PROPOSED PLAN

MARSH CRUST AND SHALLOW GROUNDWATER AT ALAMEDA FACILITY/ALAMEDA ANNEX AND MARSH CRUST AND FORMER SUBTIDAL AREA AT ALAMEDA POINT ALAMEDA, CALIFORNIA

U.S. DEPARTMENT OF THE NAVY, ENGINEERING FIELD DIVISION SOUTHWEST, SAN DIEGO, CALIFORNIA · JUNE 2000

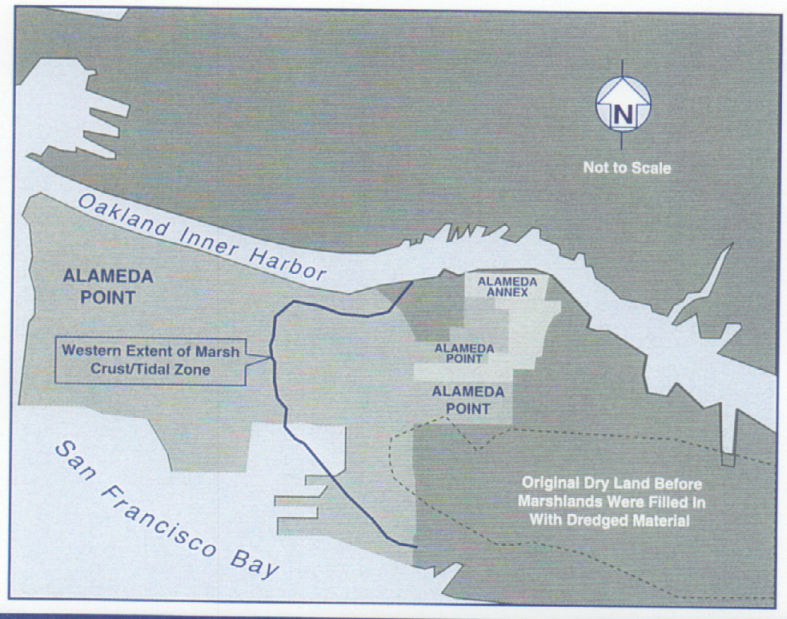
NAVY PRESENTS THIS PROPOSED PLAN

The U.S. Navy invites you to comment on this proposed plan for the marsh crust and shallow groundwater at Fleet and Industrial Supply Center Oakland Alameda Facility/Alameda Annex and for the marsh crust and former subtidal area at Alameda Point (formerly Naval Air Station Alameda), Alameda, California. The Navy, together with the California Department of Toxic Substances Control (DTSC) and U.S. Environmental Protection Agency (U.S. EPA), agree that the areas in the current condition do not pose a risk to human health because the marsh crust is deep underground and the groundwater poses no risk. However, they have decided to restrict certain activities in these areas to prevent any possible human exposure to contaminants due to construction in the future. These proposed actions, called alternatives, are described in detail on page 4. The Navy's preferred alternative includes land use covenants (ordinances and agreements) that would control soil excavation and use of groundwater.

This proposed plan describes the results of environmental investigations; the cleanup alternatives evaluated for the marsh crust, shallow groundwater, and former subtidal areas; the Navy's preferred alternative to manage the sites; and opportunities for public involvement in the cleanup program. The Navy's preferred alternative for these areas is discussed in detail in the draft **remedial action plan (RAP)/record of decision (ROD)***, available at the information repositories at the Alameda Public Library and at Alameda Point in the Main Office Building. (See page 6.)

The Navy encourages you to comment on this proposed plan. The public comment period begins June 20, 2000, and ends July 20, 2000. After reviewing all public comments, the Navy, U.S. EPA, and DTSC will select a final alternative that protects human health and the environment and will announce the decision in a final RAP/ROD.

The Navy developed this proposed plan in coordination with U.S. EPA, DTSC, and the California Regional Water Quality Control Board (RWQCB). The Navy's environmental cleanup complies with the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, the **California Hazardous Substances Account Act (HSAA)** (Division 20, Ch. 6.8 of the California Health & Safety Code), and all other federal and state laws that govern environmental cleanups. Detailed information on the environmental investigations, risk assessments, and feasibility studies is presented in the **remedial investigation (RI)** (January 1996) and the **feasibility study (FS)** reports (January 2000). As required by California Health and Safety Code 25356.1, a draft RAP has been prepared and is available for public comment. All documents related to the project are available at the information repository.



** Items in bold are defined in Glossary, page 6.*

PUBLIC MEETING

JUNE 29, 7-9 P.M.
Alameda Point
950 West Mall Square
Building 1, Room 140
Tel: 619-532-0965

THE NAVY INVITES YOUR INPUT!

The Navy, in consultation with U.S. EPA and DTSC, may modify the preferred alternative or select another cleanup alternative based on public comments or new information. Public participation is a vital part of the cleanup process and will influence the cleanup method ultimately selected. Therefore, the public is encouraged to review and comment on all the alternatives by July 20, 2000.

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SITE BACKGROUND

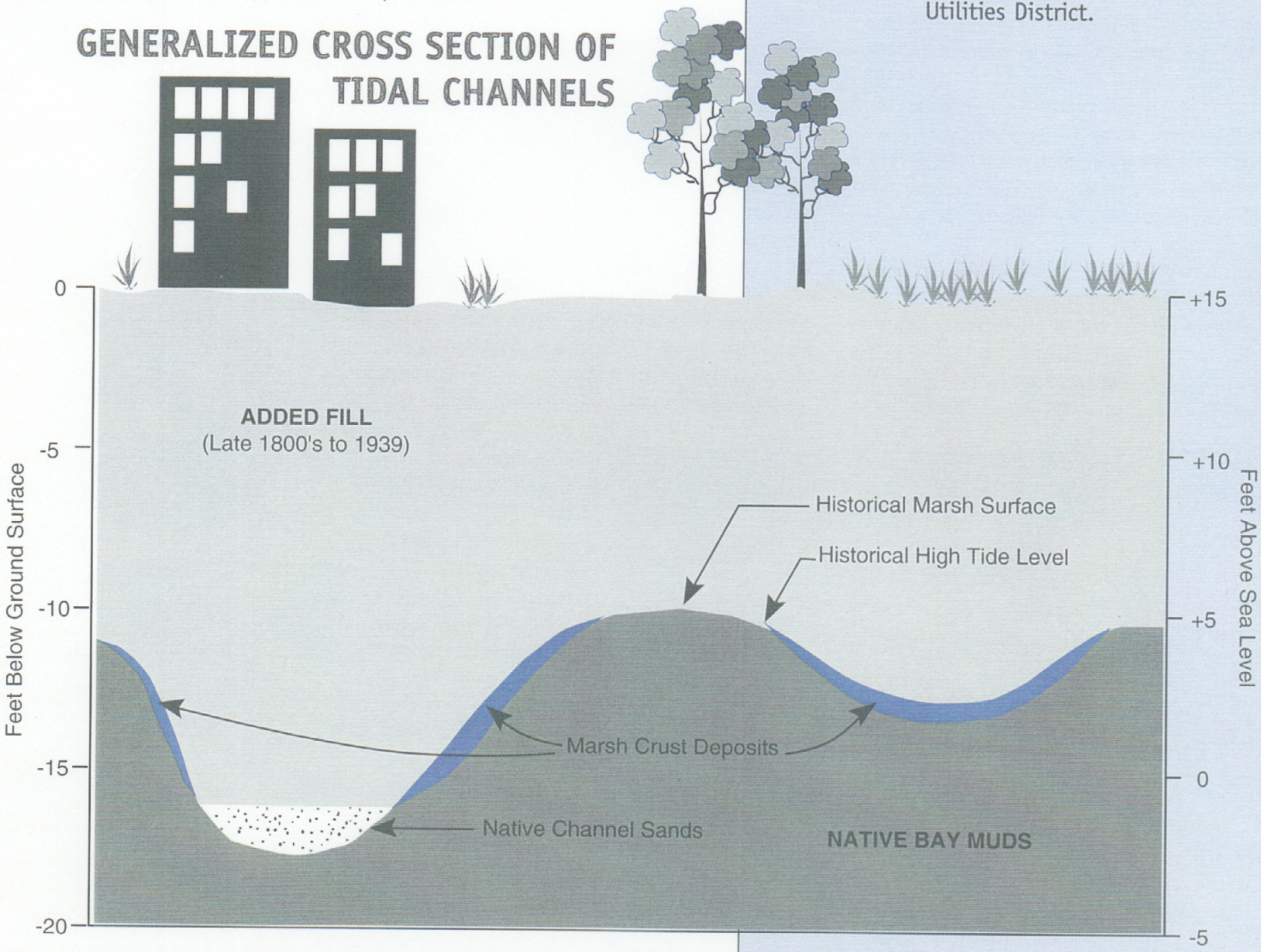
This proposed plan addresses two adjoining facilities in Alameda, California: Alameda Facility/Alameda Annex and Alameda Point. The history of each facility is described below.

Alameda Facility/Alameda Annex covers about 143 acres along the southern shore of the Oakland Inner Harbor, southeast of the Port of Oakland and east of Alameda Point. Before 1920, Alameda Facility/ Alameda Annex and surrounding areas were undeveloped marshlands and tidal flats along San Francisco Bay. Regional sand and clay were used to fill the marshlands and tidal flats. The area was a commercial airport from 1920 to 1941; at that time, the University of California sold the property to the U.S. Government, and the U.S. Army used the property as a depot. The Navy obtained the southern portion of the area in 1946 and the northern portion in 1966 and used the property as a supply center. The base was closed in September 1998 as part of the federal **Base Realignment and Closure (BRAC)** Program.

Alameda Point occupies 2,675 acres and is adjacent to Alameda Facility/ Alameda Annex on the western end of Alameda Island. Filling existing tidelands, marshlands, and sloughs initially for use as farmland, and later for railroads, created Alameda Point. In 1936, the Navy acquired title to the land from the U.S. Army and began building the naval station in response to the military buildup before World War II. The installation was identified for closure under the BRAC Program in September 1993, and ceased operation in April 1997.

FROM WHERE DOES DRINKING WATER COME?

RWQCB has decided that shallow groundwater at Alameda Facility/Alameda Annex cannot be used as a drinking water source because it contains high levels of salt. Current and future residents and workers receive drinking water from the East Bay Municipal Utilities District.



SITE DESCRIPTION AND ENVIRONMENTAL CONDITIONS

Marsh Crust and Former Subtidal Area. Fill materials were deposited on the tidal marshland to construct Alameda Facility/Alameda Annex. Contamination that remained from industrial operations that ended before the Navy began using the facility became trapped under the fill material. This trapped material is known as the marsh crust, a thin discontinuous layer of oil byproducts and sludge deposited in the tidal marshland. Samples of the marsh crust indicate high concentrations of **polynuclear aromatic hydrocarbons (PAH)** and **total petroleum hydrocarbons (TPH).**

The history of the adjacent Alameda Point is similar. Artificial fill was deposited over a subtidal area and tidal marshland to create usable land. The Navy has identified the same oil byproducts and sludge, namely PAH and TPH below ground, in Alameda Point's tidal marshland and former subtidal area.

The PAH and TPH associated with the marsh crust are, on average, 15 feet below the surface of the ground at Alameda Facility/Alameda Annex and, on average, 8 feet below ground at Alameda Point—so deep that people would not be exposed to the contaminants under existing conditions. However, exposure to the contaminants is possible if soils at these depths are brought to the surface during future construction.

Shallow Groundwater at Alameda Facility/Alameda Annex. Organic and inorganic compounds, primarily petroleum-related, have been detected in samples of shallow groundwater at Alameda Facility/ Alameda Annex. Samples of deep groundwater contained no contaminants at levels of concern, and tests indicate that the shallow and deep groundwater aquifers are not connected.

Shallow groundwater does not pose a risk according to U.S. EPA's standards for health protection. The groundwater does not meet RWQCB drinking water standards because of high levels of salt in the water. Therefore, shallow groundwater will not be used for drinking water in the future. See the detailed discussion of potential risks in *What is a Human Health Risk Assessment?*

THE ENVIRONMENTAL CLEANUP PROGRAM

Environmental investigations and cleanup have been under way at Alameda Facility/Alameda Annex and Alameda Point since the mid-1980s. The Navy, in close coordination with U.S. EPA, DTSC, and RWQCB, carries out the cleanup program, called the installation restoration program (IRP). The IRP identifies and cleans up sites that may have been contaminated by past Naval industrial operations. In addition to the marsh crust, subtidal area, and the shallow groundwater, the Navy is preparing cleanup proposals for other sites at the facilities that will be presented to the public separately. Should you wish to review documents describing the sites, visit the information repository.

WHAT IS A HUMAN HEALTH RISK ASSESSMENT?

U.S. EPA has established a target range of risk levels to estimate potential human health risks caused by exposure to contaminants. Risks are assessed based on the types of contaminants present at a site and possible exposure pathways. The Navy evaluated possible risks under three future reuse scenarios: residential users (both adults and children), site workers, and maintenance or construction workers. Risk calculations were based on conservative assumptions that most protect human health and the environment. ("Conservative" means the assumption will tend to overestimate risk or lead to a more protective cleanup proposal.) Recommended cleanup actions are based on risks associated with residential use — that is, an individual living at the site continually for 30 years.

Exposure pathways are ways people could come into contact with contaminants. The following pathways were evaluated at Alameda Facility/Alameda Annex:

- The possibility that contaminants in groundwater will vaporize, move up through the soil, and contaminate either outside or indoor air.
- The possibility that people will use the shallow groundwater for landscaping or car washing and will be exposed to contaminants.

Each of these exposure pathways was evaluated in risk assessments, which concluded that exposure does not pose a risk to human health.

Direct contact with groundwater is not considered a possible exposure pathway since groundwater is not currently used and no drinking water or irrigation wells are located at the site. Furthermore, shallow groundwater below the facility is not currently designated a source of drinking water, nor is it anticipated to be in the future.

Currently, no exposure pathways exist to the marsh crust and former subtidal area. However, the potential that future construction may raise contaminated soil to the surface was evaluated. The Navy, U.S. EPA, DTSC, and the City of Alameda agreed to propose several protective measures, as reflected in the Navy's preferred alternative (Alternative 2) to be protective for the future construction scenario.

SUMMARY OF CLEANUP ALTERNATIVES

This section summarizes the alternatives for addressing (1) the marsh crust and former subtidal area at the Alameda Facility/Alameda Annex and Alameda Point, and (2) the shallow groundwater at Alameda Facility/ Alameda Annex. ***The Navy's preferred alternative is Alternative 2 (Land Use Controls and Groundwater Monitoring).*** For a more detailed description of the alternatives including costs, review the RAP/ROD at the local information repository.

ALTERNATIVES FOR MARSH CRUST AND FORMER SUBTIDAL AREA

Because they are similar, the marsh crust and former subtidal area are addressed together. The feasibility study considered four alternatives.

Alternative 1—No Action. The Navy is legally required to consider the no-action alternative. It provides a baseline for evaluating other alternatives. This alternative examines whether cleanup goals and health-based standards would be met if the contamination were left in place in the marsh crust and subtitle area.

Alternative 2—Land Use Controls. Alternative 2 is the Navy's preferred alternative to address the marsh crust and subtidal area. Under this alternative, DTSC and the City of Alameda would enter into a land use covenant, and the Navy and the City of Alameda would also impose deed restrictions to ensure that controls are enforced in the future. Essentially, land use controls and deed restrictions would require that proper procedures are followed to excavate soil to depths that would reach the marsh crust and former subtidal area. These procedures, which are contained in the City of Alameda ordinance, would prevent workers from exposure to contaminants below ground and that any soil brought to the surface is handled and disposed of in a way that fully protects public health. The Navy would review the site after 5 years to ensure compliance with the land use controls, as required by CERCLA. The site could be available for residential or industrial use after Alternative 2 is implemented.

Alternative 3—Excavation and Off-Site Disposal. This alternative involves excavating and transporting contaminated soil to licensed off-site disposal facilities. This alternative involves excavating the entire surface area (143 acres) of Alameda Facility/ Alameda Annex and 548 acres of Alameda Point. The excavated soil would be replaced with clean fill to restore the areas. Although the site would be available for residential or industrial use after it was excavated and restored, Alternative 3 could create significant short-term risks to the community, site workers, and the environment because it would involve extensive excavation, stockpiling, and transportation of the contaminated material. This alternative is extremely expensive. Furthermore, Alternative 3 would unnecessarily delay productive use of the property for at least four years.

Alternative 4—Excavation and On-Site Treatment with Thermal Desorption. This alternative involves excavating the contaminated marsh crust and subtidal area, on-site treatment of contaminated soil using a heating process, and restoring excavated areas with treated soil. This alternative requires excavating the entire surface area (143 acres) of Alameda Facility/Alameda Annex and 548 acres of Alameda Point. Although Alternative 4 would make the area available for residential or industrial uses after the soil is treated and replaced, it could create significant short-term risks to the community, site workers, and the environment because it would involve extensive excavation, stockpiling, and treatment of the contaminated material. Similar to Alternative 3, this alternative is extremely expensive.

ALTERNATIVES FOR SHALLOW GROUNDWATER

Two cleanup alternatives, described below, were evaluated for the shallow groundwater that underlies Alameda Facility/ Alameda Annex.

Alternative 1—No Action. As noted above, the no action alternative provides the baseline used to evaluate other alternatives. It basically analyzes the existing condition of the shallow groundwater. No cleanup would occur.

Alternative 2—Land Use Controls and Groundwater Monitoring. Alternative 2 is the Navy's preferred alternative. Under Alternative 2, DTSC and the City of Alameda would sign a land use covenant that prohibits drilling water wells and using the shallow groundwater except for limited purposes (irrigation and emergency use). The Navy and the City of Alameda would also impose deed restrictions to ensure that controls are enforced. The covenant would also control how groundwater is disposed of should it be brought to the surface during excavation or sampling. As required by CERCLA, the Navy would monitor groundwater for a limited period (up to 5 years) to make sure that contaminant levels are decreasing and that contaminants are not moving off Alameda Facility/Alameda Annex. The Navy will review the alternative after 5 years to confirm that the land use controls are still effective. Under this alternative, land use controls would restrict use of the shallow groundwater without the required permits, and drinking shallow groundwater would be prohibited. The City of Alameda and State of California would enforce existing standards that control well construction.

EVALUATING ALTERNATIVES: NINE CRITERIA

The alternatives were evaluated using nine criteria to select the preferred alternative:

OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

Evaluates whether a remedy adequately protects and describes how risks posed by each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

COMPLIANCE WITH ARARS

Addresses whether a remedy will meet all applicable or relevant and appropriate federal and state environmental statutes and requirements (known as ARARs) or whether it provides grounds for invoking a waiver.

LONG-TERM EFFECTIVENESS AND PERMANENCE

Refers to the ability of a remedy to reliably protect human health and the environment over time after cleanup goals have been met.

REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT

Addresses the statuary preference for alternatives that employ treatment technologies for permanent and significant reduction.

SHORT-TERM EFFECTIVENESS

Addresses time needed to achieve protection and any adverse impacts on human health and the environment that may occur during construction and implementation period until cleanup goals are achieved.

IMPLEMENTABILITY

Evaluates the technical and administrative feasibility of a remedy, including the availability of materials and services required.

COST

Includes estimated capital construction, operation and maintenance, and net present-worth costs.

STATE ACCEPTANCE

Indicates whether the state concurs, opposes, or has no comment on the preferred alternative.

COMMUNITY ACCEPTANCE

Considers public comments on the preferred alternative.

HOW WERE ECOLOGICAL RISKS EVALUATED?

An ecological risk assessment (ERA) was conducted to evaluate whether contamination left over from past industrial activities is harming animals that may use the facility. The ERA concluded that the sites pose little or no risk because the habitat is unsuitable and because animals are unlikely to be exposed to groundwater at Alameda Facility/Alameda Annex. Contaminants contained in the marsh crust and subtidal area are too deep to affect plants and animals at Alameda Facility/Alameda Annex and Alameda Point. The ERA also assessed whether shallow groundwater could affect marine life in the Oakland Inner Harbor. The assessment concluded that because of slow groundwater movement and other natural breakdown, contaminants of concern in shallow groundwater would not move beyond the boundaries of Alameda Facility/Alameda Annex at concentrations that would cause adverse impacts to plants, animals, or people.

PUBLIC COMMENT PERIOD AND COMMUNITY MEETING

The Navy continues to conduct an outreach program to involve community members in the environmental cleanup process. The outreach program is designed to (1) inform the community about environmental cleanup, (2) obtain public input on proposed cleanup actions, and (3) ensure that cleanup is compatible with plans for future reuse.

A primary vehicle for community involvement is the **Restoration Advisory Board (RAB)**, established in March 1995. The Alameda Facility/Alameda Annex RAB meets on the second Tuesday of each month from 9:30 to 11:30 a.m., and the Alameda Point RAB meets on the first Tuesday of each month from 6:30 to 9 p.m. Both RAB meetings take place at Alameda Point (950 West Mall Square, Building 1) in the first-floor conference room. Community members are encouraged to attend.

SUBMIT PUBLIC COMMENTS

The Navy invites the public to become involved in the process and is conducting a 30-day public comment period to solicit oral and written comments on the proposed plan and draft RAP/ROD for Alameda Facility/Alameda Annex and Alameda Point. The public comment period will be held from **June 20** through **July 20.** There are two ways to provide comments during the public comment period: in writing and at the public meeting. **Written comments must be postmarked no later than July 20, 2000,** and may be sent to:

Mike McClelland
BRAC Environmental Coordinator
1230 Columbia Street, Suite 1100, San Diego, CA 92101-8517
619-532-0965

Mary Rose Cassa
Dept. of Toxic Substances Control
700 Heinz Ave., Suite 200, Berkeley, CA 94710-2721
510-540-3767

ATTEND A PUBLIC MEETING

The public is encouraged to attend and submit comments during the public meeting on June 29, 2000.

PUBLIC MEETING
JUNE 29, 7-9 P.M.
Alameda Point
950 West Mall Square, Building 1, Room 140

After the public comment period ends, the Navy will review and consider comments before making a decision on the proposed approach for the marsh crust and shallow groundwater at Alameda Facility/Alameda Annex and the marsh crust and former subtidal area at Alameda Point. The Navy's response to public comments will be documented in a responsiveness summary in the final RAP/ROD.

VISIT THE INFORMATION REPOSITORIES

The Navy has established information repositories for documents, fact sheets, and other materials related to the environmental cleanup program at Alameda Point and the Alameda Annex. The information repositories also contain the administrative record, which is the complete legal file of documents that support the ultimate cleanup decision. The Navy encourages the public to visit one of the repositories to gain a more complete understanding of investigations and cleanup activities. The repositories are:

Alameda Public Library
2200 A Central Ave.
Alameda
510-748-4660

Alameda Point
950 West Mall Square
Building 1
Alameda

GLOSSARY

Base Realignment and Closure (BRAC) Program – A program established by Congress under which Department of Defense installations undergo closure, environmental cleanup, and property transfer to other federal agencies or communities for reuse.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Also known as Superfund, CERCLA is the federal law that regulates environmental investigation and cleanup of sites identified as possibly posing a risk to human health or the environment.

Ecological Risk Assessment (ERA) - An evaluation of the potential hazard to plants, animals, and their habitat as a result of exposure to chemicals in the environment is known as an ERA.

Exposure Pathway - The mechanism by which a chemical comes in contact with a living organism.

Feasibility Study (FS) - A study that identifies and evaluates potential cleanup methods based on their effectiveness, availability, and cost. See criteria, page 5.

Hazardous Substances Account Act (HSAA) – California's law that establishes requirements for environmental cleanup.

Human Health Risk Assessment (HHRA) – This risk assessment is an estimate of the potential harmful effects humans may experience as a result of exposure to chemicals.

Installation Restoration Program (IRP) - The Department of Defense's comprehensive program to investigate and clean up environmental contamination at military facilities in full compliance with CERCLA.

Polynuclear aromatic hydrocarbons (PAH) – PAHs are chemical compounds typically present in petroleum base stock and in used oil. They also occur when organic materials burn. Some PAHs (including benzoa[a]pyrene found in marsh crust) are known human carcinogens.

Record of Decision (ROD) and Remedial Action Plan (RAP) – This legal document explains the selected cleanup method to be used. In California, the document is signed by the Navy, U.S. EPA, and DTSC and is a binding agreement regarding how and when site cleanup is conducted. Federal law requires a ROD; California law requires the RAP.

Remedial Investigation (RI) – An RI is a comprehensive study that identifies the types, amounts, and locations of contamination.

Total Petroleum Hydrocarbons (TPH) – TPH includes petroleum-based substances derived from crude oil processing such as motor fuels, jet oils, lubricants, petroleum solvents, and used oils.