

**DRAFT**

**AMENDED ACTION MEMORANDUM  
TIME-CRITICAL REMOVAL ACTION FOR THE PCB HOT SPOT  
AREA AT PARCEL E-2-REVISION 2009  
*Hunters Point Shipyard  
San Francisco, CA***

***Contract Number: N64273-08-D-8822  
Task Order Number: 0005***

***DCN: SHAW-8822-0005-0042.A1***

***September 17, 2009***



U.S. Department of the Navy  
Base Realignment and Closure  
Program Management Office West  
1455 Frazee Road, Suite 900  
San Diego, California 92108-4310

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## *Acronyms, Abbreviations and Symbols*

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§	section
Cs-137	cesium-137
226Ra	radium-226
90Sr	strontium-90
ARAR	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
Ca-HSC	California Health and Safety Code
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
HPS	Hunters Point Shipyard
IR	Installation Restoration
mg/kg	milligram per kilogram
msl	mean sea level
NCP	National Oil and Hazardous Substances Pollution Contingency
NAVSEA	Naval Sea Systems Command
Navy	U.S. Department of the Navy
PCB	polychlorinated biphenyl
pCi/g	picocurie per gram
PRG	Preliminary Remediation Goals
RASO	Navy Radiological Affairs Support Office
RAO	removal action objective
RI	remedial investigation
ROC	radionuclides of concern
RWQCB	San Francisco Bay Regional Water Quality Control Board
RRO	radiological remedial objective
Shaw	Shaw Environmental, Inc.
TCRA	time-critical removal action
Tetra Tech	Tetra Tech Environmental Management, Inc.
TtECI	Tetra Tech EC, Inc.
TPH	total petroleum hydrocarbons
TSCA	Toxic Substance Control Act
USC	United States Code

## ACTION MEMORANDUM

U.S. Department of the Navy  
Base Realignment and Closure  
Program Management Office West  
1455 Frazee Road, Suite 900  
San Diego, California 92108-4310

September 17, 2009

Subject: Amended Action Memorandum  
Time-Critical Removal Action for the  
PCB Hot Spot Area at Parcel E-2-Revision 2009  
Hunters Point Shipyard  
San Francisco, California

Site Status:	National Priorities List
Category of Removal:	Time-Critical Removal Action
CERCLIS ID No.:	CA1170090087
Site ID No.:	None

### *I. Purpose*

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This Amended Action Memorandum is an amendment to the Final Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2, Hunters Point Shipyard San Francisco, California, prepared by SulTech, May 19, 2005, which is provided as Attachment 1. The purpose of this Amended Action Memorandum is to document, for inclusion in the Administrative Record, the U.S. Department of the Navy's (Navy) decision to undertake a follow-on time-critical removal action (TCRA) to address polychlorinated biphenyls (PCBs) and TPH in soil and sediment along the Parcels E-2/F boundary to the west and north of the previous PCB hot spot excavation area at Hunters Point Shipyard (HPS) in San Francisco, California. Other contaminants of concern (COCs), as described in the Draft Final Remedial Investigation/Feasibility Study Report for Parcel E-2 (RI/FS), will also be addressed in this TCRA (Engineering /Remediation Resources Group, Inc. and Shaw Environmental, Inc. (Shaw) [ERRG/Shaw, 2009]). These COCs include pesticides, metals and polycyclic aromatic hydrocarbons (PAHs). Figure 1, "Site Location Map" shows the location of the TCRA at Parcel E-2.

Due to field conditions and budgetary constraints, additional excavation at the end of the previous TCRA in 2005 was restricted. Based on the remaining unexcavated PCBs and TPH contamination in soil, it was recommended in the *Final RACR PCB Hot Spot Soil Excavation Site Parcels E and E-2, Hunters Point Shipyard, San Francisco, California* [TtECI, 2007b] that a follow-on removal action be conducted along the shoreline. This TCRA will be conducted along the southeastern Parcel E-2 shoreline area where concentrations of PCBs remain in soil and sediment following the previous TCRA that may pose an unacceptable risk to human and

ecological receptors. The approximate footprint of this TCRA is shown in relation to the Parcel E-2 shoreline and the footprint of the previous TCRA in Figure 2 “PCB Hot Spot Area, Time-Critical Removal Action”.

The U.S. Department of Defense has the authority to undertake response actions, including removal actions, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Title 42 United States Code [USC] Section [§] 9604, Title 10 USC § 2705, and federal Executive Order 12580. Further, this removal action is consistent, to the maximum extent possible, with Chapter 6.8 of the California Health and Safety Code (Ca-HSC). The Toxic Substances Control Act (TSCA) (Title 15 USC § 2601), and implementing regulations under Title 40 Code of Federal Regulations (CFR) § 761.61, provide cleanup and disposal options for PCB remediation waste.

The previous TCRA used PCB cleanup levels that were in accordance with the risk-based approach for bulk PCB remediation waste in Title 40 CFR § 761.61(c). The current TCRA will use cleanup goals consistent with the remediation goals (RGs) established in the Draft Final RI/FS, which are consistent with the risk-based approach specified in Title 40 CFR § 761.61(c).

Confirmation soil samples from the previous TCRA (TtECI, 2007b) indicated that the chemical cleanup goals specified in the Removal Action Objectives (RAO) were achieved at 78 of 83 bottom soil sample locations, but in only seven of 48 perimeter soil sample locations. The highest remaining concentrations were located along the western excavation sidewall. One sample had a PCB concentration of approximately 12,000 mg/kg and another sample had a TPH concentration of 34,120 mg/kg. During the previous TCRA, oil-stained soil and free-phase product were observed along the western and southwestern sidewalls of the excavation boundary.

Exploratory potholes were excavated during low tide at eight locations near the Parcel E-2/F boundary. One to three sediment samples were collected from each pothole and screened for PCBs and TPH using field test kits. The test kit results identified elevated PCB concentrations (identified as “<100 mg/kg”) in three test pit locations. TPH was detected in all potholes and concentrations ranged from 30 mg/kg to 2,000 mg/kg. Petroleum sheen and/or free product was encountered in four pothole locations (Tetra Tech 2007). Figure 2 depicts the location of previous confirmation/evaluation samples and exploratory potholes.

The site was identified in the *Final Historical Radiological Assessment, Volume II*, [Naval Sea Systems Command (NAVSEA), 2004] as being radiologically-impacted, which listed cesium-137 (<sup>137</sup>Cs), radium-226 (<sup>226</sup>Ra) and strontium-90 (<sup>90</sup>Sr) as radionuclides of concern (ROCs) for this site. Therefore, this TCRA will also address potential radiological contamination. This Amended Action Memorandum addresses PCBs and TPH but not radionuclides, except as pertaining to worker health and safety and waste disposal purposes. Material leaving the site will meet the radiological release criteria listed in Table 1 of the Basewide Radiological Revised Action Memorandum, Revision 2006 (Tetra Tech 2006).

As noted previously, the Draft Final RI/FS for Parcel E-2 includes risk-based RGs. These RGs are consistent with the future planned use of the site. Parcel E-2 is largely planned for open space land use, with a very small portion planned for industrial, and research and development

land uses (SFRA, 1997). As discussed in the Draft Final RI/FS for Parcel E-2, land uses other than open spaces are incompatible with the landfill at Parcel E-2, and institutional controls will address this incompatibility. While the RGs established in the Draft Final RI/FS are risk-based in order to be protective of human health and the environment, the RI/FS also established hot spot goals for alternatives that involve a combination of capping and excavation with off-site disposal. Hot spots were identified using existing soil and groundwater data as well as field observations from removal actions. Based on this information, the Navy assessed the benefit of excavation and off-site disposal of hot spots (to support alternatives that contain low-level contamination by capping) based on the following factors:

- The potential for soil hot spots to be a continuing source to groundwater contamination (e.g., chemicals that were identified in both soil and groundwater at concentrations exceeding risk-based evaluation criteria)
- The magnitude of soil concentrations relative to risk-based evaluation criteria
- The proximity of the potential hot spot relative to San Francisco Bay (which increases the likelihood of its effect on aquatic wildlife)

Based on these factors, the Navy identified five tiers of hot spots for removal at Parcel E-2; the hot spots are based on chemical contaminants not radionuclides. This TCRA includes Tier 1, Tier 2, and Tier 3 hot spots (Figure 2).

- Tier 1 is defined as hot spots consisting of nearshore locations (within the tidally influenced zone [TIZ]) where soil concentrations are greater than 10 times the risk-based evaluation criteria (or alternative ecological risk-based criteria) and corresponding groundwater concentrations consistently exceed aquatic evaluation criteria.
- Tier 2 is defined hot spots consisting of nearshore locations (within the TIZ) where soil concentrations are greater than 10 times the risk-based evaluation criteria (or alternative ecological risk-based criteria) and corresponding grab groundwater concentrations exceeded aquatic evaluation criteria.
- Tier 3 is defined hot spots consisting of locations (inland of the TIZ) where soil concentrations are greater than 100 times the risk-based evaluation criteria.

The RAOs developed for this TCRA are designed to remove the Tier 1 and Tier 2 PCB and TPH hot spots that are a potential source of contamination to aquatic wildlife in San Francisco Bay, and Tier 3 (primarily lead contamination) hot spots where soil concentrations are greater than 100 times the risk-based evaluation criteria. The RAOs for this TCRA are as follows:

- To excavate soils and sediment within the proposed excavation boundaries containing PCB, total TPH, or lead concentrations exceeding the removal action goals (Hot Spot Goals from the RI/FS) presented in Table 1 below.

- To continue downward excavation within the proposed excavation boundary to a maximum depth of 10 ft bgs or not more than 1 ft beyond the bay mud surface (whichever is encountered first) if pre-excavation or confirmation sampling data indicate that PCB, total TPH, or lead concentrations, exceed their respective removal action goal.

Table 1

Analyte	Units	Removal Action Cleanup Goals (Project Action Limit)	Project Action Limit Reference (Draft Final RIFS, EERG and Shaw, 2009)
Total PCBs (sediment)	mg/kg	1.8	Tier 1 & 2 RI/FS Hot Spot Goal for sediment
Total PCBs (soil)	mg/kg	7.4	Tier 1 & 2 RI/FS Hot Spot Goal for soil
Total PCBs (soil)	mg/kg	74	Tier 3 RI/FS Hot Spot Goal for soil
Total Petroleum Hydrocarbons (C6 – C36)	mg/kg	3,500	TCRA Action Level for soil & sediment all areas
Lead (soil)	Mg/kg	19,700	Tier 3 RI/FS Hot Spot Goal for soil

The historical data indicate that PCBs and total TPH are the primary COCs within the proposed excavation boundary. However, other COCs including pesticides, metals, PAHs, and ROCs may be present at concentrations exceeding risk-based evaluation criteria. Final confirmation samples will be analyzed for these other COCs in order to characterize the material left in place and for potential further excavation.

This TCRA is focused on removing the Tier 1 and 2 hot spots (primarily PCB and TPH contamination) that pose the most significant risk to aquatic wildlife in the Bay. The Tier 3 hot spots (primarily lead contamination), because they are located greater than 250 feet from the Bay, do not pose as significant a risk to aquatic wildlife in the Bay and are considered secondary to achieving the RAOs. Removal of the Tier 3 hot spots will meet the RAOs specified above. This TCRA is not addressing contamination (including radionuclides) below 10 feet or 1-foot below the top of the bay mud surface. Confirmation sampling will be used to document contaminants remaining following completion of this TCRA.

It is anticipated that approximately 31,000 cubic yards of soil and sediment will be excavated in the Tier 1, Tier 2, and Tier 3 hot spot areas of Parcel E-2 as part of this TCRA. The estimate will be refined after the pre-excavation characterization sampling results are evaluated. This TCRA also includes additional excavation activities in the East Adjacent Area (Tier 3 Hot Spots). Pre-excavation characterization sampling and analysis, field observations, existing data, and field conditions will determine the actual PCB and Tier 3 hot spot excavation boundaries. The pre-excavation sampling and analysis will focus on areas where the extent of PCB and TPH soil

concentrations are unknown. Any wastes associated with this TCRA will be adequately characterized and disposed of off site in accordance with the applicable transportation and disposal regulations including the United States Environmental Protection Agency (EPA) “off-site” rule (40 CFR § 300.440). These wastes may include investigation-derived waste, excavated soil, and debris (such as concrete, bricks, scrap metal, lumber, and plastic).

Specific construction details for implementing the TCRA will be presented in a forthcoming project work plan addendum. The work plan addendum will be based on procedures established in the *Final Project Work Plan, PCB Hot Spot Soil Excavation Site Parcels E and E-2, Hunters Point Shipyard, San Francisco, California, November* (TtECI, 2005). These activities include (and are not limited to) sampling prior to excavation, excavation of contaminated materials, sediment transport control, protection of existing groundwater wells, handling of radiological material, confirmation sampling and analysis, backfilling, grading, and seeding. The schedule of activities during the removal action will also be presented in the project work plan addendum. The Dust Control Plan for this TCRA will describe the proposed air monitoring activities to be conducted during the TCRA and will be consistent with the HPS Dust Control Plan for TCRAs (TtECI, 2009). A Sampling and Analysis Plan will be prepared for this TCRA and issued with the Work Plan Addendum.

The proposed removal action for the PCB hot spot area is consistent with: (1) the factors set forth within the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) Title 40 CFR Part 300; and (2) Ca-HSC Chapter 6.8, based on the following findings:

- Actual or potential exposure of nearby populations, animals, or food chains to hazardous substances or pollutants or contaminants
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate
- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released

No nationally significant or precedent-setting issues are related to this TCRA.



## *II. Site Conditions and Background*

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### *A. Site Description*

The excavation areas of this TCRA are located in Parcel E-2 on the western and northwestern edge of the previous TCRA excavation area (Figure 2). The Tier 3 proposed excavation area is east of the previous TCRA excavation area. Parcel E-2 is federal property controlled by the Navy.

#### *1. Removal Site Evaluation*

Parcel E-2 consists of about 48 acres and encompasses former portions of Parcel E, including IR-01/21, the Panhandle Area, a small area of IR-02 Northwest, and the area east of IR-01/21 that does not have an IR site designation (see Figures A-1 and A-2 in Attachment 1). This Action Memorandum addresses the PCB hot spot area that is located within Parcel E-2, but step-out excavation may extend into Parcel E and the intertidal area of Parcel F (see Figure 2).

The following environmental investigations have been conducted at Parcels E-2:

- Preliminary assessment (Harding Lawson Associates [HLA], 1989).
- Site inspection (HLA, 1994).
- Parcel E Draft Final Remedial Investigation (RI) (Tetra Tech, Levine-Fricke-Recon [LFR], and Uribe & Associates [U&A], 1997).
- Parcel E Draft Feasibility Study (FS) (Tetra Tech, 1998).
- RI/FS Parcel E-2 (ERRG/Shaw, 2009).
- Data gaps investigations (Tetra Tech, 2003; 2005c).
- Parcels E and E-2 Shoreline Characterization Technical Memorandum (SulTech, 2007).

Contamination at Parcel F is addressed in the FS for Parcel F (Barajas & Associates, 2008a).

#### *2. Physical Location*

HPS is located in the southeastern quadrant of the City and County of San Francisco, California on a promontory that extends eastward into San Francisco Bay (Figure 1). HPS comprises 929 acres of which 496 are on land. Parcel E-2 occupies about 48 acres along the San Francisco Bay shoreline. The TCRA site is located along the southeastern shoreline of Parcel E-2 and is bounded on the east by the previous TCRA excavation area, on the northeast by a landfill, and on the west by San Francisco Bay. A 600-foot-long sheet pile wall is present below grade along the approximate western boundary of the previous TCRA excavation area. Stormwater runoff from the landfill discharges to the Bay through the proposed excavation area via a storm water conveyance system (Navy, 2005).

Residences, public areas, and industrial facilities are located within a 1-mile radius of HPS. The PCB hot spot area is adjacent to San Francisco Bay and vulnerable or sensitive populations, habitats, and natural resources.

### 3. *Site Characteristics*

Parcel E-2 is divided into three primary areas. The primary feature is the landfill that occupies the middle of the parcel. The low-lying area southwest of the landfill along the Bay shoreline is referred to as the “Panhandle Area.” The PCB TCRA sites are located south of the landfill in what is known as the “East Adjacent Area” and southwest of the landfill along with Bay shoreline. Ground surface elevations in Parcel E-2 range from mean sea level (msl) to over 30 feet at the high point of the landfill. The TCRA site varies from msl to approximately 5 feet msl along most of the length of the shoreline excavation area; however, piles of rubble and concrete rip-rap located along the northern end of the site shoreline are as high as approximately 15 feet msl. Small areas of saline emergent wetland vegetation exist along the intertidal areas of Parcel E-2, including that along the TCRA excavation area shoreline (ERRG/Shaw 2009).

It is not likely that any active underground utilities are present in the vicinity of the TCRA site. No buildings are present in Parcel E-2 (ERRG/Shaw 2009).

### 4. *Release or Threatened Release*

A former drum storage area is believed to be the source area of PCB releases. In addition, TPH concentrations within the PCB hot spot area range from below the detection limit to 41,000 mg/kg. Excavated soil will also be screened to determine the presence of radiological material.

The PCB hot spot area was identified based on sampling data for soil collected during the Parcel E RI (Tetra Tech, LFR, and U&A, 1997) and the standard data gaps investigation (Tetra Tech 2002b, 2003, and TtECI, 2005c). The previous TCRA excavation area and the proposed excavation areas (Tier 1, 2, and 3) for this TCRA are shown on Figure 2. The scope of work for this TCRA includes excavating an estimated quantity of 40,000 cubic yards of soil and sediment. The excavation will not extend into the landfill cap or in landfill waste. The likelihood of future releases of contaminants to soil has been eliminated because industrial operations are no longer conducted at HPS.

The potential routes of exposure to human receptors include dermal contact, ingestion, and inhalation of soil. Risk to human health is posed by PCB-contaminated soil that is at or near the ground surface.

Additionally, exposure to PCB contamination may present a potential risk to ecological receptors in the Bay. Removal of PCB-contaminated surface soil and appropriate grading and seeding of the backfill in the PCB hot spot area will control the transport of PCB-contaminated soils to the shore and into the Bay in this area. Removal of PCBs near the Bay will reduce the potential threat to ecological receptors.

### 5. *National Priorities List Status*

In 1989, the HPS property was included on the National Priorities List (NPL) as a Superfund site pursuant to CERCLA, as amended by the Superfund Amendments and Reauthorization Act. Of the six original parcels (A, B, C, D, E and F) into which HPS was originally divided, remedial activities are in progress in all but one. Parcel A was delisted from the NPL and transferred to the City and County of San Francisco in February 1999. Three of the five remaining parcels have been subdivided as follows: Parcel C has been subdivided into two parcels (Parcel C and

Parcel UC2); Parcel D has been subdivided into four parcels (Parcel D-1, Parcel D-2, Parcel G and Parcel UC-1); and Parcel E has been subdivided into two parcels, including Parcel E and Parcel E-2 in which this PCB TCRA area is located.

## **6. *Maps, Pictures, and Other Graphic Representations***

A site location map is shown in Figure 1 and the proposed Tier 1, 2 and 3 excavation areas are shown on Figure 2. Appendix A in Attachment 1 provides additional figures relevant to this Action Memorandum. Figure A-1 in Attachment 1 shows the general location of HPS and Parcels B through F. Figure A-2 shows relevant Parcel E and Parcel E-2 site features. Appendix B in Attachment 1 contains tables that are relevant to this Action Memorandum. Table B-1 in Attachment 1 presents a response action matrix that explains the difference between and requirements of the different types of response actions.

### **B. *Other Actions to Date***

#### **1. *Previous Actions***

Actions previously conducted at Parcels E and E-2 are summarized below.

##### **Removal Actions at Parcel E-2**

- **Electrical Transformers Removal:** In 1988, 199 transformers located throughout HPS were removed from their original locations by American Environmental Management Corporation and the Navy Public Works Department. The removal activities were documented in Appendix E of the PA report for other areas and utilities (HLA, 1990). This report indicates that 48 transformers, which were stored in the yard outside of Building 524 in Parcel E, were removed and disposed of offsite. The original locations of the 48 transformers were not identified. (HLA, 1990).
- **Sand Blast Waste Removal Action:** From 1988 to 1995, a series of treatability studies were conducted to determine the feasibility of recycling spent sandblast grit into asphaltic concrete. In a letter dated October 14, 1993, the California Department of Toxic Substances Control (DTSC) concurred that spent sandblast grit used in the manufacture of asphaltic concrete would be excluded from classification as a waste pursuant to CA-HSC Section 25143.2(d)(5) (DTSC, 1993). About 4,000 cubic yards of sandblast waste generated throughout HPS were consolidated in Parcel E. The spent sandblast grit was sampled and analyzed before and after bench-scale, pilot scale, and full scale asphalt mixing. Under the pilot scale study, spent sandblast grit was mixed into asphalt at an off-site plant, and incorporated into the plant feedstock (Battelle, 1996).
- **Exploratory Excavation Removal Action:** In 1996, hazardous substances in soil were removed at exploratory excavation sites that posed a threat to human health and the environment (IT Corporation, 1998a and IT Corporation, 1998b).
- **Storm Drain Sediment Removal Action,** In 1997, sediment and debris were removed from storm drain lines and catch basins; manholes also were removed, and the storm drain lines were jetted clean with high pressure water (IT Corporation, 1998c).

Sediment debris, and water generated during the removal action were collected and removed from the downstream manhole or catch basin of each storm drain reach. Solid material was disposed of off site, and water was discharged to the City and County of San Francisco's sewage treatment plant.

- Groundwater Extraction System and Containment Barrier, 1997-1998: a groundwater containment and extraction system was installed at the southeast portion of Parcel E-2 to reduce the potential for release of landfill constituents into San Francisco Bay. (IT Corporation, 1999a). Under this removal action, groundwater was contained with sheet piling, pumped from extraction wells to limit groundwater mounding, and discharged to the San Francisco Public Utilities Commission sewage treatment plant without pretreatment (IT Corporation, 1999a). This removal action was determined to be effective in limiting groundwater discharge to the Bay in the vicinity of the groundwater control system (IT Corporation, 2001a).
- IR-03 Former Oil Reclamation Ponds: In 1997 a removal action was conducted at the former oil reclamation ponds in IR-03 (IT Corporation, 1999b). During the removal action, a sheet pile wall was installed to reduce the threat of contaminant migration to the Bay. In 1991, approximately 69 gallons of free-product petroleum were recovered from four monitoring wells at IR-03 (HLA, 1991; PRC 1996)
- Landfill Cap Construction, 2000-2001: a multilayer interim cap was constructed on a portion of the Parcel E-2 Landfill to prevent oxygen intrusion and extinguish smoldering subsurface areas following a brush fire (IT Corporation, 2001b, Tetra Tech, 2003).
- Landfill Gas Removal Action, 2002-2003: a landfill gas control and monitoring system was installed along the northern Parcel E-2 boundary to control gas migration from the landfill (Tetra Tech, 2002a).
- Historical Radiological Assessment: In 2004 the historical radiological assessment identified Parcel E as impacted by radiological activities and recommended additional characterization and potential remediation at Parcel E (NAVSEA, 2004).
- Shoreline Cleanup Activities: In 2003 and 2004 the Navy conducted cleanup activities along the shoreline of HPS to remove nonhazardous surface debris and recyclable materials including scrap metal, concrete, rebar, wood, and ropes. These materials were disposed of off site. (TtECI, 2004).
- Parcel D and Parcel E Soil Stockpile Removal: In 2004, fourteen soil stockpiles were sampled and disposed of off site. Nine of the stockpiles were located on unpaved, exposed soil areas in Parcel D. The remaining five stockpiles were located on paved areas in Parcel E. Approximately 3,500 cubic yards of soil from Parcel D and Parcel E stockpiles were disposed of off site (Tetra Tech, 2005).
- PCB Hot Spot Area Removal Action, 2005–2007: 44,500 cubic yards of contaminated soil, including 611 cubic yards of radiologically impacted soil and debris, were excavated from this area and disposed of off site in the southeast portion of Parcel E-2 (TtECI, 2007a).

- Metal Debris Reef and Metal Slag Area Removal Action, 2005-2007: 11,200 cubic yards of contaminated soil and sediment from the Metal Debris Reef (Parcel E), and 8,200 cubic yards from the Metal Slag Area (Parcel E-2) were excavated and disposed of off-site.

## *2. Current Actions*

The Navy is in the process of completing a combined RI/FS Report for Parcel E-2 that will include the landfill and surrounding areas. Most of the activities that are being planned for implementation in Parcel E-2, apart from this PCB TCRA, focus on the Panhandle Area, where isolated pockets of solid waste exist within clean fill materials. A work plan is currently being prepared to conduct a methane gas survey in the area to evaluate the need for removal actions or waste encapsulation.

TCRAs are currently under consideration for several locations in the Panhandle Area including the “Ship Shielding Area” where low-level radiological waste disposal may have occurred. A large part of the Panhandle Area has been designated as the site of both saline and freshwater wetlands mitigation areas that are currently in the planning stages. The wetlands mitigation will include shoreline areas of saline wetland vegetation that will be lost as a consequence of this PCB TCRA.

### *C. State and Local Authorities Roles*

#### *1. State and Local Actions to Date*

Federal Executive Order 12580 delegates to the U.S. Department of Defense authority to undertake CERCLA response actions. Congress further outlined this authority in its Defense Environmental Restoration Program Amendments, which can be found in Title 10 USC Sections §§ 2701-2705. Both CERCLA § 120(f) and Title 10 USC § 2705 require Navy facilities to ensure that state and local officials be given the timely opportunity to review and comment on Navy response actions. CERCLA § 120 further requires the Navy to apply state removal and remedial action law requirements at its facilities.

Accordingly, the DTSC and the San Francisco Bay Regional Water Quality Control Board (RWQCB) have provided technical advice and regulatory oversight during the RI/FS Parcel E-2 (ERRG/Shaw, 2009) and during the previous TCRA (TtECI, 2007a and TtECI, 2007b). DTSC and the RWQCB are members of the Base Realignment and Closure (BRAC) Cleanup Team.

#### *2. Potential for Continued State and Local Response*

DTSC and the RWQCB have provided technical advice, oversight, and general assistance with the PA/SI and RI/FS phases of the IRP, with the standard data gaps investigation, and with the previous TCRA. These agencies will continue to do so throughout the IRP. It is expected that the Navy BRAC Defense Environmental Restoration Account funds will continue to be the exclusive source of funding for this program.

### *III. Threats to Public Health or Welfare or the Environment, and Statutory and Regulatory Authorities*

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In accordance with the NCP, the following threats must be considered in determining the appropriateness of a removal action (Title 40 CFR § 300.415[b][2]):

- Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations, animals, or food chains.
- Actual or potential contamination of drinking water supplies or sensitive ecosystems.
- Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.
- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.
- Threat of fire or explosion.
- Other situations or factors that may pose threats to public health or welfare or the environment.

#### *A. Threats to Public Health or Welfare*

The following three threats apply to conditions at the PCB hot spot area:

- Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations or the food chain.
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.
- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

Pursuant to CERCLA § 104(a)(1)(A) (Title 42 USC § 9604[a][1][A]), response actions may be implemented whenever there is a release or substantial threat of release of a hazardous substance. PCBs (a hazardous substance) have been released into the environment (soil) at Parcels E-2 and F of HPS. Soils near the ground surface are a threat because they may contain PCBs at concentrations that result in an unacceptable risk to human health and the environment through several exposure pathways. The potential pathways include ingestion, direct contact, and inhalation of soil. The nature of this risk indicates that removing contaminated material is required to mitigate potential threats to public health. The recommended action described in this Action Memorandum will address these potential threats to public health. In addition, potential risks from the presence of TPH and radiological materials will be addressed within the PCB hot

spot footprint. Because groundwater in the A-aquifer at Parcels E-2 and F is not considered a potential source of drinking water, the threat of potential contamination of drinking water supplies is not relevant OR applicable (RWQCB, 2003).

### ***B. Threats to the Environment***

One of the above threats to the environment applies to conditions at the PCB hot spot area at Parcels E-2 and F; specifically, potential contamination of sensitive ecosystems. Threats are posed by PCBs that could affect the Bay by migrating as stormwater carries contaminated surface soils into the Bay. The proposed TCRA excavation area is along the eastern shoreline of HPS South Basin. The highest concentrations of PCBs in sediments observed in the south basin are found along the eastern shoreline with concentrations steadily decreasing with increasing distance from the shoreline. This suggests that the PCBs were likely transported to the offshore area via erosion or overland stormwater transport of the contaminated soils from the PCB hot spot area.

Potential ecological risk to birds and mammals are associated primarily with elevated levels of PCBs along the Parcels E-2 and F shoreline.



#### *IV. Endangerment Determination*

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Risk calculations from EPA and California Environmental Protection Agency guidance (EPA 2004a, 2004b; California Environmental Protection Agency, 2004) that established Preliminary Remediation Goals (PRGs) and other information contained in the Administrative Record demonstrate that current conditions at the PCB hot spot area in Parcels E-2 and F present immediate and severe threats to the aquatic ecosystem, public health, or the environment.

Actual or threatened releases of PCBs from this site, if not addressed by implementing the response action described in this Action Memorandum, may present an imminent and substantial endangerment to public health, or the environment. The primary danger is from migration of PCB contamination that may result in the contamination of air, soil and sediment, or water media.

## *V. Proposed Actions and Estimated Costs*

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### *A. Proposed Action*

The RAOs of this TCRA are as follows:

- To excavate soils and sediment within the proposed excavation boundary containing PCB or total TPH concentrations exceeding the removal action goals (Hot Spot Goals from RI/FS) presented in Table 1.
- To continue downward excavation within the proposed excavation boundary to a maximum depth of 10 ft bgs or not more than 1 ft beyond the bay mud surface (whichever is encountered first) if pre-excavation or confirmation sampling data indicate that PCB or total TPH concentrations exceed their respective removal action goal.

#### *1. Proposed Action Description*

The following removal action activities are proposed to meet the RAOs:

- Site preparation and security.
- Survey existing ground surface and stake boundary and sample locations.
- Conduct underground utility clearance and an EM-61 geophysical survey.
- Conduct walkover radiological survey and remove point sources, if identified.
- Remove surface debris to provide access for soil sampling, and clear and grub vegetation.
- Collect soil and sediment samples to characterize and define the extent of PCB and TPH contamination west and north of the previous excavation area.
- Use a solvent to extract PCBs and TPH from soil for analysis at an off-site laboratory using modified EPA Method 8082A/8015B for rapid quantitative determination of contaminant concentrations without having to first screen for radiolonuclides.
- Identify preliminary excavation boundaries in an Excavation Technical Memorandum.
- Deploy inflatable cofferdam prior to excavation within the TIZ.
- Excavate soil and sediment based on the Hot Spot Goals presented in Table 1.
- Perform radiological screening of excavated soil in 6-inch lifts.
- Separate excavated soil based on chemical or radiological waste requirements, then stockpile in Parcel E, or place in appropriate waste bins.

- Screen soil material appropriately to identify and segregate radiological anomalies above the RROs. Material handling and subsequent waste segregating will be optimized to minimize radiological and chemical disposal costs.
- Implement rigorous measures (wetting down of soil) to prevent dust emissions during field work.
- Conduct real-time air monitoring.
- Protect existing groundwater well (IR01MW66A) within the excavation boundary.
- Dewater the excavation areas as necessary including sampling, treatment, and disposal.
- Once excavation bottom and sidewall screening samples are below RAOs for PCBs and TPH, confirmation soil samples will be collected and submitted to an offsite laboratory (after screening for radiological isotopes) to characterize the material left in place using the following analytical methods:
  - PCBs – EPA Method 8082A
  - TPH purgeable (as gasoline) – EPA Method 8015B
  - TPH extractable (as diesel and motor oil) – EPA Method 8015B
  - Organo chlorine pesticides – EPA Method 8081A
  - Polycyclic aromatic hydrocarbons (PAHs) – EPA 8270-SIM
  - CCR Title 22 metals (17) – EPA 6020/7471A
  - Strontium-90, radium-226, cesium-137 – HPS on-site radiological laboratory
- Survey final excavation extent.
- Collect sediment samples as appropriate in the TIZ for on-site sieve analyses to determine appropriate gradation of backfill materials for the TIZ.
- Upland excavation areas will be lined with a demarcation fabric or plastic fencing material to identify the limits of the excavation, and then backfilled with pea gravel or angular rock and appropriately graded clean fill material, then graded and seeded as appropriate to control erosion from stormwater runoff and sediment discharge to the Bay.
- TIZ excavation areas will be lined with a demarcation fabric or plastic fencing material to identify the limits of the excavation, and then backfilled with a layer of pea gravel or angular rock and covered by appropriately graded clean fill material. The shoreline will be protected using 1 to 2-foot diameter rip-rap made from radiologically-screened and contaminant-free, crushed concrete debris from the site or imported stone as necessary.
- Segregate debris from soils and stockpile for waste characterization. Properly stockpile excavated soil to limit runoff. Characterize stockpiles for waste disposal.

- Coordinate the disposal of radiological and mixed wastes: including screening results, cubic yard estimates, and loading the bins provided by the low-level radioactive waste disposal contractor.
- Coordinate the disposal of radiological and mixed wastes including: screening results, cubic yard estimates, and loading the bins provided by the low-level radioactive waste disposal contractor.
- Construct temporary shoreline protection of clean backfill, geotextile fabric and riprap after completion of this TCRA.

This TCRA may also include removal of the 600-foot-long sheet pile wall and additional step-out excavation activities.

## 2. *Contribution to Remedial Performance*

As stated in the Draft Final RI/FS (EERG/Shaw, 2009), based on the nature and extent evaluation and the risk assessment results, the following media and affected areas pose potential threats to humans and wildlife: (1) solid waste and soil in the Parcel E-2 Landfill; (2) landfill gas; (3) soil and isolated solid waste in the surrounding areas; (4) groundwater in the A-aquifer and B-aquifer; (5) surface water runoff; and (6) shoreline sediment.

The proposed actions described in Section V.A.1 (above) are directed toward soil in the surrounding areas of Parcel E-2 and the shoreline sediment. These actions are consistent with the most protective and conservative of the remedial alternatives presented in the Draft Final RI/FS, and are focused on the removal of PCB and TPH impacted soils/sediments which will prevent humans and wildlife from direct contact.

## 3. *Description of Alternative Technologies*

Removal action alternatives for soil and sediment were developed and evaluated in the Draft Final RI/FS (EERG/Shaw, 2009). The alternatives were analyzed and compared based on the evaluation criteria required by the *EPA Superfund Removal Procedures: Action Memorandum Guidance*, OSWER 9360.3-01 (EPA, 1990). The evaluation criteria are effectiveness, implementability, and cost.

### a. *Evaluation Criteria*

The three criteria of effectiveness, implementability, and cost were used to evaluate the removal and disposal alternative proposed in this Amended Action Memorandum.

### **Effectiveness**

Three general factors were considered in evaluating the effectiveness of the removal action: (1) overall protection of human health and the environment; (2) short-term effectiveness; and (3) long-term effectiveness and permanence.

### **Implementability**

This criterion addresses the technical and administrative feasibility of implementing the removal action. Items evaluated included: (1) the availability of services and materials required during implementation of the action; (2) the institutional or social concerns that could preclude the action; and (3) state and community concerns that could affect implementation. The following factors were considered.

- Technical feasibility: the ease of difficulty of implementing the alternative and the reliability of the technology.
- Administrative feasibility: activities, such as obtaining waivers or permits, requiring coordination with other offices and agencies.

## **Cost**

This criterion is concerned with the estimated costs of the alternative and is based on previous removal actions for soils/sediment. Operations costs were not considered in the cost evaluation since removal actions will be performed in less than a year, and no follow-on costs are associated once this removal action has been completed.

### *i. Selected Removal Action Alternative*

The removal and offsite disposal of PCB and TPH impacted soil/sediment provides the highest degree of effectiveness, is feasible to implement, and is economically feasible. This is the selected removal action alternative for this TCRA

## **Effectiveness**

Removal and offsite disposal provides the highest degree of protection for human health and the environment by physically removing the materials from HPS. Removal and off-site disposal will also comply with chemical-, action-, and location-specific applicable or relevant and appropriate requirements (ARARs).

## **Implementability**

This alternative does not have administrative constraints and has few technical constraints. Previous characterization of PCB and TPH impacts to soil/sediment and proposed pre-excavation sampling and analysis activities establish lateral and vertical extent of contaminants. Subsurface investigations and previous removal actions have found areas where disposal of drums and laboratory waste occurred. Physical removal, using convention excavation and disposal methods, is feasible for these types of situations.

## **Cost**

Unit costs for labor, mobilization, site remediation, and disposal of PCB and TPH impacts soil/sediment are not prohibitive given the very few technical constraints and ease of this type of removal activity.

*ii. Evaluation of No Action Alternative*

The no action alternative, while economically feasible and easily implemented, is not an effective alternative.

**Effectiveness**

The no action alternative provides no protection for human health and the environment.

**Implementability**

This alternative is easy to implement.

**Cost**

The no action alternative is economically feasible.

**4. Engineering Evaluation/Cost Analysis (EE/CA)**

Engineering evaluations and cost analyses are not required for TCRAs.

**5. Applicable or Relevant and Appropriate Requirements (ARARs)**

Section 300.415(j) of the NCP provides that removal actions must attain ARARs to the extent practicable.

Section 300.5 of the NCP defines applicable requirements as cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal environmental or state environmental, or facility citing laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site.

Section 300.5 of the NCP defines relevant and appropriate requirements as cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental, or state environmental, or facility citing laws that, while not “applicable” to a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site and are well-suited to the particular site.

Because CERCLA on-site response actions do not require permitting, only substantive requirements are considered as possible ARARs. Administrative requirements such as approval of or consultation with administrative bodies, issuance of permits, documentation, reporting, recordkeeping, and enforcement are not ARARs for CERCLA actions confined to the site.

There are three types of ARARs. The first type includes “contaminant specific” requirements. These ARARs set limits on concentrations of specific hazardous substances, contaminants, and pollutants in the environment. Examples of this type of ARAR are ambient water quality criteria and drinking water standards. The second type of ARAR includes location-specific requirements for activities based on site characteristics, including activities in wetlands, floodplains, and

historic sites. The third type of ARAR includes action-specific requirements, which are technology-based restrictions that are triggered by the type of action under consideration. Examples of action-specific ARARs are regulations for waste treatment, storage, and disposal under the Resource Conservation and Recovery Act (RCRA).

ARARs must be identified on a site-specific basis from information about specific chemicals at the site, specific features of the site location, and actions that are being considered as removal actions. As the lead federal agency, the Navy has primary responsibility for identifying federal ARARs at HPS. The following potential federal and state chemical-, location-, and action-specific ARARs were identified for the PCB hot spot area:

## Chemical-Specific ARARs

### Federal

- 40 CFR § 131.38. These standards, known as the California Toxics Rule (CTR), are applicable surface water ARARs because surface water and groundwater discharges from Parcel E-2 to San Francisco Bay.

### State

- The Navy accepts the substantive provisions for groundwater relating to beneficial uses, WQOs, waste discharge requirements, and promulgated policies in Chapters 2 and 3 of the Basin Plan, which incorporates SWRCB Resolution 88-63.
- Table 3-3 of the Basin Plan. The RWQCB promulgated these water quality objectives for toxic pollutants in surface water with salinities greater than 5 parts per thousand.
- 22 CCR §§ 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100. These sections define RCRA hazardous waste.
- 22 CCR §§ 66261.22(a)(3), (a)(4), 66261.24(a)(2)-(a)(8), 66261.101, 66261.3(a)(2)(C), and (a)(2)(F). These sections define non-RCRA hazardous waste.
- 27 CCR §§ 20210 and 20220. These sections define designated waste and nonhazardous waste.

## Location-Specific ARARs

### Federal

- Coastal Zone Management Act; Title 16 United States Code (16 USC) § 1456(c) and Title 15 Code of Federal Regulations § 930. These sections require activities to be conducted in a manner consistent with approved state management programs. The relevant California program is outlined in the San Francisco Bay Plan (San Francisco Bay Conservation and Development Commission).
- Executive Order 11990, Protection of Wetlands; 40 CFR § 6.302(a). This section requires action to minimize the destruction, loss, or degradation of wetlands, or to mitigate and restore wetlands if any are destroyed or impaired.
- Migratory Bird Treaty Act of 1972; 16 USC § 703. This act prohibits at any time, using any means or manner, the pursuit, hunting, capturing, and killing, or the attempt to take, capture or kill any migratory bird.

### State

- McAteer-Petris Act; Title 14 California Code of Regulations (14 CCR) §§ 10110 through 11990. These sections require that activities within San Francisco Bay and



the shoreline (100 feet landward from the shoreline) be conducted in accordance with the policies of the San Francisco Bay Plan.

- California Fish and Game Code § 2080. This section prohibits the taking of any endangered or threatened species.
- California Fish and Game Code § 3511. This section prohibits the taking of fully-protected birds.
- California Fish and Game Code §§ 5650(a), (b), and (c). These sections prohibit the passage of enumerated substances or materials into waters of the state deleterious to fish, plant life, or birds.

## **Action-Specific ARARs**

### Federal

- 40 CFR § 122.44(k)(2) and (4). This section, pursuant to which SWRCB Order 99-08 (SWRCB, 1999) was issued, specifies the use of BMPs to reduce pollutants during construction that disturbs at least 1 acre. These requirements are potentially applicable during closure activities.
- 40 CFR §§ 264.554(a), (d), (g), (h), (i), (j), and (k). This section is a RCRA requirement that allows the accumulation of waste and temporary storage on the contiguous property for up to 2 years during remedial operations.
- 40 CFR § 403. The substantive provisions of this section, which specify pre-treatment standards, are potentially applicable if groundwater is treated on-site and discharged to a publicly owned sanitary sewer system.
- 40 CFR § 761.61(c). This section provides a risk-based option for the disposal of PCB remediation waste.
- Clean Water Act of 1977 (Title 33 USC § 1344), as promulgated in 40 CFR §§ 230.10 and 230.11, and Title 33 Code of Federal Regulations § 320. These sections set forth requirements for discharging fill material into wetland areas and San Francisco Bay.

### State

- SWRCB Remediation Activities: 27 CCR § 20090(d). This section specifies that actions taken by or at the direction of public agencies to clean up or abate conditions of pollution or nuisance resulting from unintentional or unauthorized releases of waste or pollutants to the environment are exempt from the 27 CCR waste pile requirements provided that wastes or contaminated materials removed from the immediate place of release shall be discharged or contained in accordance with applicable SWRCB-promulgated provisions of this division to the extent feasible.
- 22 CCR § 66264.553(b), (d), (e), and (f). These sections set forth alternative requirements that are protective of human health or the environment, and that may

replace design, operating, or closure standards for temporary tanks and container storage areas. These sections may apply to the temporary storage of dredged sediment from excavation activities.

- Gas Emission, Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 2. This rule requires that a person shall not discharge into the atmosphere from any miscellaneous operation an emission containing more than 6.8 kilograms (15 pounds) per day and containing a concentration of more than 300 ppm of total carbon on a dry basis.
- 22 CCR §§ 66262.10(a) and 66262.11. These sections require the Navy to determine if any IDW is hazardous waste.
- 22 CCR § 66264.13(a) and (b). This section sets requirements for analyzing waste to determine if it is hazardous.
- 27 CCR § 20200(c). This section requires accurate characterization of waste.
- 27 CCR § 20210. This section requires that designated waste be discharged to Class I or Class II waste management units.
- 27 CCR § 20220(b), (c), and (d). This section requires that nonhazardous solid waste be discharged to a classified waste management unit.
- 22 CCR §§ 66264.553(b), (d), (e), and (f). This section sets forth alternative requirements that are protective of human health or the environment and that may replace design, operating, or closure standards for temporary tanks and container storage areas. These sections may apply to the temporary storage of extracted groundwater associated with excavation prior to treatment and discharge.
- BAAQMD Regulation 6, Rule 302. This regulation prohibits airborne emissions as dark or darker than No. 1 on the Ringelmann Chart and sets forth opacity requirements.
- Title 17 California Code of Regulations § 93105. This section sets forth requirements for road construction and maintenance and for construction and grading operations in soil containing naturally occurring asbestos, serpentine, or ultramafic rock.

The proposed removal action will comply with ARARs identified above to the maximum extent practicable. Section 10 of the Draft Final RI/FS for Parcel E-2 (ERRG/Shaw, 2009) presents the ARARs in greater detail.

## **6. *Project Schedule***

This TCRA for the Parcel E-2 PCB hot spot area is expected to begin in the second half of 2009 and is expected to be completed by winter 2010.

## **B. Estimated Costs**

The Navy has made a present-worth estimate of the removal action costs. The estimated costs include Construction Costs and Non-Construction Costs and are presented below. The estimated present worth total cost for the proposed action not including options, is approximately \$10.5 million.

<b>Base Estimated Costs</b>	
<b>Non-Construction</b>	
Project Management and Meetings	\$882,789
Revised Action Memorandum	\$28,351
Work Plan Addendum	\$111,973
Removal Action Closure Report and RACR Fact sheet	\$42,122
<b>Construction</b>	
Mobilization/ Site Preparation	\$2,915,222
Excavation and Stockpiling 40,000 Cubic Yards	\$3,590,673
Characterization/Confirmation/Verification Sampling	\$654,796
Radiological Screening/Mixed Wastes	\$142,047
Backfill and Site Restoration	\$2,109,434
Housekeeping and Demobilization	\$102,781
<b>Total Non-Construction</b>	<b>\$1,065,235</b>
<b>Total Construction</b>	<b>\$9,514,953</b>

<b>Options Estimated Costs</b>	
<b>Non-Construction</b>	
Project Management Data Calls (1 month maximum)	\$14,281
Project Management Data Calls (2 month maximum)	\$28,561
<b>Construction</b>	
Excavation of Additional 5,000 cubic yards 0-3 ft bgs	\$353,703
Excavation of Additional 5,000 cubic yards 3-10 ft bgs	\$362,944
Excavation of Additional 5,000 cubic yards in Parcel F Intertidal zone	\$521,436
Excavation of Additional 5,000 cubic yards of soil	\$493,424
Excavation of Additional 5,000 cubic yards of sediment	\$555,169
Characterization and Excavation in East Adjacent Area	\$823,923
Removal of Sheet Pile Wall	\$170,741
<b>Total Non-Construction</b>	<b>\$42,842</b>
<b>Total Construction</b>	<b>\$3,281,340</b>
<b>Total Estimated Cost Including All Options</b>	<b>\$13,904,370</b>

## *VI. Expected Change in the Situation Should Action be Delayed or Not Taken*

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If action should be delayed or not taken, exposure of human populations and ecological receptors to CERCLA contaminants will continue from contaminated soil. Contamination from the PCB hot spot area would further impact nearby areas (Parcel F) from sediment transport. This spread of contamination may result in increased health risks to the exposed populations and the environment.

If action should be delayed or not taken, contamination would be allowed to continue to migrate beyond known locations, thereby potentially resulting in a larger volume of material to be remediated. In addition, a delay in action would not be protective of human health or the environment in light of the future reuse plan. This condition would result in an increase in costs for excavation and disposal.

## *VII. Public Involvement*

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The Navy circulated the Draft Action Memorandum and the Administrative Record for public comment, and a public meeting was held on January 25, 2005, to discuss and solicit comments prior to the previous PCB Hot Spot TCRA at this site (TtECI, 2005a). Responses to public and regulatory agency comments are presented in Appendix D of Attachment 1. The Navy will hold a community technical environmental meeting and comment period prior to finalization of this Amended Action Memorandum.

## *VIII. Outstanding Policy Issues*

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No outstanding policy issues exist for this removal action.

## *IX. Recommendation*

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This decision document amendment represents the continuation of the selected removal action for the PCB hot spot area removal action along the Parcels E-2/F shoreline at HPS in San Francisco, California. The removal action was developed in accordance with CERCLA, as amended, and is consistent with the requirements of Title 40 CFR. This decision is based on the Administrative Record for the site.

This removal action is recommended because it meets the criteria of effectiveness, implementability and cost, as described in Section V. The proposed removal action provides short- and long-term effectiveness in protecting human health and the environment from PCBs in soil by removing contaminated soil and disposing of the soil at an off-site disposal facility. This alternative does not involve any technical or administrative constraints on implementation. The estimated total cost of this proposed TCRA is approximately \$10.5 million, not including options.

This Amended Action Memorandum identifies and analyzes removal actions necessary to address the continuation of excavation at the PCB hot spot area along the Parcel E-2/F shoreline in HPS.

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Keith Forman  
BRAC Environmental Coordinator  
By direction of the Director

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(Date)



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# *Figures*



India Basin

San Francisco Bay

PARCEL F

PARCEL B

PARCEL UC-2

PARCEL UC-1

PARCEL C

PARCEL D-2

PARCEL E-2

PCB HOT SPOT AREA

PARCEL G

PARCEL E


PARCEL D-1

South Basin

PARCEL F

**Legend**

 Parcel Boundary

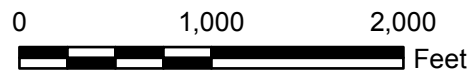
 Non-Navy Property

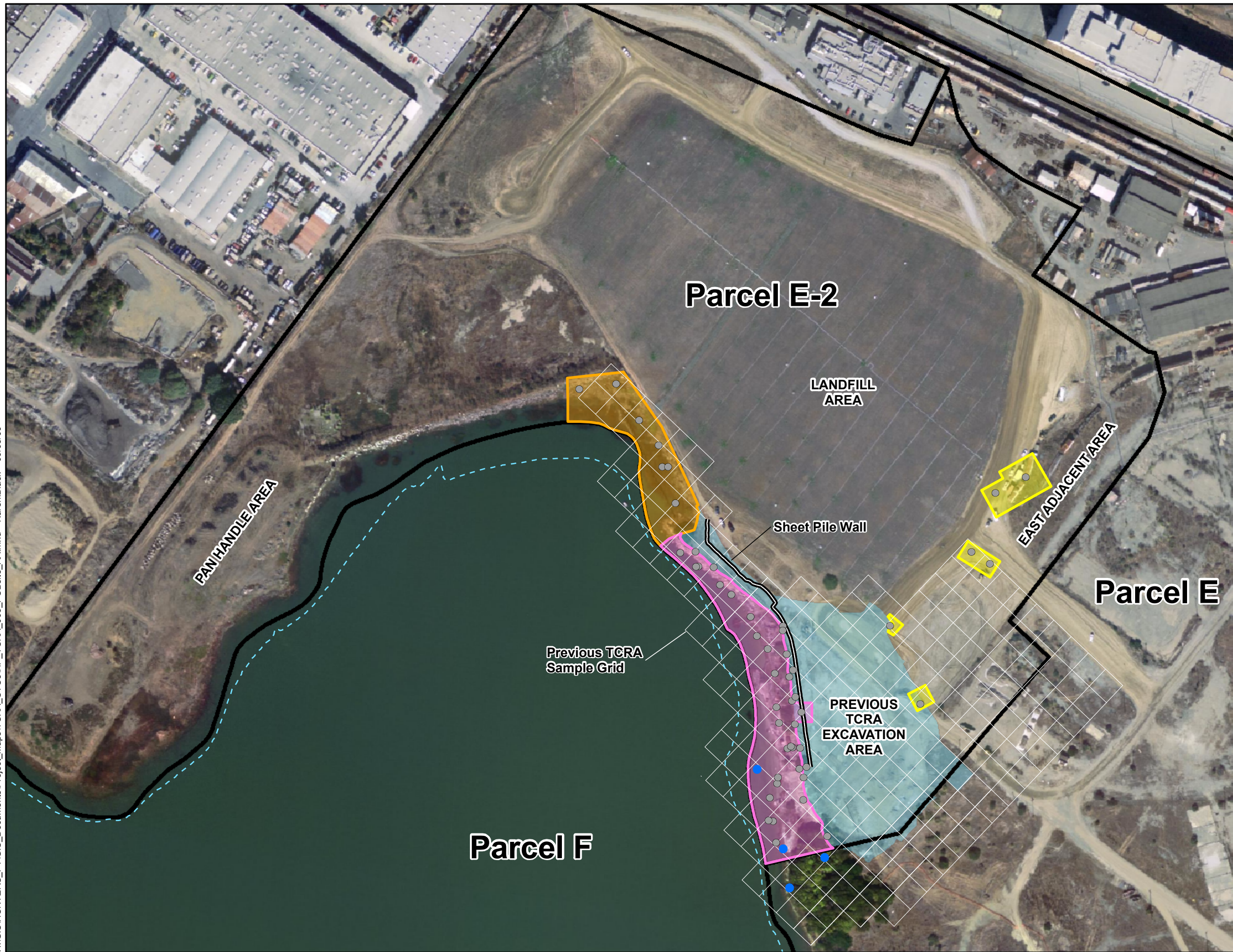


**Hunters Point Shipyard, San Francisco, California**  
U.S. Department of the Navy, BRAC PMO West, San Diego, California

**FIGURE 1  
SITE LOCATION MAP  
PARCEL E-2**

AMENDED ACTION MEMORANDUM  
TIME CRITICAL REMOVAL ACTION

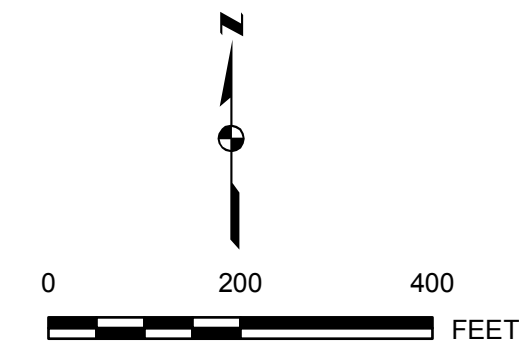




### Legend

- Proposed Excavation Areas\*
- Tier 1 Hot Spot
  - Tier 2 Hot Spot
  - Tier 3 Hot Spot
  - Pothole Location with Oily Sheen/Free Phase TPH
  - Previous TCRA Evaluation/Confirmation Sample Location with PCB/TPH Concentrations Greater Than Evaluation Criteria
  - Sheet Pile Wall
  - Approximate Low Tide Line
  - Area of Previous Excavation
  - Parcel Boundary

\* Hot Spot Areas are based on Figure 12-21 from the "Draft Final Remedial Investigation/ Feasibility Study Report for Parcel E-2, Hunters Point Shipyard, San Francisco, California" ERG, 2009



Shaw Environmental, Inc.

Hunters Point Shipyard, San Francisco, California  
U.S. Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 2

PCB HOT SPOT AREA

AMENDED ACTION MEMORANDUM  
TIME CRITICAL REMOVAL ACTION

***Attachment 1***  
***Final Action Memorandum, Time-Critical Removal Action for the  
PCB Hotspot Area at Parcels E and E-2, Hunters Point Shipyard,  
San Francisco, California***



# Action Memorandum Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2

Hunters Point Shipyard  
San Francisco, California

*DS.B110.20038*

**FINAL**

**May 19, 2005**



Department of the Navy  
Base Realignment and Closure  
Program Management Office West  
1230 Columbia Street, Suite 1100  
San Diego, California 92101-8571

**FINAL ACTION MEMORANDUM  
TIME-CRITICAL REMOVAL ACTION FOR THE  
PCB HOT SPOT AREA AT PARCELS E AND E-2**

**Hunters Point Shipyard  
San Francisco, California**

**May 19, 2005**



DEPARTMENT OF THE NAVY  
Mark Walden, Remedial Project Manager  
Base Realignment and Closure  
Program Management Office West  
1230 Columbia Street, Suite 1100  
San Diego, California 92101

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Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2

## **ACRONYMS AND ABBREVIATIONS**

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§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
Bay	San Francisco Bay
bgs	Below ground surface
BRAC	Base Realignment and Closure
Ca-HSC	<i>California Health and Safety Code</i>
CCR	<i>California Code of Regulations</i>
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	<i>Code of Federal Regulations</i>
DON	Department of the Navy
DTSC	California Department of Toxic Substances Control
EPA et seq.	U.S. Environmental Protection Agency and the following ones
FS	Feasibility study
HLA	Harding Lawson Associates
HPS	Hunters Point Shipyard
IR	Installation Restoration Site
IRP	Installation Restoration Program
LFR	Levine-Fricke-Recon
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
PA	Preliminary assessment
PCB	Polychlorinated biphenyl
ppm	Part per million
PRC	PRC Environmental Management, Inc.
PRG	Preliminary remediation goal
RCRA	Resource Conservation and Recovery Act
RI	Remedial investigation
SFRA	San Francisco Redevelopment Agency
SI	Site inspection

***ACRONYMS AND ABBREVIATIONS (Continued)***

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TCRA            Time-critical removal action  
Tetra Tech    Tetra Tech EM Inc.  
TPH            Total petroleum hydrocarbons  
TSCA           Toxic Substances Control Act

U&A            Uribe & Associates  
USC            United States Code

Water Board   San Francisco Bay Regional Water Quality Control Board

## **ACTION MEMORANDUM**

---

Department of the Navy  
Base Realignment and Closure  
Program Management Office West  
1230 Columbia Street, Suite 1100  
San Diego, California 92101

May 19, 2005

Subject: Action Memorandum, Time-Critical Removal Action for the  
PCB Hot Spot Area at Parcels E and E-2, Hunters Point Shipyard  
San Francisco, California

Site Status:	National Priorities List
Category of Removal:	Time-Critical Removal Action
CERCLIS ID No.:	CA1170090087
Site ID No.:	None

### **I. PURPOSE**

The purpose of this Action Memorandum is to document, for inclusion in the Administrative Record, the Department of the Navy's (DON) decision to undertake a time-critical removal action (TCRA) for the polychlorinated biphenyls (PCB) hot spot area at Parcels E and E-2 (formerly part of Parcel E) of Hunters Point Shipyard (HPS) in San Francisco, California (see Figures A-1 and A-2, Appendix A). PCBs are present in soil at both Parcels E and E-2 at elevated concentrations that, under certain circumstances, may pose an unacceptable risk to human and ecological receptors.

The U.S. Department of Defense has the authority to undertake response actions, including removal actions, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Title 42 *United States Code* [USC] Section [§] 9604, Title 10 USC §2705, and federal Executive Order 12580. Further, this removal action is consistent, to the maximum extent possible, with Chapter 6.8 of the *California Health and Safety Code* (Ca-HSC). Table B-1 in Appendix B summarizes the types of response actions and the requirements pursuant to each.

The Toxic Substance Control Act (TSCA) and its implementing regulations under Title 40 *Code of Federal Regulations* (CFR) § 761.61, provide cleanup and disposal options for PCB remediation waste. The proposed TCRA involves excavating PCB-contaminated soil to achieve cleanup levels in accordance with the risk-based approach for bulk PCB remediation waste in Title 40 CFR § 761.61(c). Adopting the TCRA cleanup goal of 1 part per million (ppm) for PCBs is consistent with the regulations. Within the proposed excavation boundary, the TCRA will also address issues identified for Parcel E-2, such as potential free-phase total petroleum hydrocarbons (TPH) and potential radiological contamination. The proposed TCRA will involve (1) sampling and analysis to further delineate the PCB hot spot area (see Figure A-3); (2) excavating, within the PCB hot spot

excavation footprint, soil with PCBs at concentrations exceeding cleanup goals developed for this TCRA; (3) excavating to the extent practicable, within the PCB hot spot excavation footprint, soil with the potential to contain, or containing visible free-phase TPH; (4) excavating, within the Installation Restoration Site (IR)-02 Northwest and Central excavation footprint, soil surrounding borings IR02B524 and IR02MW127B with PCBs at concentrations greater than 100 ppm; (5) backfilling, grading, and seeding the area to facilitate appropriate drainage and erosion control; and (6) disposing of excavated soil and investigation-derived waste at an appropriate off-site facility. The proposed removal action will substantially limit the pathways of exposure to hazardous substances for human and ecological receptors at Parcels E and E-2. Residual levels of PCBs in soil will be further evaluated in future feasibility studies (FS).

Parcel E is planned for open space, industrial, research and development, and mixed-use land uses (San Francisco Redevelopment Agency [SFRA] 1997). Parcel E-2 is largely planned for open space land use, with a very small portion planned for industrial and research and development land uses (SFRA 1997). The PCB hot spot area is planned for open space, which serves as the basis for the proposed excavation depth of 3 feet. Human receptors may be exposed to surface soil to a depth of 2 feet, and terrestrial ecological receptors may be exposed via burrows to a depth of 3 feet. The removal of PCB-contaminated soil and free-phase TPH to a depth of 3 feet, backfilling with clean soil, and seeding the area will reduce direct contact for human and terrestrial ecological receptors. Soil with PCB concentrations above the cleanup goal, but less than 100 ppm, located at depths greater than 3 feet may be left in place. Since the excavation will be backfilled with clean soil, the residual PCBs at depth are not available through viable exposure pathways. By comparison, Title 40 CFR § 761.61 allows soil containing PCB concentrations of equal to or less than 100 ppm to be capped. Removal of soil with PCB concentrations above 100 ppm will allow a cap to be evaluated in upcoming FSs.

The TCRA will be sufficiently protective of human receptors. The cleanup goal for this TCRA is a concentration in soil that corresponds to an excess lifetime cancer risk of  $1 \times 10^{-6}$  under an industrial scenario. Applying the industrial cleanup goal to an area proposed for open space reuse (with recreational users) is conservative because the exposure time assumed for an industrial worker is greater than the exposure time assumed for a recreational user. The cleanup goal for PCBs was calculated using methodology and exposure factors, consistent with those outlined in the U.S. Environmental Protection Agency (EPA) Region 9 preliminary remediation goal (PRG) table (EPA 2004a), and site-specific risk assessment methodology. The cleanup goal for PCBs for this TCRA is 1 ppm from the ground surface to a depth of 3 feet.

The TCRA will be sufficiently protective of ecological receptors. The ecological exposure pathways of direct contact and sediment runoff will be removed by excavating PCB-contaminated surface soils, backfilling the area with clean fill, and grading and seeding the area to control erosion from storm water runoff. Because natural vegetation is the preferred management practice for controlling erosion from storm water runoff, implementation of this TCRA will eliminate the need to construct the formerly proposed sedimentation basin.

As part of the development of cleanup methodologies as specified in Title 40 CFR § 761.61, EPA conducted a detailed analysis of the direct contact pathway (EPA 1990a). This analysis demonstrated that a 10-inch cover of clean soil would reduce risks by approximately one order of magnitude. As part of this TCRA, soils with PCB concentrations exceeding 1 ppm will be



excavated to a depth of 3 feet. The excavation will be backfilled with clean soil, thereby creating a 3-foot soil cover. Because TPH is known to be a carrier of PCB products such as transformer and hydraulic oil, if soil containing free-phase TPH is found during excavation, this area will be excavated to the extent practical to remove free-phase TPH. This includes soil above 3,500 ppm, which has the potential to contain free-phase TPH. Figure A-3 in Appendix A shows the sampling locations where PCB concentrations exceeded 1 ppm in soil between 0 and 3 feet below ground surface (bgs) within the proposed excavation boundary. The proposed excavation will not extend into the interim landfill cap. Under this TCRA, an estimated 20,000 cubic yards of PCB remediation waste will be excavated and disposed of off site. The estimate will be refined after the pre-excavation characterization sampling.

Pre-excavation characterization sampling and analysis, field observations, existing data, and field conditions will determine the actual PCB hot spot excavation boundary. The pre-excavation sampling and analysis will be conducted prior to beginning excavation activities and will focus on areas where the extent of PCB and TPH soil concentrations are unknown. Any wastes associated with this TCRA will be adequately characterized and disposed of off site in accordance with the applicable transportation and disposal regulations including EPA "off-site" rule (40 CFR § 300.440). These wastes may include investigation-derived waste, excavated soil, and debris (such as concrete, plastic, and scrap metal).

Specific construction details for implementing the TCRA are presented in the project work plan (Tetra Tech ECI 2005b). These activities include (and are not limited to) sampling prior to excavation, excavation of contaminated materials, sediment transport control, protection of the existing groundwater extraction system, handling of radiological material, confirmation sampling and analysis, backfilling, grading, and seeding. The schedule of activities during the removal action is also presented in the project work plan. The Dust Control Plan for this TCRA describes the proposed air monitoring activities to be conducted during the TCRA (Tetra Tech ECI 2005d).

The proposed removal action for the PCB hot spot area is consistent with (1) the factors set forth within the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) Title 40 CFR Part 300, and (2) Ca-HSC Chapter 6.8, based on the following findings:

- Actual or potential exposure of nearby populations, animals, or food chains to hazardous substances or pollutants or contaminants
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate
- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released

No nationally significant or precedent-setting issues are related to this TCRA.

## II. SITE CONDITIONS AND BACKGROUND

### A. SITE DESCRIPTION

#### 1. Removal Site Evaluation

HPS is located in southeast San Francisco on a peninsula that extends east into San Francisco Bay (see Figure A-1). HPS operated as a commercial dry dock facility until 1939, when the DON purchased the property and expanded it into a naval shipyard. In 1974, the DON ceased shipyard operations at HPS and transferred control of the property to its Office of the Supervisor of Shipbuilding, Conversion, and Repair in San Francisco. In 1976, Triple A Machine Shop, Inc. leased most of HPS, operating it as a commercial ship repair facility. In 1989, HPS was included on the CERCLA National Priorities List. In 1991, HPS was slated for closure under the Defense Base Closure and Realignment Act of 1990.

HPS was divided into seven parcels, Parcels A through E, E-2, and F, to aid in environmental investigation and cleanup activities. Parcel A was transferred to the SFRA in December 2004 and is no longer DON property. In 2004, the DON created Parcel E-2 in order to move the landfill forward under the CERCLA process. Parcel E-2 consists of about 48 acres and encompasses former portions of Parcel E, including IR-01/21, the Panhandle Area, a small area of IR-02 Northwest, and the area east of IR-01/21 that does not have an IR site designation (see Figures A-1 and A-2). This Action Memorandum addresses the PCB hot spot area that is located primarily within Parcel E-2, but extends approximately 20 feet into IR-02 Northwest of Parcel E (see Figure A-3).

Parcel E currently consists 138 acres of shoreline and lowland coast along the western portion of HPS. Parcel E is bounded by the University of California, San Francisco property and off-base property to the north, Parcel D to the north and east, the San Francisco Bay (Bay) to the east and south, and Parcel E-2 and off-base property to the west. Historically, Parcel E was predominantly used as an industrial landfill; a waste, construction, and industrial materials storage area; and office and laboratory space for the Naval Radiological Defense Laboratory. Parcel E also contains the Golden Gate Railroad Museum, a former power plant, a former asphalt plant, a pier, and an electrical substation. Based on the City and County of San Francisco's redevelopment plan (SFRA 1997), Parcel E will accommodate open space, maritime, industrial, research and development, and mixed-use reuse.

The following environmental investigations have been conducted at Parcels E and E-2.

- Preliminary assessment (PA) in 1989 (Harding Lawson Associates [HLA] 1989)
- Site inspection (SI) in 1994 (HLA 1994)
- Remedial investigation (RI) in 1997 (Tetra Tech EM Inc. [Tetra Tech], Levine-Fricke-Recon [LFR], and Uribe & Associates [U&A] 1997)
- FS in 1998 (Tetra Tech 1998)
- Data gaps investigations in 2002 (Tetra Tech 2002, 2003, 2005b)

The data gaps investigations indicated that soil in Parcel E-2 southeast of the landfill and in smaller areas of Parcel E contained concentrations of PCBs that potentially pose an unacceptable risk to human and ecological receptors (Tetra Tech 2005b).

Within the PCB hot spot area, a significant percentage of the soil samples collected had PCB concentrations above 1 ppm, with the highest concentration (13,000 ppm) found at 2.5 feet bgs (see Figure A-3). This site was a former drum storage area, and it is believed that PCB releases may have occurred in this area from activities or deteriorating drums stored in the area. In addition, TPH concentrations within the PCB hot spot area range from below the detection limit to 41,000 ppm. Excavated soil will also be screened to determine the presence of radiological material.

## **2. Physical Location**

HPS is located in the City and County of San Francisco in California. HPS is situated on a long promontory in the southeastern part of San Francisco that extends eastward into the Bay (see Figure A-1). HPS comprises 929 acres, 496 of which are on land. Parcel E occupied 173 acres on land along the shoreline in the southwestern portion of HPS. As a result of the creation of Parcel E-2 and other parcel boundary modifications, Parcel E now occupies approximately 138 acres and Parcel E-2 occupies about 48 acres.

Partly cloudy, cool summers with little precipitation and mostly clear, mild winters with moderate precipitation characterize the climate at HPS. The average annual precipitation in the area is about 20 inches. Precipitation occurs mostly from December through February. Residences, public areas, and industrial facilities are located within a 1-mile radius of HPS (Tetra Tech 2002). The PCB hot spot area is adjacent to vulnerable or sensitive populations, habitats, and natural resources in the Bay.

## **3. Site Characteristics**

Industrial buildings, warehouses, the railroad museum, roads, a pier, and wetlands are located within the boundaries of Parcel E. The landfill, roads, and wetlands are located within the boundaries of Parcel E-2. The exact source of PCBs is not readily evident; however, PCB-contaminated soils may be present due to transformers or other industrial operations conducted throughout Parcels E and E-2.

Parcels E and E-2 are currently part of HPS, which is federal property controlled by the DON. The DON no longer performs industrial operations at HPS; however, the DON leases areas of Parcel E to a limited number of tenants involved in light industry.

This TCRA will be the first removal action conducted at Parcels E and E-2 for PCBs in soil. In 1997, a non-time-critical removal action was conducted at IR-01/21 (PRC Environmental Management, Inc. [PRC] 1996f). During the non-time-critical removal action, a 600-foot sheet-pile wall and groundwater extraction system were installed southeast of the landfill to protect the Bay from several hazardous substances, including PCBs.

Storm water runoff from the landfill and from portions of IR-12 discharges to the Bay through the area southeast of the landfill. To protect the Bay, the DON will grade and seed the backfill placed at the PCB hot spot area to control runoff and sediment discharge to the Bay. The best management practice for controlling erosion from storm water runoff is vegetating exposed surfaces (California State Water Resources Control Board 1999). After implementing this TCRA, construction of the formerly proposed sedimentation basin will no longer be necessary as a control measure.

#### **4. Release or Threatened Release**

Figure A-3 shows the concentrations of PCBs found within the excavation boundary that exceeded acceptable risk levels. At the PCB hot spot area, the estimated quantity of soil to be excavated is about 20,000 cubic yards.

The PCB hot spot area was identified based on sampling data for soil collected during the Parcel E RI (Tetra Tech, LFR, and U&A 1997) and the standard data gaps investigation (Tetra Tech 2002, 2003, 2005b). The proposed boundaries of the excavation under this TCRA will be extended, to the degree practicable, to remove contamination where free-phase TPH is observed to be collocated with PCBs in soil. The excavation will not extend into the interim landfill cap or into offshore areas. The likelihood of future releases of contaminants to soil has been eliminated because industrial operations are no longer conducted at HPS.

The potential routes of exposure to human receptors include dermal contact, ingestion, and inhalation of soil. Risk to human health is posed by PCB-contaminated soil that is at or near the ground surface.

Additionally, exposure to PCB contamination may present a potential risk to ecological receptors in the Bay. Removal of PCB-contaminated surface soil and appropriate grading and seeding of the backfill in the PCB hot spot area will control the transport of PCB-contaminated soils to the shore and into the Bay in this area. Removal of PCBs near the Bay will reduce the potential threat to ecological receptors. Sediments containing PCBs located within Parcel F (the Bay) are being evaluated under the CERCLA process separate from this Action Memorandum.

#### **5. National Priorities List Status**

In 1989, the HPS property was included on the National Priorities List as a Superfund site pursuant to CERCLA, as amended by the Superfund Amendments and Reauthorization Act. Remedial activities, including RI and FS phases and other removal actions, are in progress at all six HPS parcels (B, C, D, E, E-2, and F). In February 1999, a partial delisting from the National Priorities List resulted in the removal of Parcel A from the Superfund site designation. As cleanup goals are met, each of the other parcels will be delisted.

#### **6. Maps, Pictures, and Other Graphic Representations**

Appendix A provides the figures relevant to this Action Memorandum. Figure A-1 shows the general location of HPS and Parcels B through F, Figure A-2 shows relevant Parcel E and

Parcel E-2 site features, and Figure A-3 shows the location of the PCB concentrations within the proposed excavation boundary. Appendix B contains the tables relevant to this Action Memorandum. Table B-1 is a response action matrix that explains the difference between and requirements of the different types of response actions. Tables B-2, B-3, and B-4 present the chemical-, location-, and action-specific applicable or relevant and appropriate requirements (ARAR) for this TCRA, respectively.

## **B. OTHER ACTIONS TO DATE**

### **1. Previous Actions**

Actions previously conducted at Parcels E and E-2 are summarized below (Tetra Tech 2002).

- **Electrical Transformers Removal:** In 1988, 199 transformers located throughout HPS were removed from their original locations by American Environmental Management Corporation and the DON's Public Works Department. The removal activity was documented in Appendix E of the PA report for other areas and utilities (HLA 1990). This report indicates that 48 transformers, which were stored in the yard outside of Building 524 in Parcel E, were removed and disposed of off site. The original locations of the 48 transformers were not identified (HLA 1990).
- **Sandblast Waste Removal Action:** From 1988 to 1995, Battelle conducted a series of treatability studies to determine the feasibility of recycling spent sandblast grit into asphaltic concrete. In a letter dated October 14, 1993, the California Department of Toxic Substances Control (DTSC) concurred that spent sandblast grit used in the manufacture of asphaltic concrete would be excluded from classification as a waste pursuant to Ca-HSC Section 25143.2(d)(5) (DTSC 1993). About 4,000 cubic yards of sandblast waste generated throughout HPS was consolidated in Parcel E. The spent sandblast grit was sampled and analyzed before and after bench-scale, pilot-scale, and full-scale asphalt mixing. Under the pilot-scale study, spent sandblast grit was manufactured into asphalt at an off-site plant, and then placed in test strips on existing roadways within HPS. Under the full-scale study, spent sandblast grit was manufactured into asphalt at an off-site plant, tested at the plant, and incorporated into the plant feedstock (Battelle 1996).
- **Exploratory Excavation Removal Action:** In 1996, hazardous substances in soil were removed at exploratory excavation sites that posed a threat to human health and the environment (PRC 1996a, 1996b). During investigations at Parcels B, C, D, and E, 28 areas of stained soil, asphalt, and concrete were identified. Eighteen of the areas met criteria for a CERCLA removal action and were within the scope of the exploratory excavation. Surface soil and soil boring data for most locations showed elevated concentrations of metals, semivolatile organic compounds, PCBs, or TPH (PRC 1996a). Exploratory excavation removal action field activities began in mid-1996 and were completed in February 1997.

- **Storm Drain Sediment Removal Action:** In 1997, sediment and debris were removed from storm drain lines and catch basins; manholes also were removed, and the storm drain lines were jetted clean with high-pressure water (PRC 1996c, 1996e). Sediment, debris, and water generated during the removal action were collected and removed from the downstream manhole or catch basin of each storm drain reach. Solid material was disposed of off site, and water was discharged to the City and County of San Francisco's sewage treatment plant.
- **IR-01/21 Industrial Landfill Groundwater Plume:** In 1997, a removal action was conducted to abate the migration of groundwater containing hazardous substances, including PCBs, to the Bay (PRC 1996d, 1996f). Under this removal action, groundwater was contained with sheet piling, extracted with well points to limit groundwater mounding, and discharged to the City and County of San Francisco's sewage treatment plant without pretreatment (IT Corporation 1999). The cost of implementing this removal action was about \$965,000. This removal action was determined to be effective in limiting groundwater discharge to the Bay in the vicinity of the groundwater control system (IT Corporation 2001).
- **IR-03 Former Oil Reclamation Ponds:** In 1997, a removal action was conducted at the former oil reclamation ponds in IR-03 (HLA 1991; PRC 1996g). During the removal action, sheet piles were installed to reduce the threat of contaminant migration to the Bay. In 1991, about 69 gallons of petroleum product floating on the water table was recovered from four monitoring wells at IR-03 (HLA 1991; PRC 1996g). Field activities for this removal action were completed in late 1997.
- **Landfill Cap:** In spring 2001, an emergency removal action was completed at Parcel E that resulted in the installation of an engineered cap over a portion of the landfill (Tetra Tech 2003). The TCRA was performed in response to a landfill fire that occurred in August 2000. The fire burned on the surface of the eastern portion of the landfill. The surface fire was extinguished quickly, but debris just below the surface continued to smolder for over a month. The cap was subsequently installed to limit air intrusion into the landfill in order to smother any remaining subsurface fires and prevent future fires.
- **Historical Radiological Assessment:** In 2004, the historical radiological assessment identified Parcel E as impacted by radiological activities and recommended additional characterization and potential remediation at Parcel E (Naval Sea Systems Command, Radiological Affairs Support Office 2004).

- **Shoreline Cleanup Activities:** In 2003 and 2004, the DON conducted cleanup activities along the shoreline of HPS to remove nonhazardous surface debris and recyclable materials, including scrap metal, concrete, rebar, wood, and ropes. These materials were disposed of off site (Tetra Tech ECI 2004).
- **Parcel D and Parcel E Soil Stockpile Removal:** In 2004, fourteen soil stockpiles were sampled and disposed of off site. Nine of the stockpiles were located on unpaved, exposed soil areas in Parcel D. The remaining five stockpiles were located on paved areas in Parcel E. Approximately 3,500 cubic yards of soil from Parcels D and E stockpiles was disposed of off site (Tetra Tech 2005a).

## 2. Current Actions

The DON is currently assessing potential areas that may be recommended for removal actions in several locations at Parcels E and E-2; these locations are unrelated to PCB contamination.

- **Metal Slag Removal Action:** The DON plans to remove about 5,500 cubic yards of metal slag and debris located in the Panhandle Area of Parcel E-2 (Tetra Tech ECI 2005a). This action will be conducted during summer 2005.
- **Metal Debris Reef Removal Action:** The DON plans to remove about 8,500 cubic yards of metal debris and sediment located in the southeastern end of Parcel E (Tetra Tech ECI 2005a). This action will be conducted during summer 2005.
- **IR-02 Northwest and Central Area Removal Action:** The DON plans to remove radiological material from the IR-02 Northwest and Central area footprint. About 44,000 cubic yards of soil from this area will be excavated and screened for radiological material. Radiological material-contaminated soil, PCB-contaminated soil, and debris unsuitable for reuse as fill will be segregated from the rest of the soil, the excavation will be backfilled, and the site restored (Tetra Tech ECI 2005c). This action will be conducted during summer 2005.

## C. STATE AND LOCAL AUTHORITIES' ROLES

### 1. State and Local Actions to Date

Federal Executive Order 12580 delegates to the U.S. Department of Defense authority to undertake CERCLA response actions. Congress further outlined this authority in its Defense Environmental Restoration Program Amendments, which can be found at Title 10 USC Sections (§§) 2701-2705. Both CERCLA §120(f) and Title 10 USC §2705 require DON facilities to ensure that state and local officials be given the timely opportunity to review and comment on DON response actions. CERCLA §120 further requires DON to apply state removal and remedial action law requirements at its facilities.

Accordingly, the DTSC and the San Francisco Bay Regional Water Quality Control Board (Water Board) have provided technical advice and regulatory oversight during the PA/SI and RI/FS phases of the Installation Restoration Program (IRP) and during the Parcel E standard data gaps investigation (Tetra Tech 2002, 2003). DTSC and the Water Board are members of the Base Realignment and Closure (BRAC) Cleanup Team.

## **2. Potential for Continued State and Local Response**

DTSC and the Water Board provided technical advice, oversight, and general assistance with the PA/SI and RI/FS phases of the IRP and with the standard data gaps investigation during this removal action. These agencies will continue to do so throughout the IRP. It is expected that the DON's BRAC Defense Environmental Restoration Account funds will continue to be the exclusive source of funding for this program.

## **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

In accordance with the NCP, the following threats must be considered in determining the appropriateness of a removal action (Title 40 CFR § 300.415[b][2]):

- Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations, animals, or food chains.
- Actual or potential contamination of drinking water supplies or sensitive ecosystems.
- Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.
- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.
- Threat of fire or explosion.
- Other situations or factors that may pose threats to public health or welfare or the environment.

### **A. THREATS TO PUBLIC HEALTH OR WELFARE**

The following three threats apply to conditions at the PCB hot spot area:



- Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations or the food chain.
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.
- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

Pursuant to CERCLA § 104(a)(1)(A) (Title 42 USC § 9604[a][1][A]), response actions may be taken whenever there is a release or substantial threat of release of a hazardous substance. PCBs (a hazardous substance) have been released into the environment (soil) at Parcels E and E-2 of HPS. Soils near the ground surface are a threat because they may contain PCBs at concentrations that result in an unacceptable risk to human health and the environment through several exposure pathways. The potential pathways include ingestion, direct contact, and inhalation of soil. The nature of this risk indicates that removing contaminated material is required to mitigate potential threats to public health. The recommended action described in this Action Memorandum will address these potential threats to public health. In addition, threats from TPH and radiological materials will be addressed within the PCB hot spot footprint. Because groundwater in the A-aquifer at Parcels E and E-2 is not considered a potential source of drinking water, the threat of potential contamination of drinking water supplies is not present (Water Board 2003).

## **B. THREATS TO THE ENVIRONMENT**

One of the above threats to the environment applies to conditions at the PCB hot spot area at Parcels E and E-2; specifically, potential contamination of sensitive ecosystems. Threats are posed by PCBs that could affect the Bay by migrating as storm water carries contaminated surface soils into the Bay. The PCB hot spot removal area is adjacent to the eastern shoreline of HPS South Basin. The highest concentrations of PCBs in sediments observed in the south basin are found along the eastern shoreline with concentrations steadily decreasing with increasing distance from the shoreline. This suggests that the PCBs were likely transported to the offshore area via erosion or overland storm water transport of the contaminated soils from the removal action area.

Potential ecological risk to birds and mammals are associated primarily with elevated levels of PCBs along the Parcels E and E-2 shoreline.

## **IV. ENDANGERMENT DETERMINATION**

Risk calculations from EPA and California Environmental Protection Agency guidance (EPA 2004a, 2004b; California Environmental Protection Agency 2004) that established PRGs and other information contained in the Administrative Record demonstrate that current conditions at the PCB hot spot area in Parcels E and E-2 present immediate and severe threats to the aquatic ecosystem, public health, or the environment.

Actual or threatened releases of PCBs from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or the environment. The primary danger is from migration of PCB contamination that may result in the contamination of air, soil and sediment, or water media.

## **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

### **A. PROPOSED ACTION**

The objectives of this TCRA are as follows:

- Limit the exposure of humans to PCB contamination above the cleanup goal of 1 ppm
- Limit the exposure of terrestrial and aquatic ecological receptors to PCB contamination
- Remove free-phase TPH within the PCB hot spot area to the extent practicable
- Conduct excavation and backfill grading and seeding to control erosion from storm water runoff and sediment discharge to the Bay

#### **1. Proposed Action Description**

The following removal action activities are proposed to meet the removal action objective:

- Collect additional samples to characterize soils to define the extent of PCB contamination, where necessary. Analyze PCBs with immunoassay field kits and submit 10 percent of the samples to an off-site laboratory for correlation analysis.
- Survey radiological materials and remove point sources, if identified.
- Within the PCB hot spot excavation footprint, excavate PCB-contaminated soil above the cleanup goal of 1 ppm from the ground surface to a depth of 3 feet. Within the IR-02 Northwest and Central excavation footprint, excavate PCB-contaminated soil above 100 ppm surrounding borings IR02B524 and IR02MW127B.
- Perform radiological screening of soil in 1-foot lifts (Tetra Tech 2001).
- Implement rigorous measures (wetting down of soil) to prevent dust emissions during field work.
- Conduct real-time air monitoring.
- Protect existing groundwater wells by using a stainless steel sleeve where practicable.

- Remove soil visibly stained with TPH if it suggests the presence of free-phase TPH.
- Collect confirmation soil samples. Excavation bottom confirmation soil samples will be analyzed for PCBs, TPH, and radionuclides. Sidewall samples will be analyzed for PCBs, TPH, radionuclides, pesticides, metals, organotins, and polynuclear aromatic hydrocarbons.
- Segregate debris from soils and stockpile for waste characterization. Properly stockpile excavated soil to limit runoff. Characterize stockpiles for waste disposal.
- Backfill excavated areas with clean fill and grade and seed properly to control erosion from storm water runoff and sediment discharge to the Bay. Repair gravel or paved surfaces and restore shoreline, as appropriate.
- Dispose of excavated soil off site based on the results of waste characterization. Excavated materials will be transported off site in accordance with CERCLA § 121(d)(3) and Title 40 CFR § 300.440.

The removal action conducted under this Action Memorandum will remove PCB- and TPH-contaminated soils within the excavation footprint to an estimated quantity of 20,000 cubic yards. Excavated soil will be disposed of off site at Class I and II landfills, as appropriate. If radiological materials are encountered, they will be disposed of appropriately.

## **2. Contribution to Remedial Performance**

Soil will be excavated, removed, and disposed of appropriately to meet the following goals: (1) excavate soil to a depth of 3 feet within the proposed PCB hot spot lateral excavation boundary, as defined by the open space exposure scenario, where PCB concentrations exceed 1 ppm; and (2) excavate soil where existing data and visual observations suggest the presence of free-phase TPH within the proposed PCB hot spot excavation boundary. Residual concentrations of PCBs in soil will be evaluated in future actions for Parcels E and E-2.

## **3. Description of Alternative Technologies**

CERCLA encourages treatment as a principal means of addressing threats from site-related contamination. Excavation and off-site disposal provide the greatest long-term effectiveness at HPS and are easily implemented. In addition, the public has overwhelmingly supported off-site disposal alternatives in the past. The paragraphs below explain how the proposed alternative meets selection criteria (effectiveness, implementability, and cost) used to evaluate this alternative.

The proposed removal action would effectively protect human health and the environment from PCBs in soil by removing contaminated soil and disposing of the soil at an off-site disposal facility, while complying with the chemical-, location-, and action-specific ARARs identified in Appendix B (see Tables B-2, B-3, and B-4, respectively). The removal action

will comply with location-specific ARARs by minimizing adverse effects to coastal zones (see Table B-3). Sampling soil stockpiles and implementing control measures for fugitive dust emissions and storm water runoff will be completed in compliance with ARARs specific to waste characterization and disposal actions (see Table B-4).

The proposed removal action provides effective short- and long-term reduction to exposure of PCBs by removing contaminated soils. In the short term, exposure to workers involved in the removal action will be minimized through proper use of engineering controls and personal protective equipment. The short-term impacts to HPS and the surrounding community (from traffic noise and dust associated with the off-site disposal, and import of clean fill) will be minimized through the use of engineering controls and strict traffic schedules consistent with other activities implemented at HPS. Over the long term, PCB concentrations in surface soils would be removed to the cleanup goal of 1 ppm within the proposed lateral excavation boundary shown on Figures A-2 and A-3.

This alternative does not present any technical or administrative constraints on implementability. Similar alternatives have been successfully employed at other parcels at HPS to provide protection of human health and the environment.

The estimated cost of this removal action is anticipated to be \$250 per cubic yard.

#### **4. Engineering Evaluation/Cost Analysis**

Engineering evaluations and cost analyses are not required for TCRAAs.

#### **5. ARARs**

§300.415(j) of the NCP provides that removal actions must attain ARARs to the extent practicable, considering the exigencies of the situation.

§300.5 of the NCP defines applicable requirements as cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal environmental or state environmental, or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site.

§300.5 of the NCP defines relevant and appropriate requirements as cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental, or state environmental, or facility siting laws that, while not “applicable” to a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site and are well-suited to the particular site.

Because CERCLA on-site response actions do not require permitting, only substantive requirements are considered as possible ARARs. Administrative requirements such as approval of or consultation with administrative bodies, issuance of permits, documentation, reporting, record keeping, and enforcement are not ARARs for CERCLA actions confined to the site.

There are three types of ARARs. The first type includes “contaminant specific” requirements. These ARARs set limits on concentrations of specific hazardous substances, contaminants, and pollutants in the environment. Examples of this type of ARAR are ambient water quality criteria and drinking water standards. The second type of ARAR includes location-specific requirements for activities based on site characteristics, including activities in wetlands, floodplains, and historic sites. The third type of ARAR includes action-specific requirements, which are technology-based restrictions that are triggered by the type of action under consideration. Examples of action-specific ARARs are regulations for waste treatment, storage, and disposal under the Resource Conservation and Recovery Act (RCRA).

ARARs must be identified on a site-specific basis from information about specific chemicals at the site, specific features of the site location, and actions that are being considered as removal actions.

As the lead federal agency, the DON has primary responsibility for identifying federal ARARs at HPS. The following potential federal chemical-, location-, and action-specific ARARs were identified for the PCB hot spot area:

#### **Chemical-Specific ARARs**

- Requirements under RCRA for identification of hazardous waste (Title 42 USC, Chapter 82, §§ 6901–6991[i], and Title 22 *California Code of Regulations* [CCR], §§ 66261.21, 66261.22[a][1], 66261.23, 66261.24[a][1], and 66261.100)
- PCB regulations under TSCA relating to disposal of PCB remediation waste (Title 15 USC, Chapter 53, §§ 2601–2692; Title 40 CFR § 761.61[c])
- Uranium Mill Tailings Radiation Control Act of 1978 (Title 42 USC § 7901 and the following ones [et seq.] and Title 40 CFR § 192.12[a])

#### **Location-Specific ARARs**

- Executive Order No. 11990, Protection of Wetlands
- Clean Water Act of 1977 as amended, Section 404 (Title 33 USC § 1344)
- Coastal Zone Management Act (Title 16 USC §§ 1451–1464)
- Endangered Species Act of 1973 (Title 16 USC §§ 1531–1543)

## **Action-Specific ARARs**

- Requirements under RCRA for disposal of hazardous waste on land (Title 22 CCR § 66268.7)
- Requirements under RCRA for pretransport (Title 22 CCR §§ 66262.30, 66262.31, 66262.32, 66262.33, and 66262.20-66262.23)
- Requirements under the Clean Air Act for excavation (Title 42 USC § 7401 et seq. and Bay Area Air Quality Management District Regulations 6, 6-301, 6-302, and 6-305 and Regulation 8, Rule 40)
- Requirements under the Federal Hazardous Materials Transportation Law for transport of hazardous materials (Title 49 USC §§ 5101-5127 and Title 49 CFR §§ 171.2[f], 171.2[g], 172.300, 172.301, 172.302, 172.303, 172.304, 172.312, 172.400, and 172.504)
- PCB regulations under TSCA relating to storage and disposal of PCB remediation waste (Title 40 CFR § 761.65)
- State Water Resources Control Board Order 99-08 adopted pursuant to Title 40 CFR § 122, Subpart G
- Asbestos airborne toxic control measure for construction, grading, quarrying, and surface mining operations in naturally occurring asbestos, serpentine or ultramafic rock at Title 17 CCR §93105

The proposed removal action will comply with ARARs identified above to the maximum extent practicable. Tables B-2, B-3, and B-4 in Appendix B present the potential ARARs in more detail.

## **6. Project Schedule**

The TCRA for the PCB hot spot area is expected to begin in the first half of 2005 and is expected to be completed by summer 2005.

## **B. ESTIMATED COSTS**

The DON has made a present-worth estimate of the removal action costs. The estimated costs include the direct and indirect capital costs of the proposed removal action. Post-removal site control costs are not anticipated for this TCRA. The items discussed below are considered to be capital costs.

**Direct Capital Costs**

Construction costs	\$937,800
Transport and disposal costs	\$3,190,000
Analytical costs	\$225,100

**Indirect Capital Costs**

Engineering and design expenses	\$102,900
Management, Regulatory/Community Interaction	\$193,600
Start-up and shakedown costs	<u>\$278,300</u>

**Removal Action Total** \$4,927,700

The estimated cost per cubic yard is \$250, including direct and indirect capital costs. The estimated present worth total cost for the proposed action is approximately \$5.0 million.

**VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN**

If action should be delayed or not taken, exposure of human populations and ecological receptors to CERCLA contaminants will continue from contaminated soil. Contamination may spread from the PCB hot spot area to nearby areas (Parcel F) from sediment transport. This spread of contamination may result in increased health risks to the exposed populations and the environment.

If action should be delayed or not taken, contamination would be allowed to continue to migrate beyond known locations, thereby potentially resulting in a larger volume of material to be remediated. In addition, a delay in action would not be protective of human health or the environment in light of the future reuse plan. This condition would result in an increase in costs for excavation and disposal.

**VII. PUBLIC INVOLVEMENT**

The DON circulated this Draft Action Memorandum and the Administrative Record for public comment. A public meeting to discuss this removal action and solicit comments was held on January 25, 2005. The public comment period on the Draft Action Memorandum occurred from January 19, 2005 to February 17, 2005. The Draft Action Memorandum was made available for public review at the following locations:

San Francisco Main Library  
100 Larkin Street  
Government Information Center, 5th Floor  
San Francisco, CA 94102  
Telephone: (415) 557-4500

Anna E. Waden Library  
5075 Third Street  
San Francisco, CA 94124  
Telephone: (415) 715-4100

Appendix D contains the DON's responses to comments received from the regulatory agencies and the public on the "Draft Action Memorandum TCRA for the PCB Hot Spot Area in Parcels E and E-2."

### VIII. OUTSTANDING POLICY ISSUES

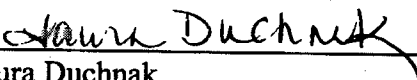
No outstanding policy issues exist for this removal action.

### IX. RECOMMENDATION

This Action Memorandum was prepared in accordance with current EPA and DON guidance documents for TCRAs under CERCLA (EPA 1990b; DON 1996). This Action Memorandum identifies and analyzes removal actions necessary to address excavation of the PCB hot spot area at Parcels E and E-2 in HPS.

This removal action is recommended because it meets the criteria of effectiveness, implementability, and cost, as described in Section V. The proposed alternative provides short- and long-term effectiveness in protecting human health and the environment from PCBs in soil by removing contaminated soil and disposing of the soil at an off-site disposal facility. This alternative does not involve any technical or administrative constraints on implementation. The estimated total cost of this proposed alternative is \$5.0 million.

This decision document represents the removal action for the PCB hot spot area in Parcels E and E-2 at HPS in San Francisco, California. The removal action was developed in accordance with CERCLA, as amended, and is consistent with the requirements at Title 40 CFR. This decision is based on the Administrative Record for the site.

  
\_\_\_\_\_  
Laura Duchnak  
Director BRAC PMO West

5/19/05  
(Date)

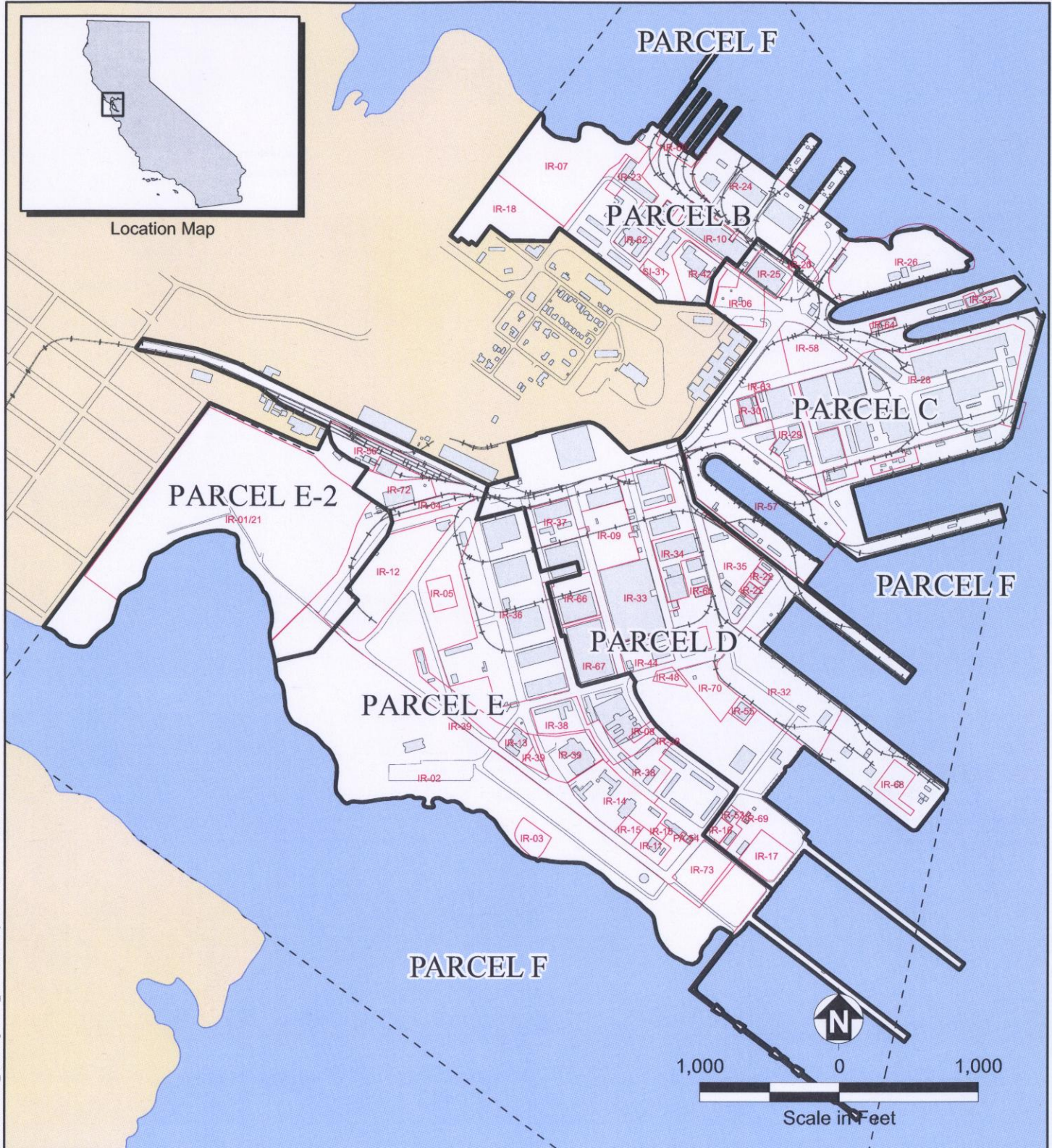


**APPENDIX A**  
**FIGURES**

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Location Map



- Parcel Boundary
- Non-Navy Property
- IR Site
- San Francisco Bay
- Building
- Rail Line
- Road
- Parcel F Boundary

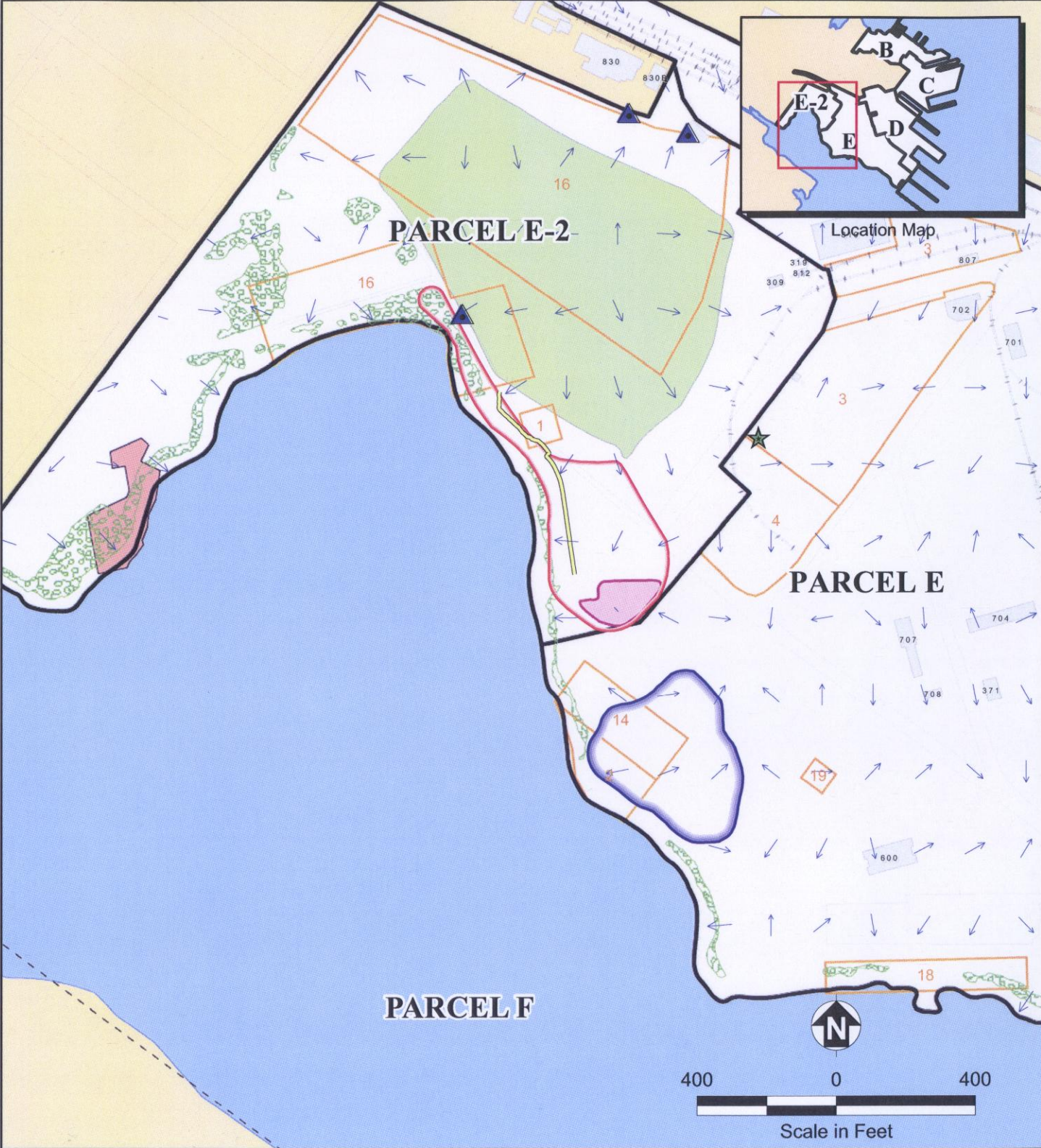
Notes:  
 IR Installation Restoration  
 PCB Polychlorinated biphenyl



Hunters Point Shipyard, San Francisco, California  
 U.S. Department of the Navy, BRAC PMO West, San Diego, California

**FIGURE A-1**  
**SITE LOCATION MAP**  
 Action Memorandum  
 Time-Critical Removal Action for the  
 PCB Hot Spot Area at Parcels E and E-2

V:\Hunters Point\Projects\Parcel E Shoreline\South Basin\_TCR\A\Figure A-2\_site features map.mxd TIEMI-SF Kevin Ernst



- |                                       |                              |
|---------------------------------------|------------------------------|
| PCB Hot Spot                          | Meteorological Station       |
| IR-02 Northwest and Central Area      | Storm Water Discharge Points |
| Formerly Proposed Sedimentation Basin | Surface Flow Direction       |
| Landfill Cap                          | Sheet-Pile Wall              |
| Triple A Sites                        | Rail Line                    |
| Metal Slag Area                       | Road                         |
| Parcel Boundary                       | Wetland Areas                |
| Parcel F Boundary                     | Building                     |
| Non-Navy Property                     |                              |

Notes:  
 IR Installation Restoration  
 PCB Polychlorinated biphenyl  
 Triple A Triple A Machine Shop, Inc.

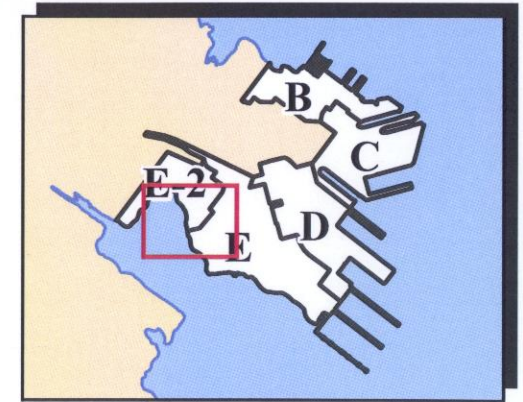
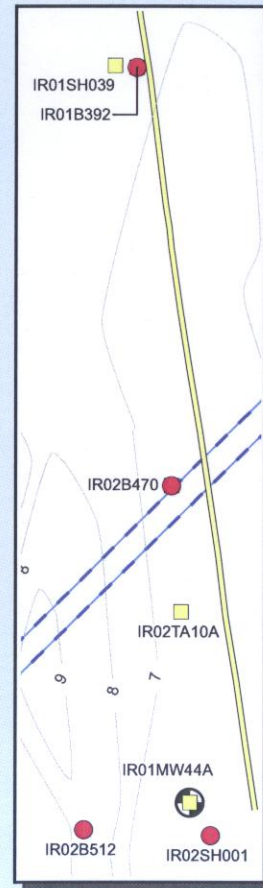


**Hunters Point Shipyard, San Francisco, California**  
 U.S. Department of the Navy, BRAC PMO West, San Diego, California

**FIGURE A-2  
 SITE FEATURES MAP**

Action Memorandum  
 Time-Critical Removal Action for the  
 PCB Hot Spot Area at Parcels E and E-2

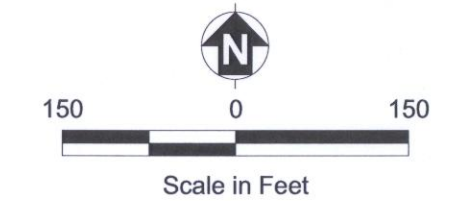
Point ID	Top Depth	Bottom Depth	Analyte	Result (ppm)
IR01B045	1.25	1.25	Total Aroclor	120
IR01B377	1.0	2.0	Total Aroclor	1.5
IR01B377	2.5	3.0	Total Aroclor	2.4
IR01B381	1.0	2.0	Total Aroclor	13.0
IR01B381	2.5	3.0	Total Aroclor	3.2
IR01B382	1.0	2.0	Total Aroclor	190
IR01B382	2.5	3.0	Total Aroclor	230
IR01B387	1.0	2.0	Total Aroclor	2.6
IR01B387	2.5	3.0	Total Aroclor	0 U
IR01B388	1.0	2.0	Total Aroclor	140
IR01B388	2.5	3.0	Total Aroclor	57.0
IR01B391	1.0	2.0	Total Aroclor	56.0
IR01B391	2.5	3.0	Total Aroclor	6.9
IR01B392	1.0	2.0	Total Aroclor	270
IR01B392	2.5	3.0	Total Aroclor	18.0
IR01B393	1.0	2.0	Total Aroclor	1,900
IR01B393	2.5	3.0	Total Aroclor	5,100
IR01B398	1.0	2.0	Total Aroclor	160
IR01B398	2.5	3.0	Total Aroclor	82.0
IR01MW43A	1.25	1.25	Total Aroclor	20.0
IR01MW44A	1.3	1.25	Total Aroclor	4.9
IR01MW47B	0.75	0.75	Total Aroclor	0.670
IR01SH019	0.0	0.5	Total PCB	0.178
IR01SH019	2.0	2.5	Total Aroclor	4.9
IR01SH020	0.0	0.5	Total PCB	0.191
IR01SH021	0.0	0.5	Total PCB	2.05
IR01SH021S	2.0	2.5	Total Aroclor	6.8
IR01SH022	0.0	0.5	Total PCB	6.51
IR01SH023	2.0	2.5	Total Aroclor	0.351
IR01SH026	0.0	0.5	Total Aroclor	9.4
IR01SH026	2.0	2.5	Total Aroclor	10.0
IR01SH027	2.0	2.5	Total Aroclor	1.002
IR01SH028	0.0	0.5	Total PCB	10.62
IR01SH028	2.0	2.5	Total Aroclor	19.4
IR01SH029	0.0	0.5	Total Aroclor	9.4
IR01SH029	2.0	2.5	Total Aroclor	1.9
IR01SH030	2.0	2.5	Total Aroclor	31.0
IR01SH031	0.0	0.5	Total PCB	0.698
IR01SH032	0.0	0.5	Total Aroclor	2.0
IR01SH032	2.0	2.5	Total Aroclor	4.1
IR01SH033	2.0	2.5	Total Aroclor	11.0
IR01SH035	0.0	0.5	Total Aroclor	6.5
IR01SH035	2.0	2.5	Total Aroclor	9.3
IR01SH036	2.0	2.5	Total Aroclor	270
IR01SH037	0.0	0.5	Total PCB	2.68
IR01SH038	0.0	0.5	Total Aroclor	1.5
IR01SH038	2.0	2.5	Total Aroclor	12.0
IR01SH039	2.0	2.5	Total Aroclor	53.0
IR01SH040	0.0	0.5	Total PCB	63.9
IR01SH040	2.0	2.5	Total Aroclor	150
IR01SH041	0.0	0.5	Total PCB	3.71
IR01SH042	0.0	0.5	Total Aroclor	5.4
IR01SH042	2.0	2.5	Total Aroclor	2.7
IR01TA08B	1.2	1.2	Total Aroclor	1.4
IR02B249	1.25	1.25	Total Aroclor	2.1
IR02B402	1.0	2.0	Total Aroclor	0.018
IR02B402	2.5	3.0	Total Aroclor	7.2
IR02B404	1.0	2.0	Total Aroclor	0.210
IR02B404	2.5	3.0	Total Aroclor	13.0
IR02B434	1.0	2.0	Total Aroclor	2.0
IR02B434	2.5	3.0	Total Aroclor	0.82
IR02B435	1.0	2.0	Total Aroclor	11.0
IR02B435	2.5	3.0	Total Aroclor	140
IR02B437	1.0	2.0	Total Aroclor	11,000
IR02B437	2.5	3.0	Total Aroclor	5.3
IR02B438	1.0	2.0	Total Aroclor	0.064
IR02B438	2.5	3.0	Total Aroclor	0.029
IR02B449	1.0	2.0	Total Aroclor	33.0
IR02B449	2.5	3.0	Total Aroclor	13,000
IR02B452	1.0	2.0	Total Aroclor	0 U
IR02B452	2.5	3.0	Total Aroclor	120
IR02B470	1.0	2.0	Total Aroclor	69.0
IR02B470	2.5	3.0	Total Aroclor	480
IR02B512	1.0	2.0	Total Aroclor	130
IR02B512	2.0	3.0	Total Aroclor	220
IR02B515	1.0	2.0	Total Aroclor	0.066
IR02B515	2.0	3.0	Total Aroclor	0.150
IR02B517	1.0	2.0	Total Aroclor	4.83
IR02B517	2.5	3.0	Total Aroclor	0.038
IR02B524	1.0	2.0	Total Aroclor	40.0
IR02B524	2.5	3.0	Total Aroclor	110
IR02B526	1.0	2.0	Total Aroclor	83.0
IR02B526	2.5	3.0	Total Aroclor	17.0
IR02MW127B	1.25	1.25	Total Aroclor	6.4
IR02MW127B	2.75	2.75	Total Aroclor	490
IR02SH001	2.0	2.5	Total Aroclor	120
IR02SH002	0.0	0.5	Total Aroclor	1.2
IR02SH002	2.0	2.5	Total Aroclor	0.70
IR02SH003	0.0	0.5	Total Aroclor	4.5
IR02SH003	2.0	2.5	Total Aroclor	1.4
IR02TA10A	3.0	3.0	Total Aroclor	15.0



Location Map

- Total PCBs Above 3 feet bgs**
- Total PCBs > 100 ppm
  - 1 ppm < Total PCBs ≤ 100 ppm
  - ▲ Total PCBs ≤ 1 ppm
  - ⊕ Groundwater Monitoring Wells
  - ▭ PCB Hot Spot
  - ▭ Parcel Boundary
  - ▭ IR-02 Northwest and Central Area
  - ▭ Landfill Cap
  - ▭ IR Site Boundary
  - ▭ Sheet-Pile Wall
  - ▭ Ground Surface Contours (1-foot interval)

- Notes:**
- bgs Below ground surface
  - IR Installation Restoration
  - PCB Polychlorinated biphenyl
  - ppm Parts per million
  - U Nondetect



Hunters Point Shipyard, San Francisco, California  
 U.S. Department of the Navy, BRAC PMO West, San Diego, California

**FIGURE A-3**  
**PROPOSED EXCAVATION AREA**  
 Action Memorandum  
 Time-Critical Removal Action for the  
 PCB Hot Spot Area at Parcels E and E-2

**APPENDIX B**  
**TABLES**

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**TABLE B-1: RESPONSE ACTION MATRIX**

Final Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2, Hunters Point Shipyard, San Francisco, California

Type and Timing of Response Action			Trigger for Action	Documentation	Community Relations Requirement	Example
Action	Early	Long-Term				
TCRA	X		<ul style="list-style-type: none"> <li>Meets one or more removal criteria</li> <li>Action must begin within 6 months to protect human health and the environment</li> </ul>	<ul style="list-style-type: none"> <li>Removal Site Evaluation</li> <li>Action Memorandum</li> <li>Closeout Report</li> <li>OSC Report (if requested)</li> </ul>	<ul style="list-style-type: none"> <li>Designate spokesperson</li> <li>Notice of availability of Administrative Record within 60 days of starting action</li> <li>CRP if on-site activities greater than 120 days</li> <li>Public comment if lead agency determines appropriate</li> </ul>	<ul style="list-style-type: none"> <li>Removal of corroded drums of waste</li> <li>Removal of plating shop waste</li> <li>Removal of free product from groundwater</li> <li>Capping contaminated surface soil</li> </ul>
Non-TCRA	X		<ul style="list-style-type: none"> <li>Meets one or more removal criteria</li> <li>Planning period of 6 months or more is available without further threats to human health and the environment</li> </ul>	<ul style="list-style-type: none"> <li>Removal Site Evaluation</li> <li>EE/CA Approval Memorandum</li> <li>EE/CA</li> <li>Closeout Report</li> <li>OSC Report (if requested)</li> </ul>	<ul style="list-style-type: none"> <li>Designate spokesperson</li> <li>Notice of availability of Administrative Record by the time EE/CA Approval Memorandum is signed</li> <li>CRP before EE/CA is completed</li> <li>Public Comment on EE/CA (30 to 45 days)</li> <li>Responsiveness Summary (part of the Action Memorandum)</li> </ul>	<ul style="list-style-type: none"> <li>Removal of on-site treatment of contaminated sediments</li> <li>On-site treatment and disposal of contaminated surface soil</li> </ul>
Interim Remedial Action	X		<ul style="list-style-type: none"> <li>Qualitative or quantitative risk assessment indicates action is necessary</li> <li>Exceedances of health-based ARAR</li> <li>Environmental changes</li> </ul>	<ul style="list-style-type: none"> <li>Site Assessment Data</li> <li>Focused Feasibility Study or Proposed Plan that evaluates alternatives</li> <li>Risk Assessment</li> <li>Proposed Plan</li> <li>ROD</li> </ul>	<ul style="list-style-type: none"> <li>CRP</li> <li>Notice of availability of Administrative Record before public comment</li> <li>Public comment (30 to 60 days)</li> <li>Responsiveness Summary (part of the ROD)</li> </ul>	<ul style="list-style-type: none"> <li>Alternative Water Supply</li> <li>Control</li> <li>Temporary Protective Covers</li> </ul>

**TABLE B-1: RESPONSE ACTION MATRIX (CONTINUED)**

Final Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcel E, Hunters Point Shipyard, San Francisco, California

Type and Timing of Response Action			Trigger for Action	Documentation	Community Relations Requirement	Example
Action	Early	Long-Term				
Final Remedial Action	X	X	<ul style="list-style-type: none"> <li>• Baseline risk assessment indicates unacceptable risk</li> <li>• Exceedance of health-based ARAR</li> <li>• Environmental damages</li> </ul>	<ul style="list-style-type: none"> <li>• RI Report</li> <li>• Baseline Risk Assessment</li> <li>• Feasibility Study</li> <li>• Proposed Plan</li> <li>• ROD</li> </ul>	<ul style="list-style-type: none"> <li>• CRP</li> <li>• Administrative Record established and available when RI starts</li> <li>• Public comment (30 to 60 days)</li> <li>• Responsiveness Summary (part of the ROD)</li> <li>• Fact sheets provided throughout the project</li> </ul>	<ul style="list-style-type: none"> <li>• Capping Landfill and leachate and gas control</li> <li>• Groundwater extraction, on-site treatment, and discharge to river</li> <li>• Lagoon sludge and contaminated soil treatment with on-site disposal of residuals</li> </ul>

Notes:

- ARAR Applicable or relevant and appropriate requirement
- CRP Community relations plan
- EE/CA Engineering evaluation/cost analysis
- OSC On-Site Coordinator
- PCB Polychlorinated biphenyl
- RI Remedial investigation
- ROD Record of decision
- TCRA Time-critical removal action

**TABLE B-2: CHEMICAL-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS**

Final Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2, Hunters Point Shipyard, San Francisco, California

Requirement	Prerequisite	Citation	Preliminary ARAR Determination	Comments
<b>Toxic Substances Control Act (Title 15 USC, Chapter 53, §§ 2601–2692)</b>				
Regulates storage and disposal of PCB remediation waste. Three options are available: (1) self-implementing on-site cleanup and disposal; (2) performance-based disposal using existing approved disposal technologies; and (3) risk-based disposal	Soils, debris, sludge, or dredged materials contaminated with PCBs at concentrations greater than 50 parts per million	Title 40 CFR § 761.61(c)	Relevant and appropriate	This requirement is relevant and appropriate for disposal of PCB bulk remediation waste and may be relevant and appropriate for wastes with lower levels of PCB contamination. Section (c) offers an alternative using risk-based levels and technologies.
<b>Resource Conservation and Recovery Act (Title 42 USC, Chapter 82, §§ 6901–6991[i])</b>				
Defines Resource Conservation and Recovery Act hazardous waste. A solid waste is characterized as toxic based on the TCLP, if the waste exceeds the TCLP maximum concentrations.	Waste	Title 22 CCR §§ 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Applicable	These requirements are applicable for determining whether waste is hazardous.
<b>Uranium Mill Tailings Radiation Control Act of 1978 (Title 42 USC §7901 et seq.)</b>				
Regulation establishes cleanup criteria for radium-226 averaged over 100 square meters not to exceed the background level by more than 5 pCi/g averaged over the first 15 centimeters.	Presence of radium-226 in land and buildings that are part of any processing site designated by the Secretary of Energy under §102 of the Uranium Mill Tailings Radiation Control Act	Title 40 CFR § 192.12(a)	Relevant and appropriate	This requirement is relevant and appropriate for residual radioactivity in soils. The Department of the Navy has agreed to a more stringent cleanup level of 2 pCi/g.

Notes:

§	Section	PCB	Polychlorinated biphenyl
§§	Sections	pCi/g	PicoCuries per gram
ARAR	Applicable or relevant and appropriate requirement	TCLP	Toxicity characteristic leaching procedure
CCR	California Code of Regulations	USC	United States Code
CFR	Code of Federal Regulations		
et seq.	and the following ones		



**TABLE B-3: LOCATION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS**

Final Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2, Hunters Point Shipyard, San Francisco, California

Location	Requirement	Prerequisite	Citation	ARAR Determination	Comments
<b>Executive Order 11990, Protection of Wetlands</b>					
Wetland	Action to minimize the destruction, loss, or degradation of wetlands	Wetland as defined by Executive Order 11990, § 7	Title 40 CFR § 6.302(a)	Applicable	Substantive provisions would be ARARs if the removal action affects wetlands.
<b>Clean Water Act of 1977 as Amended, § 404 (Title 33 USC § 1344)</b>					
Wetland	Action to prohibit discharge of dredged or fill material into wetland without permit	Wetland as defined by Executive Order 11990, § 7	Title 33 USC § 1344	Applicable	Substantive provisions would be ARARs if discharge of dredged or fill material to a wetland is planned as part of the removal action.
<b>Coastal Zone Management Act (Title 16 USC §§ 1451–1464)</b>					
Within coastal zone	Conduct activities in a manner consistent with approved state management programs	Activities affecting the coastal zone, including lands there under and adjacent shore land	Title 16 USC § 1456(c) and Title 15 CFR Part 930	Relevant and appropriate	Removal activities will be conducted in accordance with the requirements of the Coastal Zone Management Act and San Francisco Bay plan to the maximum extent practicable.
<b>Endangered Species Act of 1973 (Title 16 USC §§ 1531–1543)</b>					
Habitat on which endangered species or threatened species depend	Federal agencies may not jeopardize the continued existence of any listed species or cause the destruction or adverse modification of critical habitat. The Endangered Species Committee may grant an exemption for agency action if reasonable mitigation and enhancement measures such as propagation, transplantation, and habitat acquisition and improvement are implemented.	Determination of effect on endangered or threatened species or its habitat. Critical habitat on which endangered or threatened species depend.	Title 16 USC § 1536(a), (h)(1)(B)	Applicable	Applicable if endangered species are found.

Notes:

- § Section
- §§ Sections
- ARAR Applicable or relevant and appropriate requirement
- CFR Code of Federal Regulations
- PCB Polychlorinated biphenyl
- USC United States Code

**TABLE B-4: ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS**

Final Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcel E, Hunters Point Shipyard, San Francisco, California

Action	Requirement	Prerequisite	Citation	Preliminary ARAR Determination	Comments
<b>Resource Conservation and Recovery Act (Title 42 USC, Chapter 82, §§ 6901-6991[i])</b>					
On-Site generation	Person who generates waste shall determine if that waste is a hazardous waste	Generator of waste	Title 22 CCR §§ 66262.10(a) and 66262.11	Applicable	The requirements in Title 22 CCR Division 4.5, Chapter 14, are applicable for any operation where waste is generated.
Land disposal	Requires generators of hazardous waste to determine if waste has to be treated before it can be disposed of on land; requires generators to notify treatment facility if waste is subject to land disposal restrictions and does not meet applicable treatment standards; and if the waste meets treatment standards, generators must sign a certification	Hazardous waste land disposal	Title 22 CCR § 66268.7	Applicable	Requirements are applicable if hazardous waste is to be land disposed.
Pretransport requirements	Hazardous waste must be packaged in accordance with DOT regulations before transport	Any operation where hazardous waste is generated	Title 22 CCR § 66262.30	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Hazardous waste must be labeled in accordance with DOT regulations before transport	Any operation where hazardous waste is generated	Title 22 CCR § 66262.31	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Provides requirements for marking hazardous waste before transport	Any operation where hazardous waste is generated	Title 22 CCR § 66262.32	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Generator must ensure that transport vehicle is correctly placarded before transport	Any operation where hazardous waste is generated	Title 22 CCR § 66262.33	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Requires preparation of manifest for transport of hazardous waste off site	Any operation where hazardous waste is generated	Title 22 CCR §§ 66262.20-66262.23	Applicable	These requirements are applicable if hazardous waste is to be transported.

**TABLE B-4: ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)**

Final Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2, Hunters Point Shipyard, San Francisco, California

Action	Requirement	Prerequisite	Citation	Preliminary ARAR Determination	Comments
<b>Clean Air Act (Title 42 USC § 7401 et seq.)</b>					
Excavation	Sets forth opacity limitations	Soil excavation	BAAQMD Regulation 6, Rule 302	Applicable	These requirements are applicable for excavation activities
	Prohibits emission of particles in sufficient number to cause annoyance	Release of particles	BAAQMD Regulation 6, Rule 305	Applicable	This requirement is applicable for excavation activities
	Provides requirements for maintaining, covering, and stockpiling excavated soil	Soil stockpile	BAAQMD Regulation 8, Rule 40	Relevant and appropriate	These requirements are applicable for excavation activities.
<b>Federal Hazardous Materials Transportation Law (Title 49 USC §§ 5101-5127)</b>					
Transportation of hazardous material	Sets forth requirements for transporting hazardous waste, including representations that containers are safe, prohibitions on altering labels, marking requirements, labeling requirements, and placarding requirements	Interstate carriers transporting hazardous waste and substance by motor vehicle	Title 49 CFR §§ 171.2(f), 171.2(g), 172.300, 172.301, 172.302, 172.303, 172.304, 172.312, 172.400, and 172.504	Relevant and appropriate	These requirements are relevant and appropriate for transporting hazardous materials on site.
<b>Toxic Substances Control Act (Title 15 USC, Chapter 53, §§ 2601-2692)</b>					
Storage for Disposal of PCBs	Requirements for temporary storage of PCB remediation waste	Storage for disposal of soils, debris, sludge, or dredged materials contaminated with PCBs at concentrations greater than 50 ppm	Title 40 CFR § 761.65	Relevant and appropriate	These requirements are potentially relevant and appropriate for disposal of PCB bulk remediation waste.

**TABLE B-4: ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)**

Final Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2, Hunters Point Shipyard, San Francisco, California

Action	Requirement	Prerequisite	Citation	Preliminary ARAR Determination	Comments
<b>State Water Resources Control Board</b>					
Stormwater Discharge	Order 99-08-DWQ is the State of California general permit for stormwater discharge from construction activities. It requires best management practices to reduce pollutants.	Stormwater discharge	Order 99-08 adopted pursuant to Title 40 CFR Part 122, Subpart G	Applicable	<p>Order 99-08 applies to dischargers whose projects disturb 1 or more acres of soil or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres. Dischargers are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity.</p> <p>Pursuant to the substantive permit requirements, best management practices will be taken to prevent construction pollutants from contacting storm water and to prevent erosion products from moving off site.</p>
<b>Air Resources Board</b>					
Construction or grading in soil containing asbestos	This regulation sets forth requirements for road construction and maintenance, construction and grading operations in soil containing naturally occurring asbestos, serpentine or ultramafic rock.	Soil containing naturally occurring asbestos, serpentine or ultramafic rock.	CCR Title 17 § 93105	Applicable	This regulation is potentially applicable for excavation activities if they will occur in areas containing asbestos, serpentine or ultramafic rock.

Notes:

§	Section	DOT	U.S. Department of Transportation
§§	Sections	DWQ	Division of Water Quality
ARAR	Applicable or relevant and appropriate requirement	et seq.	and the following ones
BAAQMD	Bay Area Air Quality Management District	PCB	Polychlorinated biphenyl
CCR	California Code of Regulations	ppm	Part per million
CFR	Code of Federal Regulations	USC	United States Code

**APPENDIX C**  
**REFERENCES**

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**APPENDIX D  
RESPONSES TO REGULATORY AGENCY COMMENTS ON THE  
DRAFT ACTION MEMORANDUM, TIME-CRITICAL REMOVAL ACTION  
FOR THE PCB HOT SPOT AREA AT PARCELS E AND E-2**

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**RESPONSES TO REGULATORY AGENCY COMMENTS ON THE  
DRAFT ACTION MEMORANDUM, TIME-CRITICAL REMOVAL ACTION FOR THE  
PCB HOT SPOT AREA AT PARCELS E AND E-2  
HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA**

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This document presents the Department of the Navy's (DON) responses to comments on the "Draft Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2, Hunters Point Shipyard, San Francisco, California," dated January 15, 2005. Comments on the draft action memorandum were received from Michael Work of the U.S. Environmental Protection Agency (EPA) on February 15, 2005; from Thomas Lanphar of the California Department of Toxic Substances Control (DTSC) on February 3, 2005; and from James Ponton of the San Francisco Bay Regional Water Quality Control Board (Water Board) on February 7, 2005. Comments were also received from community members at the public meeting held on January 25, 2005.

**RESPONSES TO COMMENTS FROM EPA**

**Overall Concern**

1. **Comment:** EPA has noted that the extent of contamination has not been delineated to 1 ppm (the proposed cleanup level); most of the sample locations along the western edge of the proposed excavation have PCB concentrations between 4 and 150 ppm. So, it is not clear that this action can achieve [the] cleanup goal. Further, it is not clear whether the 1 ppm cleanup level is protective of ecological receptors; such information is important since the DON has cited the threat to the San Francisco Bay as the reason for undertaking this action. We were anticipating being able to evaluate for other contaminants; however, that information is not provided in the Action Memorandum and the Parcel E Standard Data Gaps Investigation Data Summary Report (DSR) has been withdrawn. The Work Plan should include data for other contaminants.

**Response:** The DON recognizes that the 1 part per million (ppm) boundary is not defined. The first component of the removal action, as stated in Section V.A.1 on page 10 of the draft Action Memorandum, is to collect additional samples to characterize soils to define the extent of polychlorinated biphenyl (PCB) contamination. Section I, page 2, also states that pre-excavation characterization sampling and analysis will be used, in conjunction with other available information, to determine the final excavation boundary for the PCB hot spot area. Section I of the Action Memorandum was revised to more clearly indicate that additional sampling will be conducted, prior to excavation, to determine the excavation boundary.

The removal action will be protective of ecological receptors because the ecological exposure pathways for PCBs will be reduced. The removal action involves removing contaminated surface soil and replacing it with clean fill that will be graded and seeded to control erosion from storm water runoff. This removal action eliminates the direct contact and sediment runoff pathways. Section I, page 2, currently states that the time-critical removal action (TCRA) will limit the exposure pathways. Section I was revised to more clearly state how the TCRA will be protective.

Data for PCBs and other contaminants in the vicinity of the PCB hot spot area are provided in the draft final Parcel E Remedial Investigation Report (Tetra Tech EM Inc. [Tetra Tech] 1997). Data from the standard data gaps investigation (SDGI) for PCBs and other contaminants is now available in the "Parcels E and E-2 Standard Data Gaps Investigation Data Summary Report, Revision 01, Hunters Point Shipyard, San Francisco, California," dated March 24, 2005 (Tetra Tech 2005). The Action Memorandum has not been revised in response to this comment; however, the work plan will be revised to further address pre-excavation characterization sampling efforts.

## General Comments

- 1. Comment:** **The Draft Action Memorandum, Time-Critical Removal Action for the PCB Hot Spot Area at Parcels E and E-2 the Action Memorandum) does not provide sufficient justification for performing a time-critical removal action (TCRA). The need to construct the storm-water sedimentation basin is not mentioned, nor is the fact that recent sampling has indicated that polychlorinated biphenyls (PCBs) are present at higher concentrations and over a larger area than previously suspected. Please revise the Action Memorandum to include the need to construct a sedimentation basin and the recent finding that PCBs are present at higher concentrations than previously detected as additional justification for performing a TCRA.**

**Response:** As stated in Section III, page 8, of the draft Action Memorandum, the National Oil and Hazardous Substances Pollution Contingency Plan [NCP] (Title 40 *Code of Federal Regulations* [CFR] § 300.415[b][2]) requires that certain threats be considered when determining the appropriateness of a removal action. Sections III.A and III.B identify the threats that justify the PCB hot spot removal action. The DON sufficiently justified the need to conduct a TCRA by explaining that the following four threats apply to conditions at the PCB hot spot area:

- Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations or the food chain.
- Actual or potential contamination of drinking water supplies or sensitive ecosystems.
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.
- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

The PCB hot spot removal area is adjacent to the eastern shoreline of Hunters Point Shipyard (HPS) South Basin. The highest concentrations of PCBs in sediments observed in the south basin are found along the eastern shoreline with concentrations steadily decreasing with increasing distance from the shoreline. This suggests that the PCBs were likely transported to the offshore area via erosion or overland storm water transport of the contaminated soils from the removal action area.

The DON determined that a TCRA was appropriate based on the nature and extent of the contamination and DON plans to begin the removal action within 6 months. The DON wants to complete the removal action as soon as possible and prior to the next rainy season.

Once the PCB hot spot TCRA is implemented, construction of the formerly proposed sedimentation basin will no longer be necessary. The TCRA involves removing contaminated surface soil and replacing it with clean fill that will be graded and seeded to control erosion from storm water runoff. The best management practice for controlling storm water runoff, as stated in State Water Resources Control Board Order No. 99-08-DWQ, National Pollutant Discharge Elimination System, General Permit No. CAS000002, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity, is vegetating exposed surfaces. Section I of the Action Memorandum has been revised to indicate that the TCRA negates the necessity for construction of the sedimentation basin.

The DON evaluated all available data when developing the draft Action Memorandum, including the SDGI data. Section II.A.1 and Figure A-3 (formerly Figure A-2) were revised to include information about recent PCB data.

2. **Comment:** Throughout the Action Memorandum it is stated that the excavation depth will be 3 feet, but it is not clear how this depth was chosen or whether it will be sufficient to allow installation of the storm-water sedimentation basin. Please revise the Action Memorandum to clarify the rationale in deciding this proposed excavation depth.

**Response:** Section I, page 2, of the draft Action Memorandum stated that the basis for the proposed excavation depth of 3 feet is the open space reuse designation for the area. Under the open space scenario, human receptors may be exposed to surface soil to a depth of 2 feet and terrestrial ecological receptors may be exposed via burrows to a depth of 3 feet. As stated previously, construction of the sedimentation basin will not be necessary once the PCB hot spot area has been excavated, backfilled with clean fill, graded, and seeded to control storm water runoff. Section I of the Action Memorandum was revised to indicate that the TCRA negates the necessity for construction of the sedimentation basin.

3. **Comment:** Based on Figure A-2 and on the data table with PCB concentrations subsequently provided by the DON, only 3 of 23 locations along or near the proposed excavation boundary are below the proposed 1 ppm cleanup level, so it is unclear how the proposed excavation boundary was determined. The proposed action includes delineation of the extent of PCB contamination; if the extent of contamination is greater than estimated, the cost of this removal action could be impacted. Further, it is unclear what actions will be taken if contamination is found to extend into the intertidal saltmarsh (wetlands) or into the off-shore areas. Please explain how the proposed excavation boundary was determined and discuss whether there are any limitations on the size of the excavation that can be completed under this action. Also, please discuss the potential that contamination will extend into the wetlands or offshore and what will be done if that occurs.

**Response:** The focus of the TCRA is the PCB hot spot area shown on Figures A-2 and A-3 of the Final Action Memorandum. The proposed excavation boundary shown on these figures was determined using existing PCB soil data. The proposed pre-excavation sampling results will be used to refine the extent of PCB contamination. The TCRA may involve excavation within nearby wetlands but will not involve offshore excavation.

4. **Comment:** The relationship of the PCB hot spot area to the radium dial disposal area in IR-02 Northwest should be clarified. For example, the figures in the Action Memorandum do not include the radium dial disposal area, so readers cannot tell if the two areas overlap without doing research in other documents. It is also unclear if data collected between the two areas indicates that PCB contamination continues into the radium dial disposal area or if the PCB contamination is clearly limited to the northwestern portion of IR-02 Northwest. Please include the boundaries of [the] radium dial disposal area on a figure and discuss the relationship between the two areas in the text of the Action Memorandum, including whether PCB contamination continues from the PCB hot spot area into the radium dial disposal area.

**Response:** A new figure (titled Figure A-2) was added to show the PCB hot spot in relation to surrounding Parcel E and E-2 features, including the Installation Restoration Site (IR)-02 Northwest and Central removal area (radium dial disposal area). Based on existing data, continuous PCB contamination does not extend into the IR-02 Northwest and Central removal area; however, soil surrounding two borings within the IR-02 Northwest and Central removal area will be removed because PCB concentrations at the two borings exceed 100 ppm. The proposed pre-excavation sampling will define the extent of PCB contamination. Section I was revised to state that two borings within the IR-02 Northwest and Central removal area will be removed as part of the PCB hot spot removal action.

### Specific Comments

1. **Comment:** Section II.A.4, Release or Threatened Release, Page 5 and Section II.A.5, Maps, Pictures, and Other Graphic Representatives, Page 6: The text states that the concentrations of PCBs are included on Figure A-2, but this information was not provided. EPA Action Memorandum Guidance (EPA/540/P-90/004, 1990) states that when PCBs are of critical concern, the substance, quantity, location, and existing standards should be included in chart format. Please include PCB concentrations in a data summary table in the Action Memorandum or include these concentrations on Figure A-2.

**Response:** Figure A-3 (formerly Figure A-2) was revised to include PCB concentration information.

2. **Comment:** Section II.B, Other Actions to Date, Page 6: This section includes descriptions of previous actions but, per the Action Memorandum Guidance, the cost and effectiveness of previous actions should also be provided. Also, the shoreline debris removal action and the Parcels D/E stockpile removal action are not included. For clarity and completeness, and because this Action Memorandum will be a key part of the Administrative Record, please revise this section to include descriptions of the cost and effectiveness of the previous actions. Please include the shoreline debris removal action and the stockpile removal action. Similarly for current actions, revise the Action Memorandum to describe the actions currently underway, their cost and effectiveness, and how this TCRA relates to current actions.

**Response:** Summaries of previous actions conducted throughout Parcels E and E-2 are presented in Section II.B. The only previous action relevant to this TCRA is the groundwater plume at the IR-01/21 Industrial Landfill. The other previous actions are not located within the vicinity of the PCB hot spot area; therefore, costs and effectiveness are not relevant to the current activities. Section II.B.1 was revised to include cost and effectiveness information for the action for the groundwater plume at the IR-01/21 Industrial Landfill.

Section II.B.1 was also revised to include summaries, but not cost and effectiveness information, for the shoreline cleanup action and the stockpile removals at Parcels D and E. Section II.B.2 was revised to include summaries for other current actions at Parcels E and E-2, including the metal slag area, IR-02 Northwest and Central area, and the metal debris reef.

3. **Comment:** Section III.A, Threats to Public Health or Welfare, Page 9 and Section III.B, Threats to the Environment, Page 9: The descriptions of threats to public health or welfare and to the environment are very general. For example, it is unclear how human exposure could occur since Parcel E is fenced, which would limit direct contact with soil; specific pathways and realistic exposure scenarios should be provided to describe how PCB contamination could result in human exposure. According to the Action Memorandum Guidance, this discussion should be tailored to the specific site and receptors. In particular, this section should discuss specific human and environmental receptors who could be exposed to contaminants at the site and should provide realistic exposure scenarios. Please revise the Action Memorandum to describe specific threats to public health or welfare and environment in the PCB hot spot area. Please also provide specific pathways and realistic exposure scenarios for human and ecological receptors.

**Response:** The threats listed in Sections III.A and III.B are prescribed by NCP and DON guidance. Further detail regarding specific threats and exposure scenarios can be found in Sections I and II.A. The Action Memorandum was revised to note that the PCB removal area is adjacent to the eastern shoreline of HPS South Basin. The highest concentrations of PCBs in sediments observed in the south basin are found along the eastern shoreline with concentrations steadily decreasing with increasing distance from the shoreline. This suggests that the PCBs were likely transported to the offshore area via erosion or overland storm water transport of the contaminated soils from the removal action area.

4. **Comment:** Section V.A.1, Proposed Action Description, Page 10: The text of the first bullet states that additional samples will be collected to define the extent of PCB contamination, but does not acknowledge the fact that the horizontal and vertical extent of PCBs above the selected cleanup level of 1.0 parts per million (ppm) has not been defined. Based on Figure A-2, there are 23 locations along or near the proposed excavation footprint, but only three locations have PCB concentrations of 1 ppm or less. Please revise the text of this bullet to state that the extent of PCBs has not been determined.

**Response:** The DON recognizes that the 1 ppm boundary is not defined. The first component of the removal action, as stated in Section V.A.1 on page 10 of the draft Action Memorandum, is to collect additional samples to characterize soils to define the extent of PCB contamination. Section I, page 2, also stated that pre-excavation characterization sampling and analysis will be used, in conjunction with other available information, to determine the final excavation boundary. Section I of the Action Memorandum was revised to more clearly indicate that additional sampling will be conducted, prior to excavation, to determine the excavation boundary.

5. **Comment:** Section V.A.1, Proposed Action Description, Page 10: It is unclear how the 1 ppm cleanup goal was selected and whether 1 ppm is sufficiently protective of ecological receptors in the Bay, wetland, and upland areas. The Action Memorandum cites 1 ppm as a cleanup value that is protective of human health and does not discuss whether 1 ppm is protective of aquatic and terrestrial receptors. Further, the Parcel B Record of Decision established a cleanup level of 0.21 ppm. Please provide the basis for the 1 ppm cleanup goal and discuss whether it is protective of aquatic and terrestrial receptors.

**Response:** The TCRA cleanup goal of 1 ppm is based on Toxic Substances Control Act (40 CFR § 761.61) and site-specific factors. Section I of the Action Memorandum explains that the proposed TCRA involves excavating



PCB-contaminated soil to achieve cleanup levels in accordance with the risk-based approach for bulk PCB remediation waste in Title 40 CFR § 761.61(c). The section further explains that the site-specific cleanup goal of 1 ppm, calculated using methodology and exposure factors consistent with those outlined in the EPA Region 9 preliminary remediation goals (PRG) table (EPA 2004) and site-specific risk assessment methodology, is consistent with the regulations.

The TCRA will be sufficiently protective of ecological receptors because the ecological exposure pathways will be reduced. The TCRA involves removing contaminated surface soil and replacing it with clean fill that will be graded and seeded to control erosion from storm water runoff. Excavating and backfilling so that the area can be vegetated removes the direct contact and sediment runoff pathways. Section I was revised to more clearly state how the TCRA cleanup goal was developed and how the TCRA will be protective.

6. **Comment:** Section V.A.1, Proposed Action Description, Page 11: It is unclear if sidewall and bottom confirmation samples will be collected. Confirmation samples would further characterize this area and provide data for use in the risk assessment and/or to evaluate whether institutional controls will be necessary in this area.

**Response:** Side wall and bottom confirmation samples will be collected. Details regarding sidewall and bottom confirmation sampling are provided in the TCRA work plan (Tetra Tech ECI 2005a). The Action Memorandum was not revised in response to this comment.

7. **Comment:** Section V.A.3, Description of Alternative Technologies, Page 12: This section does not address the potential impact this TCRA would have on Hunters Point or the surrounding community. Please revise the Action Memorandum to discuss potential impacts from the action including traffic noise and dust associated with disposal of contaminated soil via trucks and associated with the import of clean fill. In this discussion describe the source of clean fill and clarify whether transport of fill will contribute to traffic, noise, and dust during transport to and from Hunters Point Shipyard.

**Response:** Section V.A.3 of the Action Memorandum was revised to include text stating that the short-term impacts to the HPS and surrounding community will be minimized through the use of engineering controls and strict traffic schedules consistent with other removal and remedial actions implemented at HPS. Specific details regarding traffic patterns, noise control measures, and the source of backfill are provided in the TCRA work plan (Tetra Tech ECI 2005a); these details are not typically provided

in the Action Memorandum. Dust control measures are provided in the Dust Control Plan (Tetra Tech ECI 2005b).

8. **Comment:** Section V, Proposed Actions and Estimated Costs, B, Estimated Costs, Page 14: The description of estimated costs is too general for reviewers and the public to be able to evaluate whether the costs are reasonable. A single rate of \$250 cubic yard is provided, but the TCRA involves both excavation/confirmation sampling and disposal work. Also, this section lists direct and indirect capital costs; it would be helpful if the cost estimate was broken down to at least this level of detail. Please revise the description of estimated cost to include a breakdown using the categories listed in the section (e.g., construction costs, equipment and material costs, transportation and disposal costs, and sampling and analytical costs), clarify how the \$250 per cubic yard rate was calculated, and specify the percent contingency included.

**Response:** Although the level of cost detail provided in the draft Action Memorandum is consistent with that suggested by the guidance for TCRAs, Section V.B was revised to provide cost break down information.

#### Minor Comments

1. **Comment:** Section IV, Endangerment Determination, Page 10: It is unclear why the text refers to "HPS PRGs" since the documents cited in the text are the USEPA Region 9 Preliminary Remediation Goal (PRG) Table, the EPA Integrated Risk Information System (Online Database), and the California Environmental Protection Agency Toxicity Criteria Database. These are not Hunters Point specific references, so the PRGs cannot be considered HPS PRGs. Please provide Hunters Point specific references for the "HPS PRGs" or delete this phrase.

**Response:** The phrase "HPS PRG" will be deleted from the text.

2. **Comment:** Section V, Proposed Actions and Estimated Costs, B, Estimated Costs, Page 15: In the last sentence in this section it is stated that this action is "the first proposed action." It is unclear as to why this is a first proposed action. Please revise the Action Memorandum to include a discussion as to why this is a first proposed action.

**Response:** Section V.B was revised to remove the word "first."

## RESPONSES TO COMMENTS FROM DTSC

### General Comments

1. **Comment:** Section B.1. Previous Actions. Please include a brief summary of remedial investigation activities in this section in order to provide a history of the characterization activities that identified the PCB hot spot. The Parcel E Standard Data Gaps Investigation is especially important in this discussion because this investigation provided additional data that helped describe the extent of PCB and other contamination in the area of the planned removal action.

**Response:** Data in the vicinity of the PCB hot spot area are provided in the "Draft Final Parcel E Remedial Investigation Report" (Tetra Tech, Levine-Fricke-Recon, and Uribe & Associates 1997). Data from the SDGI are now available in the "Parcels E and E-2 SDGI Data Summary Report, Revision 01," dated March 24, 2005 (Tetra Tech 2005). Section II.A.1 of the Action Memorandum was revised to briefly summarize investigation activities.

2. **Comment:** Section V.A.1. Proposed Action Description. The DON will survey for radiological materials and remove point sources as necessary. How will the DON manage any radiological material that is identified and removed during the activity?

**Response:** Specific details regarding handling of radiological material are provided in the TCRA work plan (Tetra Tech ECI 2005a); these details are not typically provided in the Action Memorandum. Section I of the Action Memorandum was revised to state that specific construction details for implementing the TCRA, including handling of radiological material, are presented in the TCRA work plan.

3. **Comment:** Section V.A.1. Proposed Action Description. Real-time air monitoring will be conducted during the removal action. Please expand the statement in the text to include answers to the following questions: What will the air be monitored for? When will monitoring take place? When will the data be available? What are the action levels and what will be done if levels are exceeded?

**Response:** The details requested by DTSC are addressed in the Dust Control Plan (Tetra Tech ECI 2005b). Section I of the Action Memorandum was revised to state that air monitoring details are presented in the dust control plan.

4. **Comment:** Section V.A.1. Proposed Action Description. Please clarify in the text if the groundwater will be tested and how the DON will dispose the groundwater.

**Response:** No groundwater will be collected or disposed of during this TCRA. If saturated soils require excavation, the saturated soils will be excavated and placed on a dewatering pad. The TCRA work plan describes the dewatering pad and dewatering process. Section V.A.1 was revised to remove the bullet referring to groundwater collection and disposal.

5. **Comment:** Section V.A.1. Proposed Action Description. Please elaborate on what is meant by a risk-based approach to determine location and frequency of confirmation samples.

**Response:** Remediation of PCBs, as described in 40 CFR § 761.61, allows three options for compliance: self implementing, performance-based, and risk-based. The DON is undertaking the TCRA following the risk-based requirements for compliance. The TCRA work plan provides the protocol for determining the frequency and location of confirmation samples based on the final size and depth of the excavation. Section V.A.1 was revised to delete the phrase "risk-based approach" when referring to confirmation sampling.

6. **Comment:** Section V.A.1. Proposed Action Description. The Parcel E Standard Data Gaps Investigation detected metal, pesticide, and PAH contamination in exceedences of the Parcel E Screening Criteria in the location of the PCB hot spot removal action. The removal action will remove some of these sample locations. The proposed confirmation sampling will only evaluate soil for PCB, TPH and radionuclides. In order to know what contamination (metals, pesticides, PCBs, TPH and radionuclides) remains after the removal action confirmation sampling that include all analytes of concern at Site 01/21 is requested. Please expand the analytes in confirmation samples to include metals and pesticides.

**Response:** Specific details regarding confirmation sampling and analysis are provided in the TCRA work plan (Tetra Tech ECI 2005a); these details are not typically provided in the Action Memorandum. Section I of the Action Memorandum was revised to state that specific details for implementing the TCRA, including confirmation sampling and analysis, are presented in the TCRA work plan.

7. **Comment:** Section V.A.1. Proposed Action Description. The DON might consider the use of a windsock or flag designed to convey wind direction and speed while the cleanup activity is occurring.

**Response:** A windsock and wind monitoring station will be used and are described in the Dust Control Plan (Tetra Tech ECI 2005b). In addition, a 10-meter meteorological station is located on Parcel E-2, approximately 350 feet to the northeast of the PCB hot spot area. The meteorological station records wind speed, wind direction, air temperature, barometric pressure, relative humidity, and precipitation every second, and is used to develop hourly averages (totals for precipitation) of each parameter. The meteorological station is in close proximity to the PCB hot spot area. The Action Memorandum was not revised in response to this comment.

8. **Comment:** Section V.A.1. Proposed Action Description. Please identify the wind conditions under which remedial activities would cease.

**Response:** A high wind scenario during the removal action could potentially create unsafe work conditions, and may cause a work stoppage until the wind conditions improve. The action level is set at wind speeds of 25 miles per hour. For specific information regarding a work stoppage due to wind conditions, please refer to the Dust Control Plan (Tetra Tech ECI 2005b). The Action Memorandum was not revised in response to this comment.

9. **Comment:** Section V.A.2. Contribution to Remedial Performance. The text states that the excavation shall proceed to three feet below the surface. In other areas of Hunters Point Shipyard the DON will investigate, calculate risk and potentially cleanup to a depth of 10 feet. Please clarify why in this area cleanup to 3 feet is sufficient.

**Response:** Section I, page 2, of the draft Action Memorandum stated that the basis for the proposed excavation depth of 3 feet is the open space reuse designation for the area. Under the open space scenario, human receptors may be exposed to surface soil to a depth of 2 feet and terrestrial ecological receptors may be exposed via burrows to a depth of 3 feet. The Action Memorandum was not revised in response to this comment.

10. **Comment:** Section V.A.3. Description of Alternative Technologies. This section only includes a description of the excavation and off-site disposal technology. Please include a discussion of other alternative technologies in this section, including no-action, treatment, and alternatives that could limit the transport of sediment to the bay.

**Response:** In accordance with EPA action memorandum guidance (EPA 1990) as well as DON action memorandum guidance, discussion of other alternatives is not required for TCRAs. The Action Memorandum was not revised in response to this comment.

## RESPONSES TO COMMENTS FROM WATER BOARD

### General Comments

1. **Comment:** Sheet Pile Wall and Groundwater Extraction System: The PCB Action Memo states that a removal action (in the vicinity of the PCB hot-spot) consisting of a 600-foot long sheet pile wall and groundwater extraction system was conducted in 1997 in an effort to abate the migration of groundwater containing hazardous substances to the San Francisco Bay. Figure A-2 depicts the sheet pile wall and extraction system as falling within the proposed TCRA excavation footprint.

Staff's concerns center on what appears to be an increased potential for the migration of groundwater containing hazardous substances to the Bay should the sheet pile wall and groundwater extraction system be removed as part of the TCRA. Staff notes, that with the exception of Figure A-2, the PCB Action Memo does not describe removal of the remediation system (sheet pile wall and associated extraction wells), although as described above, it appears to fall within the excavation footprint.

Staff requests that the DON expand on:

- a.) The anticipated effect on groundwater pollution migration to the Bay should the groundwater remediation system be removed as part of this TCRA;
- b.) Plans (including a schedule) that are in the works to monitor the groundwater along the shoreline for pollution migration should the groundwater remediation system be removed during the proposed TCRA; and,
- c.) What plans are in the works to replace the groundwater extraction system and monitoring well network in the event it is removed during the proposed TCRA.

**Response:** Specific details regarding protection of the groundwater extraction system are provided in the TCRA work plan (Tetra Tech ECI 2005a); these details are not typically provided in the Action Memorandum. The sheet-pile wall component of the groundwater control system will not be removed during the TCRA. Efforts will be made during construction activities to protect the groundwater extraction system. Section I of the Action Memorandum was

revised to state that specific construction details for implementing the TCRA, including protection of the groundwater extraction system and TCRA schedule, are presented in the TCRA work plan.

2. **Comment:** Section 1.0, page 2 and Section V.A.1, page 10: The purpose of the PCB Action Memo states that pre-excavation sampling and analysis, field observations, existing data, and field conditions will determine the final PCB excavation boundary. The Proposed Action Description on page 10 states that the removal action objective include, among other things, collecting additional samples to define the extent of the PCB contamination, where necessary.

Staff suggests revising the Introduction (discussion on final PCB excavation boundary) to state upfront that additional soil sampling/characterization is planned for establishing the final extent of the proposed PCB excavation. As the Purpose is currently written, the final excavation boundary appears to rely on an existing, pre-excavation analytic data set.

**Response:** Section I, page 2, does state that pre-excavation characterization sampling and analysis will be used, in conjunction with other available information, to determine the final excavation boundary. Section I of the Action Memorandum was revised to more clearly indicate that additional sampling will be conducted, prior to excavation, to determine the excavation boundary.

3. **Comment:** Section 1.0, page 2, Section 2, page 11, Figure A-2: The PCB Action Memo states that as part of this Time-Critical Removal Action (TCRA), soils with PCB concentrations exceeding 1 part per million (ppm) will be excavated and appropriately disposed of offsite. The excavation will be backfilled with clean soil thus creating a 3-foot cover. Figure A-2 shows a plan view of the sampling locations where PCB concentrations exceeding 1 ppm exist in soil between 1 and 3 feet below ground surface and the proposed excavation boundary.

Staff notes that:

- The elevation contours projected on Figure A-2 show ground elevations within the excavation footprint ranging from about +12 ft to approx. 1 ft above sea level;
- There appear to be no sampling points located outside the excavation footprint that meet the 1 ppm remediation goal (define the lateral limits of excavation);
- There appear to be no sampling data located within a significant middle/southern portion of the excavation to steer the proposed TCRA;

- There is no depiction of the vertical distribution of the PCB hot spot either via cross section and/or data postings (spider diagrams, etc); and,
- The PCB hot-spot excavation appears to fall within the general location of the proposed sedimentation area (Figure 4, Drainage Patterns and BMPs at IR-01/21, September 30, 2004 Storm Water Discharge Management Plan, Industrial Landfill, Parcel E2).

Staff requests that the Action Memo text and supporting figures be revised to more clearly explain and depict:

- a.) The location of the suspected source area (former drum storage area) relative to the excavation footprint;
- b.) The measures that will be employed/taken to protect the Bay from sediment transport should the PCB excavation extend to below sea level along the northwestern stretch of the Parcel E/E2 shoreline; and,
- c.) The relationship between Landfill E-2/IR-12-originating storm water (i.e., surface flow directions, retention areas, discharge points) and the existing PCB hot spots, excavation footprint, and proposed sedimentation area.

- Response:**
- (a) Appendix A has been revised to include a new figure (Figure A-2) that depicts the location of the suspected source (Triple A Machine Shop, Inc. site), surface flow directions, discharge points, the formerly proposed sedimentation basin, and the location of the radiological removal action (see EPA General Comment 4) relative to the proposed PCB excavation footprint.
  - (b) The details requested by the Water Board staff are addressed in the TCRA work plan, which contains a storm water pollution prevention plan (Tetra Tech ECI 2005a); these details are not typically provided in the Action Memorandum. Section I of the Action Memorandum was revised to state that specific construction details for implementing the TCRA, including sediment transport control measures, are presented in the TCRA work plan.
  - (c) Please see the response to (a) above.

4. **Comment:** Section 5.0, ARARs: Section 5.0 states that as the lead federal agency, the DON has primary responsibility for identifying federal ARARs at HPS. Staff does not recall a solicitation for State ARARs with respect to this TCRA.

**Is the identification/solicitation of State ARARs required for the proposed TCRA?**



**Response:** The DON is not required to solicit State applicable or relevant and appropriate requirements (ARAR) for removal actions. The Action Memorandum was not revised in response to this comment.

5. **Comment:** **Section 6.0, Project Schedule:** The TCRA is expected to begin in the first half of 2005 and be completed by summer 2005. Given the schedule, Staff infers that a part of the removal action will occur over the rainy season and that the proposed excavation appears to fall within the confluence of surface water flow paths (as shown on Figure 4 of the September 30, 2004 Storm Water Discharge Management Plan for Parcel E-2).

**Please expand on what measures will be taken to manage storm-water during the excavation phase of the proposed TCRA.**

**Response:** The DON intends to conduct clearing and grubbing and pre-excavation sampling activities during mid-2005. Intrusive excavation activities will not begin until late spring 2005, when the likelihood of rain is much less. The details requested by the Water Board staff are addressed in the TCRA work plan, which contains a storm water pollution prevention plan (Tetra Tech ECI 2005a); these details are not typically provided in the Action Memorandum. Section I of the Action Memorandum has been revised to state that specific construction details for implementing the TCRA, including sediment transport control measures, are presented in the TCRA work plan.

#### **RESPONSES TO COMMENTS FROM Ms. ESPANOLA JACKSON DURING PUBLIC MEETING ON JANUARY 25, 2005**

1. **Comment:** Are you going to make sure that the [truck] tires are clean, washed down, before they come out of this gate [leave the site]?

**Response:** Trucks tires will be cleaned before leaving the site. Specific construction details for implementing the TCRA, including decontamination procedures, are presented in the TCRA work plan (Tetra Tech ECI 2005a). The Action Memorandum was not revised in response to this comment.

2. **Comment:** I wanted to know whether or not that will be done, because I would really like to know why is it that you all are not using barges, really, to take that out of here? Because way over there on the Palou Street side where Parcel E is, you'll bring it all around. That's a long way to here to go to Innes, Evans. And then you said the other street.

**Response:** The DON determined that it is more cost effective to use trucks rather than barges.

**RESPONSES TO COMMENTS FROM MR. KEITH TISDELL DURING PUBLIC MEETING ON  
JANUARY 25, 2005**

1. **Comment:** The first one [question] is, how close to the landfill is it [the PCB removal action area]?

**Response:** The PCB hot spot area is located adjacent to and southeast of the landfill. A new figure (Figure A-2) is now included in the Action Memorandum that shows other site features, including the landfill, in relation to the PCB hot spot area.

2. **Comment:** The second question, wasn't there those radium -- didn't you remove radium dials before? I know it came up in a RAB -- I don't know if it was removed or not.

**Response:** The DON will be conducting a radiological removal action in IR-02 Northwest and Central concurrently with the PCB hot spot TCRA (see Figure A-2). If radiological material is encountered at the PCB hot spot removal area, it will be removed.

3. **Comment:** The third question is, how would you differentiate between the truckers who are actually doing this work and then the other trucks coming and going? You know, before, with the community, we have got on you guys, and there have been other trucks not having to do with what the DON is doing. So would -- how would you differentiate with that? So that may be one of the questions, you know, to be asked later on.

**Response:** The removal action area will be fenced. Only truckers providing hauling and transport services for the TCRA are allowed access to the area. The project work plan provides specific procedures for trucker sign in and sign out (Tetra Tech ECI 2005a). Trucks leaving the removal action area will undergo procedures outlined in the TCRA work plan, including tire washing and covering the load with a secured tarp.

**RESPONSES TO COMMENTS FROM MS. HANNE LLOYD DURING PUBLIC MEETING ON JANUARY 25, 2005**

- 1. Comment:** What I've seen other trucks do -- like, over on Illinois and 22nd Street there's a dump where the trucks go and dump stuff, and then there's, like, a dip. The trucks have to roll through this, like, water dip that cleans the tires. It's a very simple type thing. Like he said, there are all kinds of different trucks, you know, contaminant trucks and regular trucks. And I think all vehicles with all that stuff need to go through some kind of water dip, not just the trucks with the contamination but any vehicle coming in and out of here, since you have all this dust going on. So that's just a comment. And then my question is the water runoff as things get watered down and as it rains, whatever, like storm drains and stuff. Is there some type of filtration system?

I was told they're using, like, haystacks to kind of filter the soil and the silt from going into the bay. So my concern is the water runoff, how that is being treated or -- are there haystacks or something like that they're using to filter water?

How often are those so-called haystacks being monitored and replaced as they get saturated?

**Response:** Decontamination will be conducted in a contained area within the fenced PCB hot spot area. Water generated from decontamination operations during the TCRA will be collected and disposed of off site. Current storm water control measures include hay bales and fiber rolls that filter the storm water before it enters the bay. Once the TCRA is complete, the area will be graded and seeded to control erosion from storm water runoff and the fiber rolls will no longer be needed in the area. The TCRA work plan (Tetra Tech ECI 2005a) provides details regarding how frequently the hay bales and fiber rolls are inspected.

## REFERENCES

- Tetra Tech ECI. 2005a. "Draft Project Work Plan for Parcels E and E-2 PCB Hot Spot Area, Hunters Point Shipyard, San Francisco, California." Prepared for Base Realignment and Closure, Program Management Office West (BRAC PMO West). February 25.
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- Tetra Tech EM Inc. (Tetra Tech). 2005. "Parcels E and E-2 Standard Data Gaps Investigation Data Summary Report, (Revision 01), Hunters Point Shipyard, San Francisco, California." Prepared for BRAC PMO West. March 24.
- Tetra Tech, Levine-Fricke-Recon, and Uribe & Associates. 1997. "Draft Final Parcel E Remedial Investigation Report, Hunters Point Shipyard, San Francisco, California." Prepared for Naval Facilities Engineering Command, Engineering Field Activity West. October 27.
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