



FACT SHEET

Third Five-Year Review of Remedial Actions

Hunters Point Naval Shipyard

San Francisco, California



January 2014

The Five-Year Review of Remedial Actions is an evaluation of environmental remedies implemented at Hunters Point Naval Shipyard (HPNS). It is used to determine whether the remedies remain protective of human health and the environment. This fact sheet explains why the Five-Year Review process is performed, and summarizes the results of the Navy's third base-wide Five-Year Review at HPNS.

HUNTERS POINT NAVAL SHIPYARD HISTORY

HPNS is located in the southeastern portion of the City of San Francisco and is adjacent to San Francisco Bay (Figure 1). Though HPNS is now a closed base, when it was active, it had many uses, including as a commercial dry dock from 1869 until it was purchased by the U.S. Navy in 1939. From 1945 until 1974, HPNS was used for shipbuilding, repair, and maintenance of Navy ships. It was also the site of the Naval Radiological Defense Laboratory, which operated from 1948 through 1969. The former Shipyard was closed in 1974 and remained vacant until 1976, when Triple A Machine Shop, Inc. began a lease of the property that continued until 1986. Subsequently, several buildings have been leased by artists and others.

HPNS was added to the National Priorities List (NPL) in 1989 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Since 1988, the Navy conducted hundreds of studies, excavations, and groundwater treatment actions as the Shipyard cleanup progressed. The cleanup program at HPNS is managed by the Base Realignment and Closure (BRAC) Cleanup Team (BCT). The BCT for HPNS consists of representatives from the Navy, the U.S. Environmental Protection Agency (EPA), the California Environmental Protection Agency Department of Toxic Substances Control (DTSC), and the California

The Five-Year Review concluded that remedies in place at HPNS either continue to protect human health and the environment or that they are expected to, after remediation is completed. The entire Five-Year Review report is available to the public at the information repositories listed on page 7 of this fact sheet. Additional information about the Five-Year Review report and other Department of the Navy activities is available online at: <http://www.bracpmo.navy.mil>.

Regional Water Quality Control Board, San Francisco Bay Region (Water Board).

HPNS currently consists of 866 acres: 420 acres on land and 446 acres under water in the San Francisco Bay. The current area does not include former Parcel A (about 75 acres), which was transferred to the former San Francisco Redevelopment Agency. The remaining property is currently divided into 11 parcels, including Parcels B, C, D-1, D-2, E, E-2, F, G, UC-1, UC-2, and UC-3 (Figure 2). The Five-Year Review focuses on the parcels where remedial actions (RA) have been completed or are under way and includes summary status information

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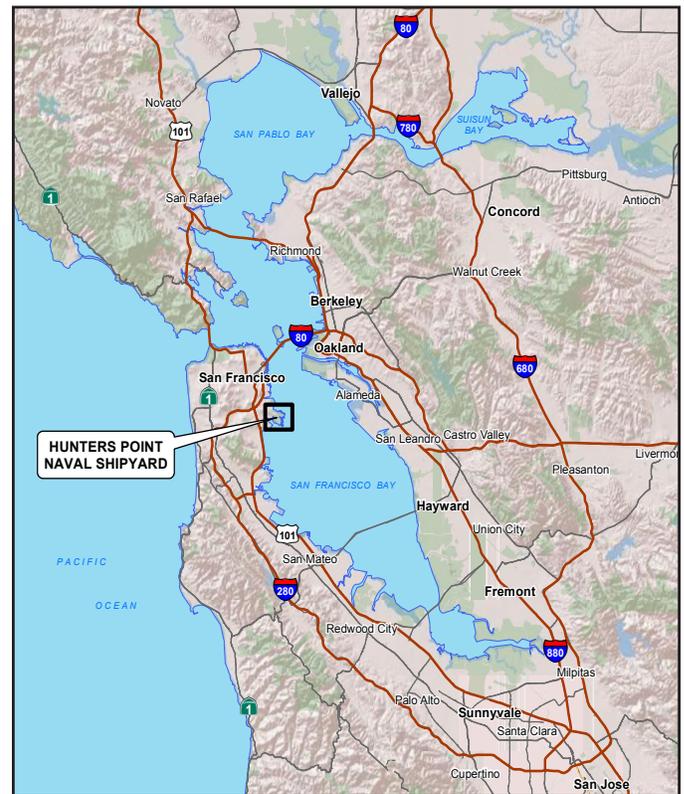


Figure 1: Regional Map

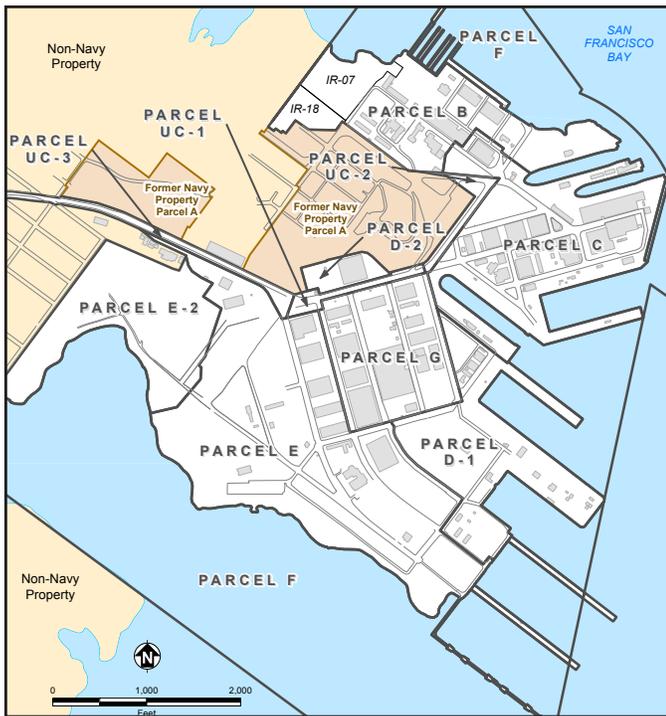


Figure 2: Parcels at HPNS

for all parcels, except former Parcel A. The following list provides the status of parcels within the CERCLA process.

- Remedial actions have been completed or are under way: Parcels B, C, D-1, D-2, G, UC-1, and UC-2
- Remedial design (RD) in progress: Parcel E-2
- Record of decision (ROD) in progress: Parcels E and UC-3
- Final feasibility study (FS) in progress: Parcel F

Various industrial activities at HPNS, including shipbuilding and repair, metal working, degreasing, painting, foundry operations, radiological research, and other industrial operations, have resulted in a broad distribution of chemicals in soil and groundwater. These chemicals include volatile organic compounds (VOC); semivolatile organic compounds including polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), and pesticides; petroleum hydrocarbons; metals; and radionuclides.

Studies showed that the highest levels of potential risk to human health included exposure to metals and organic chemicals (especially PAHs and PCBs) in soil, and exposure to VOCs in soil gas (from either soil or groundwater) via vapor intrusion into indoor air. Potential exposure to radionuclides in soil or structures and exposure to VOCs in groundwater if used for domestic use also posed potentially unacceptable risks. Exposure to metals, PAHs, PCBs, and pesticides in shoreline sediment presented the highest levels of risk to ecological receptors. These future risks will be controlled by the remedies that have been or are being constructed. Current risks to site workers and the public are controlled using worker health and safety restrictions and engineering controls to prevent exposure to the public.

FIVE-YEAR REVIEW PROCESS

WHAT IS A "FIVE-YEAR REVIEW"?

CERCLA requires a periodic review of cleanup remedies that leave hazardous substances on site above levels established for unlimited use and unrestricted exposure. Five-Year Reviews provide an opportunity to evaluate whether cleanup remedies are working as intended. This periodic review, referred to as a "statutory Five-Year Review," generally begins 5 years after a cleanup action has been initiated, and is repeated every succeeding 5 years.

HOW IS A FIVE-YEAR REVIEW PERFORMED?

There are four steps in a Five-Year Review:

- (1) **Document Review** – Key documents are reviewed that describe the selected remedial actions, how they are being carried out, the legal requirements that influence the response actions, the impacts of the action on human health and the environment, and community concerns. Documents providing this information included, but were not limited to, the previous Five-Year Review reports (2003 and 2008); RODs; remedial action design, work planning, and completion and monitoring reports; and annual site inspection reports.
- (2) **Site Inspection** – A site inspection is performed to document current site conditions and to evaluate visual evidence of the protectiveness of the remedial systems and land use restrictions. Controls put in place as part of the remedies, such as shoreline revetments and covers over soil were checked to ensure they were operating as intended. Other remedy components, such as groundwater monitoring wells, were also inspected.
- (3) **Site Interviews** – A cross-section of HPNS stakeholders is interviewed to help identify any problems or concerns with the remedies that need to be addressed. Consistent with previous Five-Year Reviews, interviews included EPA, DTSC, the Water Board, the San Francisco Department of Public Health, the site operation and maintenance contractor, tenants, and local community members. The complete interviews are located in Appendix A of the Five-Year Review report which can be accessed at the information repositories (see page 7 of this fact sheet) or online at the Navy's website at: <http://www.bracpmo.navy.mil>.
- (4) **Protectiveness Statement** – Information gathered during the first three steps is used to answer the question of whether the remedy for each parcel is protective of human health and the environment.

The table on page 3 lists the components of the remedy for each parcel and the status of the remedial actions that were reviewed during this Five-Year Review.

STATUS OF REMEDIAL ACTIONS

Parcel	Remedy Component	ROD	RD	RA in progress	RA complete
B (IR-07/18)	Cover	✓	✓	✓	✓
	Shoreline revetment	✓	✓	✓	✓
	Methane monitoring	✓	✓	✓	✓
	Groundwater monitoring	✓	✓	✓	
	Radiological surface scan and removals	✓	✓	✓	✓
	Implement ICs	✓	✓	✓	
B (remainder)	Excavate soil	✓	✓	✓	✓
	Cover	✓	✓	✓	✓
	Shoreline revetment	✓	✓	✓	
	Soil vapor extraction	✓	✓	✓	
	Groundwater treatment	✓	✓	✓	✓
	Groundwater monitoring	✓	✓	✓	
	Radiological removals	✓	✓	✓	✓
Implement ICs	✓	✓	✓		
C	Excavate soil	✓	✓	✓	
	Soil vapor extraction	✓	✓		
	Cover	✓	✓		
	Groundwater treatment	✓	✓	✓	
	Groundwater monitoring	✓	✓	✓	
	Soil gas survey	✓			
	Radiological removals	✓	✓	✓	
	Implement ICs	✓	✓	✓	
D-1	Excavate soil; remove stockpiles	✓	✓	✓	
	Cover	✓	✓	✓	
	Groundwater treatment	✓	✓	✓	✓
	Groundwater monitoring	✓	✓	✓	
	Soil gas survey	✓	✓	✓	✓
	Radiological removals	✓	✓	✓	
	Implement ICs	✓	✓	✓	
D-2	Radiological removals	✓	✓	✓	✓
E	ROD in preparation	✓			
	Radiological removals	✓	✓	✓	
E-2	Excavate soil	✓	✓		
	Radiological removals	✓	✓		
	Cover and liner	✓			
	Subsurface hydraulic controls	✓	✓		
	Landfill gas treatment	✓	✓		
	Shoreline revetment	✓	✓		
	Monitoring and maintenance	✓	✓		
Implement ICs	✓	✓			
F	ROD not yet started				
G	Excavate soil; remove stockpiles	✓	✓	✓	✓
	Cover	✓	✓	✓	
	Groundwater treatment	✓	✓	✓	✓
	Groundwater monitoring	✓	✓	✓	
	Soil gas survey	✓	✓	✓	✓
	Radiological removals	✓	✓	✓	✓
	Implement ICs	✓	✓	✓	
UC-1	Cover	✓	✓	✓	✓
	Soil gas survey	✓			
	Radiological removals	✓	✓	✓	✓
	Implement ICs	✓	✓	✓	
UC-2	Cover	✓	✓	✓	✓
	Groundwater monitoring	✓	✓	✓	✓
	Soil gas survey	✓	✓	✓	✓
	Radiological removals	✓	✓	✓	✓
	Implement ICs	✓	✓	✓	
UC-3	ROD in preparation	✓			
	Radiological removals	✓	✓	✓	✓

Note: See the list on page 6 for definitions of acronyms.

ARE THE REMEDIES WORKING AND EFFECTIVE?

EPA recommends the following three questions to provide the Five-Year Review framework for organizing and evaluating site data and information, and to ensure that relevant issues are considered when assessing the protectiveness of a remedy:

Question A – Is the remedy functioning as intended by the decision documents?

Answer – Yes, for Parcels B, C, D-1, G, UC-1, and UC-2 where remedies have been undertaken.

Question B – Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?

Answer – Yes.

Question C – Has any other information come to light that could call into question the protectiveness of the remedy?

Answer – No.

The answers to these questions were used to evaluate the overall protectiveness for each parcel, as listed below.

PROTECTIVENESS STATEMENT –

For the IR-07/18 portion of Parcel B: The remedy is protective of human health and the environment.

For the remainder of Parcel B and Parcels C, D-1, G, UC-1, and UC-2: The remedy is expected to be protective of

human health and the environment when it is complete.

In the interim, remedial activities completed to date have adequately addressed all exposure pathways that could result in unacceptable risks in these areas. The Navy continues to monitor cleanup activities that are in progress to ensure they are conducted using appropriate safeguards to protect the community and site workers.

WHAT'S NEXT

Although all remedies are working as intended, the 2013 Five-Year Review identified the following issue and recommended action:

Issue: Concentrations of mercury in groundwater in two wells at Parcel B (IR26MW49A and IR26MW51A) remain above trigger levels even after removal and stabilization of mercury in soil and bedrock in the area.

Recommendation: Groundwater at wells IR26MW49A and IR26MW51A should continue to be monitored semiannually for mercury to evaluate the trend in mercury concentrations.

Action: The Navy will continue to monitor groundwater at wells IR26MW49A and IR26MW51A semiannually for mercury. Sample results and evaluations of concentration trends will be presented in groundwater reports that will be available for public review. The Navy will also evaluate whether mercury is discharging to the bay and, if so, at what amount and rate.

The following are representative photographs of some of the major cleanup activities assessed as part of the Five-Year Review at HPNS. If you are interested in reading about the specific remedies chosen for each parcel mentioned in this fact sheet, documents known as the ROD and RD for each parcel can be found at the Navy's administrative record and information repository locations. The ROD and RD contain detailed descriptions of how each parcel is to be cleaned up. Administrative record and information repository locations are provided at the end of this fact sheet.



Constructing soil cover at Parcel B, IR-07/18.



Excavating soil at Parcel B.



Completed soil cover at Parcel B, IR-07/18.



Completed shoreline revetment at Parcel B, IR-07/18.



Constructing asphalt cover at Parcel G.



Groundwater treatment by injecting chemicals at Parcel C.



Excavating soil at Parcel C.



Asphalt pavement repair at Parcels UC-1 and UC-2.



Planting newly covered hillslope with native plants at Parcel UC-2.

GLOSSARY OF TERMS

Administrative Record – The reports and historical documents used in selection of cleanup or environmental management actions.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) – The federal law, commonly referred to as Superfund, that establishes a program to identify hazardous waste sites and procedures for cleaning up sites to protect human health and the environment, and to evaluate damages to natural resources.

Groundwater – Water beneath the ground surface that fills spaces between soil particles or openings in rocks. Groundwater in the shallowest zone at HPNS is not potable (drinkable) because of high naturally occurring mineral content.

Information Repository – The physical location where a collection of site information is maintained. It contains copies of documents available for public review at a centralized location for the community to access.

Institutional Control (IC) – A legal or administrative document or process to maintain the viability and effectiveness of the selected remedy and to limit human

exposure to contaminated soil or groundwater. ICs limit access to or use of property and may include deed restrictions, covenants, easements, laws, and regulations.

Record of Decision (ROD) – A decision document in the CERCLA cleanup process that identifies how a site will be cleaned up and why the cleanup method was selected.

Remedial Action (RA) – An environmental cleanup that is conducted based on a ROD and involves action to contain, collect, or treat hazardous wastes to reduce, control, or eliminate risks to human health and the environment. Also referred to as a cleanup action or final remedy.

Remedial Design (RD) – The phase in the CERCLA cleanup process where the technical specifications for remedial action are identified. The RD contains the detailed information describing how the selected remedial action will be implemented, including enforcement of institutional controls and other land use controls.

ACRONYMS

BCT	BRAC Cleanup Team
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DTSC	California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
FS	Feasibility study
HPNS	Hunters Point Naval Shipyard
IC	Institutional control
IR	Installation Restoration
NAVFAC	Naval Facilities Engineering Command
NPL	National Priorities List
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
RA	Remedial action
ROD	Record of decision
SVE	Soil vapor extraction
UC	Utility corridor
VOC	Volatile organic compound
Water Board	San Francisco Bay Regional Water Quality Control Board

FOR MORE INFORMATION

For more information on Hunters Point Naval Shipyard, please contact:

Keith Forman

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Navy Base Realignment and Closure
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Office telephone number: (619) 532-0913
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Where can I get more information about the cleanup at Hunters Point Naval Shipyard?

Navy documents and reference materials about Hunters Point Naval Shipyard are available to the public at the City of San Francisco Main Library and the Hunters Point Naval Shipyard Site Trailer. The downtown San Francisco library contains a nearly complete record of all documents related to the investigation and cleanup actions under way at Hunters Point Naval Shipyard. Current information is also available on the Navy's Hunters Point Naval Shipyard website: www.bracpmo.navy.mil.

Click "Prior BRAC" from the menu or at the bottom of the page, and then select "Former NSY Hunters Point" from the "Prior BRAC Installations." Then scroll down and select "View/Hide all Documents," then select "Environmental Documents," then select "Third Five-Year Review" from the menu.

Information is also available at:

The complete Administrative Record for Hunters Point Naval Shipyard is maintained at the Naval Facilities Engineering Command (NAVFAC) offices in San Diego, California. Because of the volume of documents required for the Administrative Record, all documents may not be in the local Information Repository. However, a copy of the complete Administrative Record index is available for public review at the Information Repository located at the San Francisco Main Public Library.

City of San Francisco Main Library

100 Larkin Street, 5th Floor
Government Information Ctr.
San Francisco, CA 94102
(415) 557-4400

Hours of Operation:

Monday: 10:00 a.m. to 6:00 p.m.
Tuesday through Thursday: 9:00 a.m. to 8:00 p.m.
Friday: 12:00 p.m. to 6:00 p.m.
Saturday: 10:00 a.m. to 6:00 p.m.
Sunday: 12:00 p.m. to 5:00 p.m.

Hunters Point Naval Shipyard Site Trailer

(near HPNS security entrance)
690 Hudson Avenue
San Francisco, CA 94124

Hours of Operation:

Monday - Friday: 8:00 a.m. to 5:00 p.m.

Copies of documents located at the Administrative Record are available for review by appointment only by contacting:

Administrative Record

Naval Facilities Engineering Command
c/o Diane Silva
Code EVR-FISC Bldg. 1, 3rd Floor
NAVFAC Southwest
Phone: (619) 532-3676
Fax: (619) 532-3546
Email: diane.silva@navy.mil

Administrative hours are 8:00 a.m. to 5:00 p.m. Monday through Friday. Documents may not be removed from the facility; however, they may be photocopied.

Attn: **Keith Forman Navy BEC**
Navy BRAC Program Management Office West
1455 Frazee Road, Suite 900
San Diego, CA 92108-4310

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**THIRD FIVE-YEAR REVIEW
OF REMEDIAL ACTIONS
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San Francisco, California**

