These concentrations were derived for the purposes of evaluating the cost of remediation that would allow for unrestricted use.

Remedial action objectives are developed to identify and screen remedial action alternatives that protect human health and the environment and are consistent with reasonably anticipated land use.

Based on the potential for receptors to be exposed to VOC-contaminated groundwater and/or VOC inhalation via vapor intrusion, the following RAOs were developed for Site 21:

- Prevent exposure of future commercial/industrial workers through inhalation of VOCs in groundwater that migrate through the subsurface to indoor air (vapor intrusion) from groundwater that contains VOCs at concentrations above remedial goals.
- Prevent exposure of future construction workers through dermal contact with and inhalation of VOCs in groundwater that contains VOCs at concentrations above remedial goals in a construction trench.

Remedial goals for groundwater at Site 21 (Table 2) were selected by chemical, based on a comparison of the concentration calculated in the risk assessment that would correspond to a cancer risk of 10^{-5} or a noncancer hazard index of 1.

Table 2. Risk-Based Groundwater Concentrations and Remedial Goals

| COC ¹ | Remedial Goal ² (µg/L) | Residential Risk-Based Concentration ³ (µg/L) |
|------------------|-----------------------------------|--|
| VC | 165 | 2 |
| Cis-1,2-DCE | 712 | 630 |
| PCE | 86 | 5 |
| TCE | 56 | 11.5 |
| Trans-1,2-DCE | 1,420 | 170 |

1. Chemicals of Concern.
2. Protective of future commercial/industrial users
3. Protective of any future users

SUMMARY OF REMEDIAL ALTERNATIVES

The FSS identified three alternative actions that can prevent or minimize human exposure to contaminants at levels that may result in a future health concern.

- Alternative 1: No action
- Alternative 2: Institutional controls
- Alternative 3: Active remediation using enhanced anaerobic in situ bioremediation

Alternative 2 is identified in this proposed plan as the preferred alternative. Each of the alternatives and their estimated costs are described in Table 3.

Table 3. Remedial Alternatives for Groundwater at Site 21

| Remedial Alternative | Cost* | Components of Remedial Alternative |
|---|-------------|---|
| 1: No Action | \$0 | No actions or costs; this alternative is required by CERCLA as a baseline for comparison with other alternatives. Under this alternative, no further remediation would be performed. |
| 2: Institutional Controls | \$567,000 | Establish restrictions on the land use at Site 21 in the form of deed restrictions and land use covenants. Restrictions would prevent exposure to VOCs by prohibiting future residential reuse, unless appropriate engineering controls are implemented, and prohibiting groundwater extraction (dewatering exempted). |
| 3: Enhanced Anaerobic In Situ Bioremediation (ISB) | \$2,323,000 | The enhanced ISB treatment system would consist of 71 injection point wells and would be installed within the VOC plume to anaerobically biodegrade PCE and TCE in groundwater at Site 21. Two rounds of groundwater treatment would be anticipated for remediation of the VOC plume. Approximately 7,700 pounds of substrate would be applied to the aquifer during two rounds of ISB. Alternative 3 is included to meet the Department of Defense requirement of evaluating an alternative that would result in unrestricted (hypothetical future residential) use of the site. |

* Cost estimates were derived in the FFS for comparative analysis of the alternatives.

EVALUATION OF ALTERNATIVES

The remedial action alternatives evaluated represent a range of distinct environmental restoration strategies that fulfill the RAOs associated with VOC contamination in groundwater at Site 21. The alternatives were evaluated against the nine EPA criteria listed in Figure 3.

These criteria are used to evaluate the cleanup alternatives proposed 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 21 will then be made by the Navy after receiving and evaluating the public input.

1. OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

All alternatives protect human health and the environment under the current use of Site 21. However, only Alternatives 2 and 3 are protective of human health under future and hypothetical future land-use scenarios.

2. COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Applicable or Relevant and Appropriate Requirements (ARAR) are federal or more stringent State environmental standards, requirements, criteria, or limitations that need to be attained by final remedial actions. There are no ARARs applicable to Alternative 1. Alternatives 2 and 3 would meet the project ARARs.

3. LONG-TERM EFFECTIVENESS AND PERMANENCE

Any residual risks remaining after implementation of Alternative 1 would be the same as current conditions. Alternative 2 would provide an adequate level of long-term effectiveness and permanence through ICs. Alternative 3 would provide the highest level of long-term effectiveness and permanence through remediation for unrestricted use.

4. REDUCTION OF TOXICITY, MOBILITY, AND VOLUME

Alternatives 1 and 2 would not reduce toxicity, mobility, or volume of contamination at Site 21. Alternative 3 would provide the highest level of reduction in toxicity, mobility, and volume of VOCs through treatment.

5. SHORT-TERM EFFECTIVENESS

Alternatives 1 and 2 will not pose a risk to the community or the environment in the short term, since no active treatment will be conducted. Since Alternative 3 has some construction, it has the least short-term effectiveness.

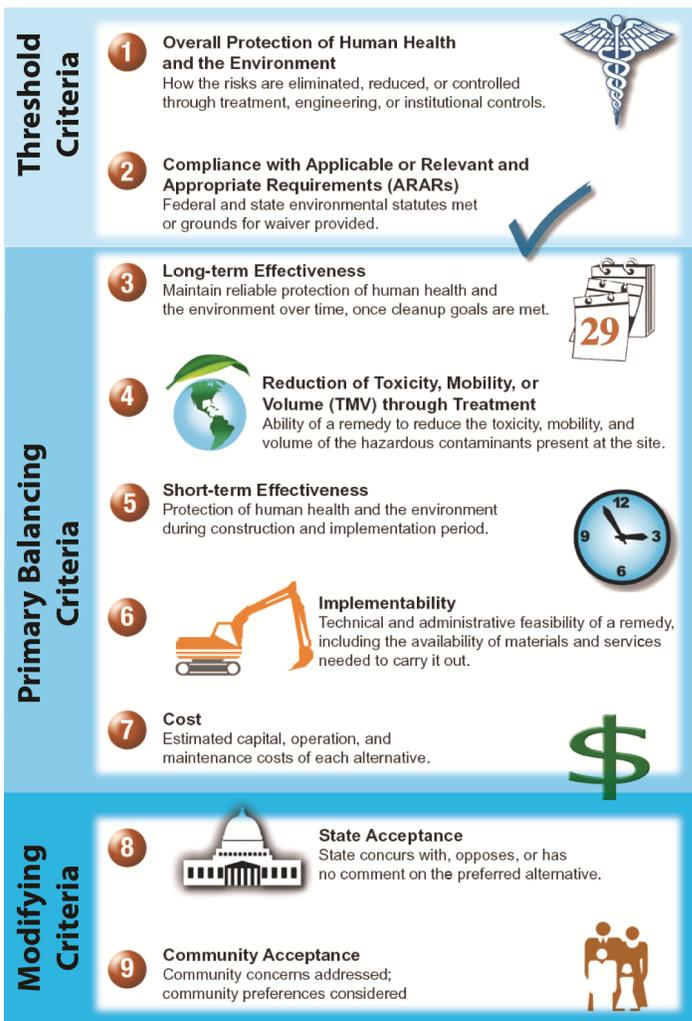


Figure 3. EPA Comparison Criteria

6. IMPLEMENTABILITY

All of the alternatives are technically feasible and are implementable. However, Alternative 3 would be the most difficult to implement because it would require the most infrastructure and time to complete remediation.

7. COST

Alternative 2 is more cost effective than Alternative 3 because acceptable protection of human health and the environment can be achieved at a lower cost.

8. REGULATORY ACCEPTANCE

Regulatory acceptance of the Navy's preferred alternative will be addressed through meetings, responses to comments, and approval on the Proposed Plan/Draft RAP, and **Record of Decision (ROD)/Final 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/Final RAP for Site 21.

SUMMARY OF THE PREFERRED ALTERNATIVE

The Navy's preferred alternative is Alternative 2, institutional controls. Alternative 2 would prevent exposure to VOCs in groundwater at Site 21 in both the short term and long term, and would allow Site 21 to be redeveloped and used in a manner consistent with the approved local reuse plan, subject to enforcement of appropriate controls for protection of future commercial/industrial workers and/or residential receptors. Alternative 2 would provide the most cost-effective remedial alternative that is protective of human health (see Table 4). Alternative 1 was rejected because it would not be protective of potential human receptors at the site. Alternative 3 was rejected because the higher costs associated with groundwater remediation are not warranted since the VOC plume is not migrating, does not pose a threat to ecological receptors, and does not pose an unacceptable risk to human receptors under the anticipated reuse. Alternative 3 was also rejected because this alternative would require approximately 6 years to complete. Alternative 2 would require approximately 1 year for implementation, followed by long-term site monitoring.

The preferred remedial alternative requires the Navy to implement institutional controls, in the form of a land use covenant (LUC). Future landowners may be permitted to develop Site 21 to residential uses by implementing engineering controls, and performing operation and maintenance on those controls, to the extent necessary, to prevent exposure of future residents from inhalation of VOCs in groundwater through vapor intrusion to indoor air. Prior to residential redevelopment, a vapor intrusion mitigation work plan will be prepared by future landowners for approval by the regulatory agencies, that includes further details of the engineering controls and measures to protect future residents onsite. Alternatively, if in the future contaminant concentrations are shown to have been successfully reduced to the point where land-use controls are not needed, a future land owner may remove or modify the LUC with approval of the DTSC.

During preparation of the FFS report and this proposed plan, the Navy conducted a groundwater treatment treatability study using the Alternative 3 technology. The Navy is currently collecting and analyzing post-treatability study groundwater samples to determine if the groundwater treatment technology successfully reduced groundwater contaminant concentrations at Site 21.

Table 4: Comparative Analysis of Alternatives

| Remedial Alternative | Overall Protection of Human Health and Environment | Compliance with ARARs | Long-Term Effectiveness/Permanence | Reduction of Toxicity, Mobility, or Volume through Treatment | Short-Term Effectiveness | Implement-ability | Cost* (\$M) |
|--|--|-----------------------|------------------------------------|--|--------------------------|-------------------|-------------|
| 1: No Action | ○ | NA | ○ | ○ | ○ | ● | \$0 |
| 2: Institutional Controls (Preferred Alternative) | ● | ● | ● | ○ | ● | ● | \$567,000 |
| 3: Active Remediation Using Enhanced Anaerobic In Situ Bioremediation | ● | ● | ● | ● | ◐ | ◐ | \$2,323,000 |

Notes:

○ = Low ◐ = Medium ● = High

* = Cost evaluation is based on net present value (NPV). A lower cost receives a high rating because it is more cost effective. The State of California and community acceptance is to be evaluated after public comment period.

NA = There are no ARARs applicable to Alternative 1.

MULTI-AGENCY PARTICIPATION

The BRAC Cleanup Team (BCT) is composed of the Navy, DTSC, Water Board, and EPA. The primary goals of the BCT are to:

- Protect human health and the environment
- Coordinate environmental investigations
- Expedite the environmental cleanup at NAVSTA TI

The BCT reviewed all major documents and activities associated with Site 21 including the Focused Feasibility Study. Based on these reviews and discussions on key documents, the BCT supports the Navy's recommendation for the preferred alternative at Site 21.

REGULATORY SUMMARY

California Health and Safety Code

This document meets applicable requirements of the HSC section 25356.1 for hazardous substance release sites. The HSC requires preparation of a RAP for sites that are not listed on the **National Priorities List**, 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 is the HSC equivalent of the ROD for this site.

California Environmental Quality Act (CEQA)

DTSC has prepared a Notice of Exemption having determined that the proposed project for Institutional Controls has no potential for a significant impact on the environment. In the event that an active VOC treatment system is needed for residential use, a new CEQA evaluation of the impacts from the treatment system will be undertaken by DTSC at that time. The draft Notice of Exemption is 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 Naval Station Treasure Island, 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 it so chooses.

COMMUNITY PARTICIPATION

Community involvement is essential to selecting remedial alternatives.

PUBLIC COMMENT PERIOD

The 30-day public comment period for the Proposed Plan/Draft RAP is October 14 through November 14, 2011.

Submit Comments

There are two ways to provide comments during this period:

- Offer oral comments during the public meeting
- Provide written comments by mail or e-mail (no later than November 14, 2011)



Public Meeting

The public meeting will be held on November 2, 2011 at Casa de la Vista, Building 271, Treasure Island, California, from 6:30 pm to 8:30 pm. The public can discuss the Proposed Plan/Draft RAP with representatives from the Navy and DTSC.

Or you can send comments to:

James Sullivan BRAC Environmental Coordinator
Department of the Navy
BRAC Program Management Office West
1455 Frazee Road, Suite 900
San Diego, CA 92108-4310
Phone (619) 532-0966
james.b.sullivan2@navy.mil



Input will be collected after the alternatives are presented to the public, and a final decision will be made after regulatory agency and community input on the Proposed Plan/Draft RAP has been reviewed. The Navy/DTSC will then issue a ROD/Final RAP, formally selecting the final remedy.

THE NEXT STEP

After the comment period has ended, the Navy and DTSC will consider the comments received on this Proposed Plan/Draft RAP before making a final decision for Site 21. The final decision will be documented in a ROD/Final RAP, which will include the responses to all comments received on this Proposed Plan/Draft RAP. A public notice will be placed in the *San Francisco Chronicle* announcing when the Site 21 ROD/Final RAP will become available to the public in the information repositories listed below.

INFORMATION REPOSITORIES

Two information repositories and the administrative record provide public access to technical reports and other IR Program information that support this Proposed Plan/Draft RAP.

San Francisco Public Library

Government Publications Section
100 Larkin Street
San Francisco, California 94102
(415) 557-4400

Administrative Record File

ATTN: Diane Silva, Command Records Manager
NAVFAC Southwest
1220 Pacific Highway
Code EV33, NSDB Building 3519
San Diego, California 92132
(619) 556-1280
diane.silva@navy.mil

Navy BRAC Caretaker Support Office

1 Avenue of the Palms, Suite 161
Treasure Island
San Francisco, California 94130
(415) 743-4729

Administrative hours are 8 a.m. to 5 p.m. Monday through Friday. Documents may not be removed from the facility; however, they may be photocopied. Please contact Ms. Silva to make an appointment.

Site 21 documents are available in the information repositories and in the administrative record locations listed above. Other information such as meeting minutes and fact sheets related to Site 21 can be found on the Navy's website at www.bracpmo.navy.mil. Select "Prior BRAC," then "Former Naval Station Treasure Island."

OPPORTUNITIES FOR COMMUNITY INVOLVEMENT

Public Meeting

November 2, 2011 / 6:30 to 8:30 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 for Site 21. Navy representatives will provide information on the environmental investigations conducted for Site 21. You will have an opportunity to ask questions and formally comment on the Navy's preferred remedial alternative for Site 21 as presented in this Proposed Plan/Draft RAP.

Public Comment Period

October 14 through November 14, 2011

We encourage you to comment on this Proposed Plan/Draft RAP during the 30-day public comment period. You may provide comments on the Proposed Plan/Draft RAP orally at the public meeting or submit your comments in writing at 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 November 14, 2011. 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 21.

GLOSSARY OF TECHNICAL TERMS

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

BIOCHLOR – An EPA screening model that simulates remediation by natural attenuation of dissolved solvents at chlorinated solvent release sites. <http://www.epa.gov/ada/csmos/models/biochlor.html>

Chemical of Concern – Chemical identified as posing a potential risk during a site-specific human-health or ecological risk assessment.

Cis-1,2 DCE – Dichloroethene isomer.

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 those sites to protect human health and the environment.

Focused 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 – A calculated value used to represent a potential noncancer health effect. A hazard index value of 1 or less is considered protective of human health.

Human Health Risk Assessment (HHRA) – An analysis of the potential negative human health effects 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 Oil and Hazardous Substances Pollution Contingency Plan – Federal regulations that implement CERCLA.

National Priorities 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.

PCE – Perchloroethylene.

Proposed Plan – A document that reviews the cleanup alternatives, summarizes the Navy's recommended or preferred cleanup actions, explains the reasons for recommending them, and solicits comments from the community. Under California law, a Draft Remedial Action Plan is equivalent to the Proposed Plan.

Receptor – Any organism (human, animal, or plant) 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 California law, a Final Remedial Action Plan is equivalent to the ROD

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 prepared for public review and comment that outlines a specific program leading to the remediation of a contaminated site. The RAP is required under California Health and Safety Code Section 25356.1 for sites that are not listed on the NPL.

Remedial Investigation – An investigation to identify the 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 noncarcinogenic. Risk from cancer is expressed as a probability such as 1 in 1,000,000 (also expressed as 1×10^{-6}). This means that one person in a population of 1,000,000 is expected to develop cancer over his or her lifetime. Noncancer risk is expressed as a hazard index, as defined above.

Risk management range – The risk management range, established by EPA, is a guideline for making risk management decisions. The range is considered to represent an excess lifetime cancer risk between 1 in 10,000 and 1 in 1,000,000 (1×10^{-4} and 1×10^{-6}).

Screening-level ecological risk assessment (SLERA) – An assessment of ecological risk based on published screening criteria.

TCE – Trichloroethylene.

Trans-1,2 DCE – Dichloroethene isomer.

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 that a remedial action must be taken. An excess lifetime cancer risk above 1 in 10,000 (1×10^{-4}) is considered unacceptable and a risk between 1 in 10,000 and 1 in 1,000,000 (1×10^{-4} and 1×10^{-6}) may be unacceptable depending on site specific factors.

VC – Vinyl chloride.

VOC – Volatile Organic Compound.

PROJECT CONTACTS

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**Proposed Plan/ Draft Remedial Action Plan
for Installation Restoration Site 21
Former Naval Station Treasure Island,
San Francisco, California**



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