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TREASURE ISLAND
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Final

Record of Decision/Final Remedial Action Plan for Installation Restoration Site 12 (Non-Solid Waste Disposal Areas and Non-Radiological)

Former Naval Station Treasure Island
San Francisco, California

March 2017

Prepared by:
Department of the Navy
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Prepared under:
Naval Facilities Engineering Command
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ACRONYMS AND ABBREVIATIONS

µg/L	Micrograms per liter
§	Section
AOI	Area of interest
ARAR	Applicable or relevant and appropriate requirement
BaP	Benzo(a)pyrene
bgs	Below ground surface
BHC	Benzene hexachloride
BRAC	Base Realignment and Closure
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHHSL	California Human Health Screening Level
COC	Chemical of concern
CSM	Conceptual site model
CTR	California Toxics Rule
DDD	Dichlorodiphenyldichloroethane
DTSC	Department of Toxic Substances Control
EBS	Environmental baseline survey
EPA	U.S. Environmental Protection Agency
EQ	Equivalent concentration
EU	Exposure unit
FS	Feasibility study
HHRA	Human health risk assessment
HI	Hazard index
HRA	Historical radiological assessment
HRASTM	Historical radiological assessment supplemental technical memorandum
IC	Institutional control
LUC	Land use control
mg/kg	Milligrams per kilogram
MNA	Monitored natural attenuation
NA	Not available
NAVSTA TI	Naval Station Treasure Island
NBAR	Nonbinding allocation of responsibility
NCP	National Oil and Hazardous Substances Pollution Contingency Plan

ACRONYMS AND ABBREVIATIONS (CONTINUED)

ng/kg	Nanograms per kilogram
NS1	Groundwater non-source area one
O&M	Operation and maintenance
ORC	Oxygen-release compound
OU	Operable unit
PA/SI	Preliminary Assessment and Site Inspection
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated biphenyls
PRB	Permeable reactive barrier
PRP	Potential responsible party
RAB	Restoration Advisory Board
RAO	Remedial action objective
RAP	Remedial action plan
RBC	Risk-based concentration
RI	Remedial investigation
RME	Reasonable maximum exposure
ROD	Record of Decision
SLERA	Screening-level ecological risk assessment
SVOC	Semivolatile organic compound
SWDA	Solid waste disposal area
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxicity equivalent
TI	Treasure Island
TPH	Total petroleum hydrocarbons
TPH-d	Total petroleum hydrocarbons diesel range
TPH-g	Total petroleum hydrocarbons gasoline range
TPH-m	Total petroleum hydrocarbons motor oil range
TSCA	Toxic Substances Control Act
UST	Underground storage tank
UU/UE	Unlimited use and unrestricted exposure
U.S.C.	United States Code
VOC	Volatile organic compound
Water Board	San Francisco Bay Regional Water Quality Control Board

1.0 DECLARATION

This Record of Decision/Final Remedial Action Plan (ROD/Final RAP) presents the soil and groundwater remedies selected by the Department of the Navy for Installation Restoration Site 12, the Old Bunker Area Non-Solid Waste Disposal Areas, at former Naval Station Treasure Island (NAVSTA TI), in San Francisco, California. Former NAVSTA TI is located in San Francisco Bay, midway between San Francisco and Oakland, California (Figure 1). Site 12 is located on the northeastern portion of former NAVSTA TI (Figure 2). Site 20 is located within Site 12.

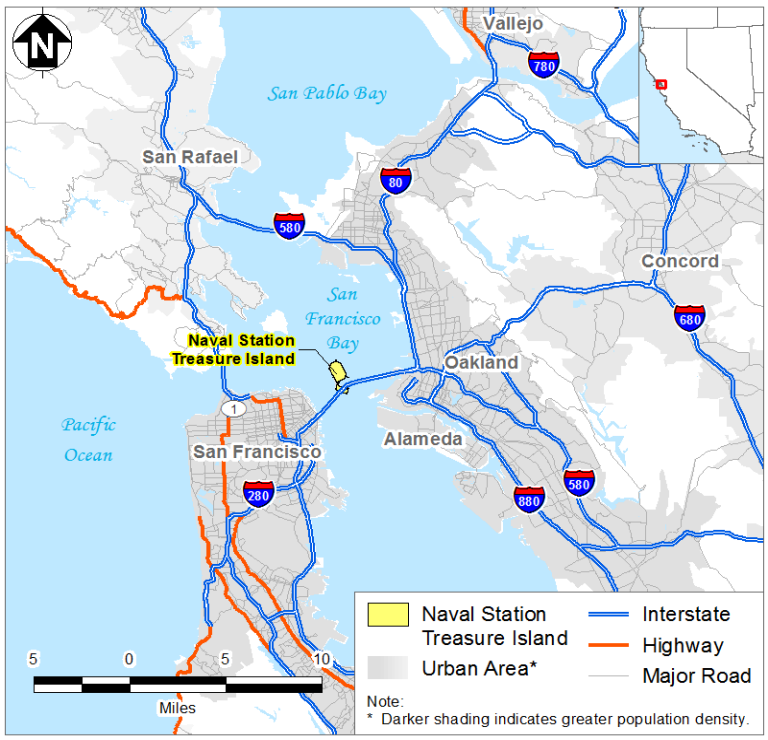

Figure 1. Location of Former Naval Station Treasure Island

The remedial action decision documented in this ROD/Final RAP does not apply to the solid waste disposal areas (SWDA) or radiological contamination within Site 12. The SWDAs and radiological contamination will be addressed in separate documentation. The ROD/Final RAP does not affect or address Site 20, which is located within Site 12, or any other site at former NAVSTA TI.

The remedies were selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (Title 42 United States Code [U.S.C.] Section [§] 9601, et seq.), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (Title 40 Code of Federal Regulations Part 300). Former NAVSTA TI has not been placed on the CERCLA National Priorities List. The CERCLA Information System identification number for former NAVSTA TI is CA7170023330.

The Navy is the lead Federal agency under CERCLA for former NAVSTA TI and has selected the (non-radiological) remedies for soil and groundwater at Site 12. The California Environmental Protection Agency (Department of Toxic Substances Control [DTSC] and the San Francisco Bay Regional Water Quality Control Board [Water Board]) concur with the selected remedies. The decision documented in this non-SWDA and non-radiological ROD/Final RAP is based on and relies

on the Administrative Record[1] file (Attachment A). Information that is not specifically summarized in this ROD/Final RAP or its references, but that is contained in the Administrative Record, has been considered and is relevant to the selection of the remedies at Site 12.

Figure 2. Location of Site 12

The Navy provides funding for site remediation at former NAVSTA TI under the Base Realignment and Closure (BRAC) program. The Federal Facility Site Remediation Agreement for former NAVSTA TI establishes a consultative framework for the Navy to implement the requirements of CERCLA in partnership with the DTSC and the Water Board.

Investigations into the release of hazardous substances, hazardous waste, petroleum constituents, and other regulated substances began at Site 12 in 1988, and subsequent reports documented the releases of CERCLA hazardous substances. In general, CERCLA is not intended to address petroleum releases because CERCLA § 120(14) excludes petroleum from the definition of a CERCLA hazardous substance. CERCLA, however, can be used to address petroleum if the petroleum is collocated with CERCLA hazardous substances. This non-SWDA and non-radiological ROD/Final RAP will address releases of petroleum at the Gateview Arsenic/Total Petroleum Hydrocarbon (TPH) Area because the petroleum is collocated with arsenic and caused naturally occurring arsenic in soil to dissolve into groundwater.

1 **Bold blue text** identifies detailed site information available in the Administrative Record (Attachment A) and listed in the References table (Attachment B). This ROD/Final RAP is also provided on CD, whereby **bold blue text** serves as a hyperlink to reference information. The hyperlink will open a text box at the top of the screen. A blue box surrounds applicable information in the hyperlink. To the extent there may be inconsistencies between the referenced information attached to the ROD/Final RAP via hyperlinks and the information in the ROD/Final RAP itself, the language in this ROD/Final RAP controls.

The investigations completed at Site 12 were used to prepare the 2012 remedial investigation (RI) and the subsequent feasibility study (FS) and FS addendum reports in 2014 and 2015. The RI included a human health risk assessment (HHRA) and an aquatic habitat assessment to evaluate the potential risk to aquatic receptors through the groundwater discharge to surface water pathway. A screening-level ecological risk assessment (SLERA) for terrestrial receptors was previously conducted in 2007. After the SLERA was finalized, an additional analysis of potential ecological risk was completed because changes in land use were identified. Results of the additional analysis were documented in the FS addendum and show that implementation of the remedial action to meet remedial action objectives (RAO) and remediation goals for human health will be protective of ecological receptors. Based on the results of the HHRA, the following chemicals of concern (COC) were identified for soil: lead, polychlorinated biphenyls (PCB), dioxins, and polycyclic aromatic hydrocarbons (PAH). These COCs were identified for the protection of current and future residents. The Navy will address the following additional chemicals in soil, although they were not identified as COCs: pesticides 4,4-dichlorodiphenyldichloroethane (DDD) and alpha-benzene hexachloride (BHC), total chromium, and TPH (as associated with arsenic in groundwater). No chemicals of ecological concern were identified for terrestrial ecological receptors at Site 12. Only one COC was identified for groundwater: arsenic. Arsenic was identified for the protection of off-site aquatic receptors in San Francisco Bay.

1.1 SELECTED REMEDIES

The chemical remedy selected in this non-SWDA and non-radiological ROD/Final RAP is necessary to protect public health, welfare, and the environment from actual or potential releases of CERCLA hazardous substances at the site.

The selected remedy for soil includes:

- Excavate discrete locations of contaminated soil and dispose of the soil off site.

The selected remedy for groundwater at the Gateview Arsenic/TPH Area includes:

- Excavate petroleum in soil; add oxygen-release compound (ORC), if necessary;
- Conduct in situ soil mixing with chemical oxidants, if necessary; and
- Monitor the groundwater to confirm the reduction of arsenic concentrations.

The remedies are protective of human health and the environment, comply with federal and state statutes and regulations that are determined to be applicable or relevant and appropriate requirements (ARAR), and are cost-effective. No source materials that constitute principal threat waste are present at Site 12. The remedies use permanent solutions and alternative treatment technologies to the maximum extent practicable. The groundwater remedy satisfies the statutory preference for treatment because it includes treatment with ORC and chemical oxidants.

CERCLA § 121 requires 5-year reviews (statutory reviews) of sites where the remedial action does not achieve concentrations of hazardous substances acceptable for unlimited use and unrestricted exposure (UU/UE). CERCLA 5-year reviews are also done as a matter of policy (policy reviews) when UU/UE will result when the remedy has been completed, but completing the remedy (achieving the RAO and remediation goals) takes longer than 5 years. The remedy selected for soil will achieve UU/UE in less than 5 years. Therefore, the Navy will not complete CERCLA 5-year statutory or policy reviews for the soil remedy. The remedy selected for groundwater will also achieve UU/UE; however, achieving the RAO and remediation goal is expected to take longer than 5 years. As a result, statutory reviews of the groundwater remedy are not required; however, the Navy will complete CERCLA 5-year policy reviews of the groundwater remedy until the remediation goal is met.

1.2 DATA CERTIFICATION CHECKLIST

The following information is included in Section 2.0 of this non-SWDA and non-radiological ROD/Final RAP. Additional information can be found in the Administrative Record file for this site, Attachment A.

COCs	Section 2.5
Baseline risk represented by the COCs	Section 2.5
Cleanup goals established for COCs and the basis for these goals	Section 2.8
Principal threat waste	Section 2.7
Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater	Section 2.4
Potential land and groundwater use that will be available at the site as a result of the selected remedy	Section 2.10.3
Estimated capital costs, operation and maintenance (O&M), and total present-worth costs; discount rate; and the number of years over which the remedy cost estimate is projected	Tables 5 and 6
Key factors that led to selecting the remedy (for example, a description of how the selected remedy provides the best balance of trade-offs with respect to the balancing and modifying criteria, with emphasis on criteria key to the decision)	Section 2.10.1

If contamination posing an unacceptable risk to human health or the environment is discovered after execution of this non-SWDA and non-radiological ROD/Final RAP, the Navy will undertake all necessary actions to ensure continued protection of human health and the environment.

1.3 AUTHORIZING SIGNATURES

This signature sheet documents the Navy's selection of the remedies in this non-SWDA and non-radiological ROD/Final RAP. This signature sheet also documents the State of California's (DTSC and Water Board) concurrence with this non-SWDA and non-radiological ROD/Final RAP. The parties may sign this sheet in counterparts.

2/9/2017

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2.0 DECISION SUMMARY

2.1 SITE DESCRIPTION AND HISTORY

Former NAVSTA TI is located in San Francisco Bay, within the City and County of San Francisco. The former naval station consists of two contiguous islands connected by a causeway. The northern island, Treasure Island (TI), encompasses about 403 acres, and the southern island, Yerba Buena Island, encompasses about 147 acres (Figure 2). TI was constructed on the shoals of Yerba Buena Island with San Francisco Bay fill between 1936 and 1937 for use as an airport for the City of San Francisco. It was also the site of the 1939 Golden Gate International Exposition. Navy operations at TI began in 1941, primarily for training, administration, housing, and other support services to the U.S. Pacific Fleet. In 1993, the Defense Base Realignment and Closure Commission recommended closure of NAVSTA TI, and the facility was subsequently closed on September 30, 1997.

Figure 3. Site 12 Current Features

Site 12 is located on the northeastern portion of the island (Figure 2). Site 20 is located within Site 12; however Site 20 is not being addressed in this non-SWDA and non-radiological ROD/Final RAP. Historically, Site 12 contained a runway when NAVSTA TI was to be used as an airport, and then was used for vehicle parking area during the Golden Gate International Exposition. After the Navy took over NAVSTA TI and throughout the 1940s, 1950s, and 1960s, land uses at Site 12 included ammunition storage in bunkers, debris and trash disposal in disposal units and general SWDAs around the bunkers, incineration of waste, solid waste storage, oil storage, and radiological training on the USS Pandemonium. From approximately 1966 to 1988, four phases of military housing were constructed at Site 12 (the 1100, 1200, 1300, and 1400 series). Prior to constructing the housing, the ammunition bunkers, incinerator, and trash trailer were removed and the areas, now referred to as the SWDAs, were graded and debris was spread out in areas away from the SWDAs. Currently, Site 12 contains the military housing series constructed from 1966 to 1988 (Figure 3).

2.2 SITE CHARACTERISTICS

The topography at TI is flat, consisting primarily of sand dredged from the San Francisco Bay and topsoil from the Sacramento-San Joaquin Delta; TI is retained by a perimeter of rock and sand dikes. All land above sea level, and extending to depths between approximately 10 and 50 feet below sea level, is composed of fill. The dredged fill and shoal deposits predominantly consist of fine- to coarse-grained sand, with varying proportions of shell fragments, silt, and clay. The dredged fill was placed on top of the shoal sand during construction of TI. Underlying the shoal sand is a soft Bay Mud deposit, which overlies a former channel of Temescal Creek. The estimated depth of the former channel is 95 feet below mean sea level.

Surface cover at Site 12 is a combination of concrete, asphalt, lawns, and landscaping. Surface runoff flows into storm drains in multiple locations within the site and is conveyed directly into San Francisco Bay. There are no perennial surface water bodies located at Site 12.

The average annual temperature at TI is 59.5°F. The average annual precipitation is about 23 inches. Approximately 90 percent of the annual precipitation occurs from November to April. The prevailing wind direction for the Bay Area is from the northwest.

The terrestrial habitat at NAVSTA TI is of poor quality for wildlife species because the island is predominantly covered with urbanized areas and, currently, Site 12 does not contain significant habitat. However, changes to land uses identified for redevelopment include three types of uses for the open space: Northern Shoreline Park, the Wilds, and stormwater wetlands. The stormwater wetlands and the Wilds are land use types that create habitat and could result in the presence of terrestrial ecological receptors.

Groundwater characteristics at Site 12 are typical of groundwater characteristics at NAVSTA TI. Groundwater at Site 12 is encountered from approximately 2.5 to 7.5 feet below ground surface (bgs). Groundwater generally flows in a radial pattern from the center of TI to San Francisco Bay. Groundwater elevations are tidally influenced and fluctuate by approximately 1.81 feet at near-shore locations (30 feet from the bay), and by approximately 0.12 foot at inland locations (250 feet from the bay). In addition, the degree of tidal mixing of surface water and groundwater at NAVSTA TI ranged from 10 to 17 percent brackish bay water mixed with 90 to 83 percent fresh groundwater, and conditions at Site 12 are expected to be similar. **Groundwater is not a potential source of drinking water**(1) because of the (1) small volume of fresh groundwater available; (2) the likelihood of saltwater intrusion, and (3) the potential future groundwater improvements for stability (such as stone columns and dynamic compaction) needed as part of earthquake preparedness.

2.3 PREVIOUS INVESTIGATIONS AND ACTIONS

Table 1 summarizes the previous investigations completed for Site 12 and the previous and ongoing removal actions at Site 12.

TABLE 1. PREVIOUS INVESTIGATIONS AND PREVIOUS AND ONGOING REMOVAL ACTIONS

Investigation[1]	Date	Investigation Summary
PREVIOUS INVESTIGATIONS		
PA/SI	1988	A PA/SI was completed for NAVSTA TI to identify and assess sites where contamination from past hazardous materials operations posed a potential threat to human health or the environment. The PA/SI identified 26 sites at NAVSTA TI, including Site 12. Site 12 was identified based on the ammunition bunkers, cell-type disposal units, and general debris disposal areas.
Preliminary Risk Assessment	1992	A preliminary risk assessment was completed to assess potential health risks from exposure to contamination at Site 12. The Navy performed a geophysical survey using ground-penetrating radar. Soil samples were collected from areas with ground-penetrating disturbances and debris areas. Soil samples were analyzed for metals, pesticides, PCBs, VOCs, and SVOCs. Based on the results, additional soil samples were collected. The results of the soil sampling were included in the RI data set.
Groundwater Monitoring	1992-present	The Navy has conducted **groundwater monitoring**(2) at Site 12 since 1992. The groundwater monitoring identified elevated concentrations of arsenic in groundwater in the vicinity of Buildings 1311 and 1313 (now known as the Gateview Arsenic/TPH Area). Elevated petroleum concentrations in soil and groundwater were also reported in that area. The elevated concentrations were most likely the result of releases from a suspected former waste oil tank in the area. In 2005, an **investigation into the elevated concentrations of arsenic**(3) concluded that the petroleum conditions caused naturally occurring arsenic in soil to be mobilized into the groundwater.
Tidal Mixing Studies	1995-2002	In 1995, an initial study assessed the inland extent of tidal influence on near-shore groundwater levels at former NAVSTA TI. During the first study, fluctuations in the groundwater table between high and low tides ranged from 1.81 feet at a distance of 30 feet from San Francisco Bay to 0.12 foot at a distance of 250 feet from San Francisco Bay. The tidal fluctuation in San Francisco Bay was measured at 5.37 feet during the corresponding period. A follow-up study was performed between December 2001 and March 2002 to assess the degree of subsurface mixing of groundwater and surface water immediately inland of the shore at TI. The findings from these studies estimated that physical mixing of surface water and groundwater takes place over distances ranging from 60 to 150 feet inland of the TI mean lowest low water shoreline.
Ambient Metals Studies	1996-2001	Ambient concentrations were established for metals in soil and groundwater to assess whether the presence of any metal was the result of a site-specific release or if it was from naturally occurring or regional anthropogenic sources. A study of the ambient concentrations of metals in soil was conducted in 1996; the ambient groundwater metals concentrations study was completed in 2001. These studies are included as Appendices D and E of the final Site 12 RI report.

TABLE 1. PREVIOUS INVESTIGATIONS AND PREVIOUS AND ONGOING REMOVAL ACTIONS

Investigation[1]	Date	Investigation Summary
PREVIOUS INVESTIGATIONS		
Draft Final Onshore RI	1997	An RI was completed for all sites identified in the PA/SI, including Site 12, to assess the nature and extent of potential petroleum and metals contamination and to evaluate whether the debris disposal areas, former ammunition bunker areas, and the former buried oil tank (in the Gateview Arsenic/TPH Area were continuing sources of contamination. The RI was completed in three phases (I, IIA, and IIB). Phase I consisted of installing and monitoring four groundwater monitoring wells. Phase IIA, consisted of completing groundwater hydraulic parameter tests, a tidal influence study, and groundwater sampling. Phase IIB consisted of collecting two to three soil samples and one groundwater sample from each of the 108 direct-push borings. The samples were analyzed for VOC, SVOCs, TPH, explosives, metals, and dioxins at selected locations. Results of the RI indicated that metals, PAHs, and TPH concentrations were detected throughout the site, and dioxins were detected in localized areas. PAHs, VOCs, pesticides, PCBs, explosives, metals, and TPH were detected in groundwater, with VOCs and TPH being detected most frequently in the southwestern corner of the site. After this RI, the Site 12 boundary was expanded to include a rubbish disposal area (SWDA A & B, now referred to as SWDA Westside).
EBS	1997-1998	The Navy completed an EBS in 1997 and a revision to the EBS in 1998. Reuse Zone 4 encompasses most of Site 12 and included EBS parcels T96, T97, T100, T101, and T103. The EBS provided recommendations for areas suitable for lease, and areas where restrictions should be applied until further investigation was completed.
Draft Site 12 OU RI	1999	In early 1998, Site 12 was separated from the other onshore sites based on the additional data collected at Site 12 and unexpected delays in completing the onshore RI report. In addition, the City of San Francisco had announced its plans to lease the former housing areas within the site as public rental units. The RI concluded that risks associated with SWDA Westside and the remainder of the site were within the risk management range of 10^{-4} to 10^{-6} for residential users, recreational users, commercial/industrial users, and construction workers. The noncancer hazard risk for all users was less than 1, except for residential exposure to surface soil in SWDA Westside, which was equal to 1. Lead in soil at both the SWDA Westside and the remainder of the site was found at concentrations well below the screening concentrations for the residential user based on the DTSC blood lead model and modified DTSC model.
Exploratory Trenching and Sampling	2000-2003	The Navy pothole sampled back yards in Buildings 1205 and 1211 in August 2000. There were no significant detections in the backyards of Building 1205. There were varied detections of lead, PCBs, and PAHs above screening criteria in the four Building 1211 backyards. The Navy conducted additional trenching and sampling at 15 buildings scheduled for leasing. Sampling results identified three hotspots. Two hotspots were outside previously known areas of contamination and the third was behind Building 1413. Interim measures such as fencing off areas of known debris contamination and installation of cover in several backyards of occupied residents were also undertaken. Fencing was installed around SWDA Westside, SWDA Bayside, and SWDA North Point. Warning signs were posted around the perimeter of the fenced area. Back yards where samples exceeded criteria were covered with either sod or concrete pavers. In September and October 2003, the Navy conducted additional trenching, excavating 581 exploration trenches, seven step-out trenches, and seven step-out hand auger locations and collected samples. The investigation was limited to common areas outside of the SWDAs, specifically excluding areas previous remediated, areas scheduled for future remediation, and hardscape areas. The results of this investigation helped further refine the SWDA boundaries.

TABLE 1. PREVIOUS INVESTIGATIONS AND PREVIOUS AND ONGOING REMOVAL ACTIONS

Investigation[1]	Date	Investigation Summary
PREVIOUS INVESTIGATIONS		
Initial Soil Gas Investigation with SWDA A & B (now known as SWDA Westside)	2000	The Navy completed a shallow soil gas survey to investigate potential VOCs and methane generation and migration within the SWDA A & B and to evaluate the nature and extent of VOC and methane suspected during previous investigations at Site 12. Soil gas samples were collected from 70 locations within Site 12. VOCs were present at concentrations exceeding screening criteria in only one location, near Building 1323. Methane was detected at numerous locations in SWDA Westside, Northpoint Drive, and Gateview Avenue areas. Additional soil gas samples were collected to delineate these VOC and methane detections. The results of the step-out sampling delineated the extent of VOC contamination to a small area between Building 1323 and a riprap area. The methane detections in the SWDA Westside, Northpoint Drive, and Gateview Avenue areas correlated with natural gas pipelines. In January 2002, the Navy capped the natural gas pipeline in the SWDA, allowed remaining gas to dissipate, and then resampled locations along the line. Results showed methane was no longer present at concentrations exceeding screening criteria. Methane in soil gas at concentrations above screening criteria continued to be detected near Buildings 1319 and 1321. Chloromethane was detected in soil gas samples collected from the vicinity of Building 1323 within SWDA Westside and in indoor air at Building 1323. However, chloromethane from soil gas was determined not to be the source of the chloromethane in indoor air because concentrations in soil gas were low.
Offshore Sediment RI	2001	In 1996, the Navy designated the offshore area at NAVSTA TI as its own OU. The offshore area of Site 12 was designated as Area G. Sampling included chemical analysis of sediment, stormwater, and sediment pore water. One of the primary focuses of the sampling was to evaluate potential contamination to offshore sediment from stormwater outfalls. The RI found that chemical concentrations in the sediment were low and no debris was present in the sediment. As a result, the RI concluded that no further action was necessary for Area G of the offshore sediment. The Navy and the state signed a No Action ROD for the offshore sediment in 2005.
Targeted Investigation of Volatile Organic Compounds in Soil Gas	2009	The Navy investigated VOCs in soil gas to characterize the vapor intrusion pathway and identify any existing soil gas plumes. Soil vapor from 95 distinct locations within four areas (EUs 8, 15, and 17 and AOI Mariner Drive) was sampled an analyzed in a mobile laboratory. The Navy collected an additional 40 samples in other EUs to augment the risk assessment dataset where samples for VOCs had not been previously collected for soil gas or groundwater. Benzene was the only compound that exceeded its individual CHHSL at three locations (two in EU 16 and one in EU 10). Benzene was the largest contributor to the risk at the location where the cumulative CHHSL was exceeded. No soil gas plumes were identified. Methane detections were attributed to subsurface natural gas pipelines, and on further investigation by the San Francisco Public Utilities Commission were found not to be a hazard with no major pipeline leakage.
HRA	2006	An HRA was completed in 2006 to designate sites on former NAVSTA TI as either impacted by radionuclides, meaning the site has, or at one time had, the potential for residual radioactive contamination; or non-impacted, meaning there is no reasonable possibility for residual radioactive contamination. The HRA found the four SWDAs (SWDA Westside, SWDA Bayside, SWDA North Point, and SWDA Bigelow Court) could contain radioluminescent devices. Therefore, radiological surveys were recommended for the SWDAs. The HRA also identified the USS Pandemonium, a full-scale mockup of a patrol craft training ship used for radiological decontamination training. It was located on the northwest part of TI, at what is currently part of Site 12, until 1969. The HRA concluded that the former location of the USS Pandemonium was not impacted.

TABLE 1. PREVIOUS INVESTIGATIONS AND PREVIOUS AND ONGOING REMOVAL ACTIONS

Investigation[1]	Date	Investigation Summary
PREVIOUS INVESTIGATIONS		
SLERA	2007	An ecological survey of Site 12 was conducted in March 2006 as part of a SLERA for former NAVSTA TI. The survey concluded that Site 12 consisted of residential areas with landscaped vegetation and that former NAVSTA TI was not a natural ecosystem. The SLERA concluded that no further evaluation of ecological risk was necessary for Site 12 because of the overall poor quality of habitat on former NAVSTA TI and because future exposure would be limited to species adapted to urban, landscaped habitats similar to what was currently present.
Technical Memorandum for PCBs in Indoor Air at Halyburton Court, IR Site 12	2007	In October 2000, indoor air sampling was conducted at Halyburton Court, focusing on Building 1100. Results indicated the presence of low-molecular-weight PCBs that are potentially volatile and could partition in the vapor phase. Additional samples were collected, and the Navy completed an evaluation of the vapor intrusion pathway. Buildings 1100, 1102, 1104, and 1106 in Halyburton Court have remained unoccupied as a result of the analysis.
RI	2012	The Navy completed an RI for Site 12 to: (1) characterize site conditions; (2) evaluate the nature and extent of contamination in soil, groundwater, and soil gas; and (3) assess the risk to human health and the environment. Site 12 was divided into two regional areas: Site 12 north and Site 12 south. Site 12 north and south were further subdivided into 19 EUs, six AOIs, seven groundwater exposure areas, and the four SWDAs. Three petroleum areas were identified: (1) the Building 1311/1313 area (now known as the Gateview Arsenic/TPH petroleum area); (2) the Mariner Drive petroleum area, located 600 feet inland from the northern shore of the island; (3) suspected UST 267, located near the northeastern corner of Site 20 within Site 12. The Navy was unable to locate the UST, and it was concluded that the UST did not exist. In 2003, the Water Board concurred with the Navy's request for no further action for UST 267. A total of 4,039 samples were collected from Site 12 (3,607 soil samples, 322 water samples, and 110 soil gas samples). The samples were analyzed for TPH, VOCs, SVOCs, pesticides, PCBs, metal, explosives, and dioxins and furans. Sampling results were compared with screening criteria to identify **chemicals that exceeded the screening criteria(4)**. **Chemicals in soil exceeding the screening criteria(5)** include petroleum, PAHs, PCBs, pesticides, metals, and dioxins. **Chemicals in groundwater exceeding the screening criteria(6)** include petroleum and metals. **Chemicals in soil gas exceeding the screening criteria(7)** include benzene and chloroform. A baseline HHRA was also completed in the RI. The results of the HHRA are described below in Section 2.5.1.
HRASTM	2014	In 2014, the Navy completed additional research to better understand the radiological materials that were found on TI and the historical disposal processes for the low-level radioactive waste. As a result of the research, new areas at former NAVSTA TI were designated as potentially radiologically impacted. This area included all of Site 12, because it was a former site of the USS Pandemonium and a gyro compass repair shop, and the presence of the SWDAs (which was identified in the HRA) with the potential for low-level radiological objects or contamination to have been spread outside of the SWDAs during development of the housing areas. The HRASTM recommended a characterization survey, remediation of radiologically impacted areas, and a gamma walkover survey for areas outside the radiologically impacted SWDA boundaries. This non-SWDA and non-radiological ROD/Final RAP does not address potential radiological contamination at Site 12. Radiological contamination is being addressed by separate CERCLA documents.

TABLE 1. PREVIOUS INVESTIGATIONS AND PREVIOUS AND ONGOING REMOVAL ACTIONS

Investigation[1]	Date	Investigation Summary
PREVIOUS INVESTIGATIONS		
FS	2014	The Navy completed an FS to: (1) supplement the site characterization information from the 2012 RI with a data gaps investigation; (2) identify ARARs; (3) identify RAO and remediation goals; and (4) evaluate remedial alternatives. The Navy completed a data gaps investigation and documented the results in the FS. The objective of the data gap investigation was to define the lateral and vertical extent of the COCs identified in the RI. The data gaps investigation included collection of samples to define the lateral and vertical extent of contamination for: • Lead at EU 6, EU 7, EU 14, and AOI Mariner Drive • Hexavalent chromium at EU 4, EU 5, and AOI Mariner Drive • Dioxins and furans at EU 16, EU 17, AOI 1201/1203/1220, and AOI Mariner Drive • PCBs at EU 9, AOI 1254, AOI Halyburton/Bigelow Court • PAHs at EU 5 and EU 6 • Pesticides at AOI 1254 • TPH Data indicated that the lateral and vertical extent of lead were defined, and lead was retained as a COC for EU 6, EU 7, EU 14, and AOI Mariner Drive. Data indicated that hexavalent chromium was present at EU 4, EU 5, and AOI Mariner Drive, so chromium was retained as a COC for these locations. Data indicated the lateral and vertical extent of PCBs were defined at EU 9 and AOI Halyburton/Bigelow Court, and PCBs were retained as a COC at these locations. Data also confirmed the removal of PCB contamination at AOI 1254 from a previous removal action, so PCBs were not retained as a COC for AOI 1254. Data indicated the lateral and vertical extent of PAHs at EU 5 and EU 6 were defined, so BaP EQ was retained as a COC for these locations. Data confirmed the removal of pesticide contamination at AOI 1254 when the previous PCB removal action was completed. Data indicated that the lateral and vertical extent of the TPH in the Gateview Arsenic/TPH Area were defined. The alternatives developed and evaluated in the FS were superseded by the alternatives developed and evaluated in the FS addendum.
FS Addendum	2015	The Navy completed an FS addendum to: (1) update site characterization information from the 2012 RI and 2014 FS with another data gaps investigation; (2) investigate potential contamination from a rubbish area identified on historical figures; (3) reassess the 2007 SLERA; (4) present basis for no further action determination at groundwater exposure area GW-S5 based on monitoring results; and (5) develop and evaluate remedial alternatives. Eight trench locations were excavated to assess the presence and extent of contamination in the **rubbish area(8)**. The trenches were dug approximately 4 feet wide by 6 feet long and up to 8 feet bgs. Data indicate that there is no chemical contamination above remediation goals in the eight trenches and household debris was discovered only in trenches 6 and 7, and was minimal and localized. Soil sampling was performed in EU 3, EU 4, and EU 19 to assess a discrepancy in data for PAHs and in EU 17 to address a discrepancy in data for dioxins. Data from the data gaps sampling indicated that PAHs are not present at concentrations above the remediation goal in the discrepancy locations in EU 3, EU 4. As a result PAHs were not retained as a COC for EU 3 and EU 4. Data also indicated that PAHs were not present above the remediation goal in locations identified as having a discrepancy in data at EU 19; however, concentrations of PAHs above the remediation goal remain at other locations. As a result, BaP EQ was retained as a COC for EU 19. Data confirmed the dioxin contamination at EU 17, so 2,3,7,8-TCDD TEQ was retained as a COC for EU 17.

TABLE 1. PREVIOUS INVESTIGATIONS AND PREVIOUS AND ONGOING REMOVAL ACTIONS

Investigation[1]	Date	Investigation Summary
PREVIOUS INVESTIGATIONS		
FS Addendum (continued)	2015	Soil samples were collected in eight EUs and three AOIs to assess whether **contamination extended underneath buildings**(9). Results of the data gaps sampling indicated that lead, dioxins, and PCBs did not extend underneath buildings; however, PAHs at concentrations above the remediation goal extended underneath Building 1217. Samples were also collected in the Gateview Arsenic/TPH area to further define the lateral and vertical extent of petroleum contamination. Results from the data gaps sampling indicated that petroleum contamination did not extend outside of the previously defined source area. Soil gas samples were collected to further define the lateral and vertical extent of soil gas COCs in EU 16. Results from data gaps sampling indicate that concentrations of **benzene in soil gas**(10) are no longer detectable and do not require further investigation or remediation. Groundwater monitoring conducted from 2007 to 2009 indicated concentrations of **arsenic in groundwater**(11) have been below the screening criteria (36 µg/L) since 2008. Based on the results, no further action is necessary for groundwater area GW-S5. The reassessment of the SLERA is discussed below in Section 2.5.2. The alternatives evaluated in the FS addendum are discussed below in Section 2.9.
PREVIOUS AND ONGOING REMOVAL ACTIONS[2]		
Removal Action of PCB-Contaminated Soil, Halyburton Court Area	2000	Soil investigations in late 1999 revealed soil concentrations of PCBs that exceeded the cleanup goal of 1 mg/kg in the **Halyburton Court area**(12). The Navy undertook a removal action to excavate and dispose of PCB-contaminated soil off-site. The excavation also removed collocated concentrations of PAHs. Soil was excavated to a maximum depth of 4 feet bgs in an approximately 2-acre area. Confirmation samples collected from the floor of the excavation at depths below 4 feet bgs and in some sidewalls beneath structures indicated PCBs exceeding 1 mg/kg were left in place. Approximately 11,300 cubic yards of soil was removed. Excavated soil was transported off site for disposal. The removal action was completed in August 2000.
Time-Critical Removal Action for PCB- and PAH-Contaminated Soil	2002	In October 2001, the Navy undertook a time-critical removal action **in the area**(13) behind Building 1413 in Flounder Court, Building 1252 Exposition Drive, Building 1254 13th Street, and Buildings 1246 and 1248 Gateview Court. The objective of the removal action was to remove soil contaminated with lead, PCBs, and PAHs. The maximum depth of the excavations was 4 feet bgs. Approximately 800 cubic yards of soil was removed. Excavated soil was transported off site for disposal. The removal action was completed in January 2002.

TABLE 1. PREVIOUS INVESTIGATIONS AND PREVIOUS AND ONGOING REMOVAL ACTIONS

Investigation[1]	Date	Investigation Summary
PREVIOUS AND ONGOING REMOVAL ACTIONS[2]		
Time-Critical Removal Action for Soil at IR Site 12	2015-present	In October 2015, the Navy signed an action memorandum that documented its decision to undertake another removal action for soil at Site 12. The removal action will address petroleum contamination in the Gateview Arsenic/TPH Area and discrete locations of soil in the southern portion of Site 12. The Navy will excavate the petroleum contaminated soil in the Gateview Arsenic/TPH source area near Buildings 1311 and 1313 and will add a biostimulation compound to further treat the petroleum. The objective of this portion of the removal action is to remove and treat the residual petroleum that creates conditions conducive to reducing concentrations of arsenic that have leached from the soil into the groundwater. The Navy demolished Buildings 1311 and 1313 to reach the contaminated soil. In addition, the Navy excavated discrete locations of soil dispersed throughout the southern portion of Site 12. The Navy removed soil contaminated with lead, PAHs, PCBs, and dioxins and furans. The Navy demolished Buildings 1100, 1102, 1104, and 1106 to reach the contaminated soil. The removal action began in April 2016 and is scheduled to be completed in October 2017.

Table 1 Notes:

1 The documents listed are available in the Administrative Record and provide detailed information used to support remedy selection at Site 12.

2 The Navy has completed and is completing removal actions in the SWDAs. However, this non-SWDA and non-radiological ROD/Final RAP does not address the SWDAs, so information on the removal actions completed or being completed in the SWDAs is not included.

µg/L	Micrograms per liter
AOI	Area of interest
BaP	Benzo(a)pyrene
bgs	Below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHHSL	California Human Health Screening Level
COC	Chemical of concern
DTSC	California Department of Toxic Substances Control
EBS	Environmental baseline survey
EU	Exposure unit
FS	Feasibility study
HHRA	Human health risk assessment
HRA	Historical Radiological Assessment
HRASTM	Historical Radiological Assessment Supplemental Technical Memorandum
mg/kg	Milligrams per kilogram
NAVSTA TI	Naval Station Treasure Island
OU	Operable unit
PAH	Polycyclic aromatic hydrocarbon
PA/SI	Preliminary assessment and site inspection
PCB	Polychlorinated biphenyls
RAO	Remedial action objective
RAP	Remedial Action Plan
RI	Remedial investigation
ROD	Record of decision
SLERA	Screening-level ecological risk assessment
SVOC	Semivolatile organic compound
SWDA	Solid waste disposal area
TEQ	Toxicity equivalent
TI	Treasure Island
TPH	Total petroleum hydrocarbons
UST	Underground storage tank
VOC	Volatile organic compound
Water Board	San Francisco Bay Regional Water Quality Control Board

2.3.1 Conceptual Site Model and Current Site Conditions

The previous investigations and removal actions at Site 12 have enabled the Navy to develop a conceptual site model (CSM). Potential sources of contamination at the site, linked to the historical uses of Site 12 prior to 1967, include (1) the ammunition bunkers; (2) the former storage yard, air runway, and vehicle parking; (3) the former incinerator; (4) the former burn area; (5) the suspected former oil UST area; and (6) the SWDAs (Figure 4 and Figure 5).

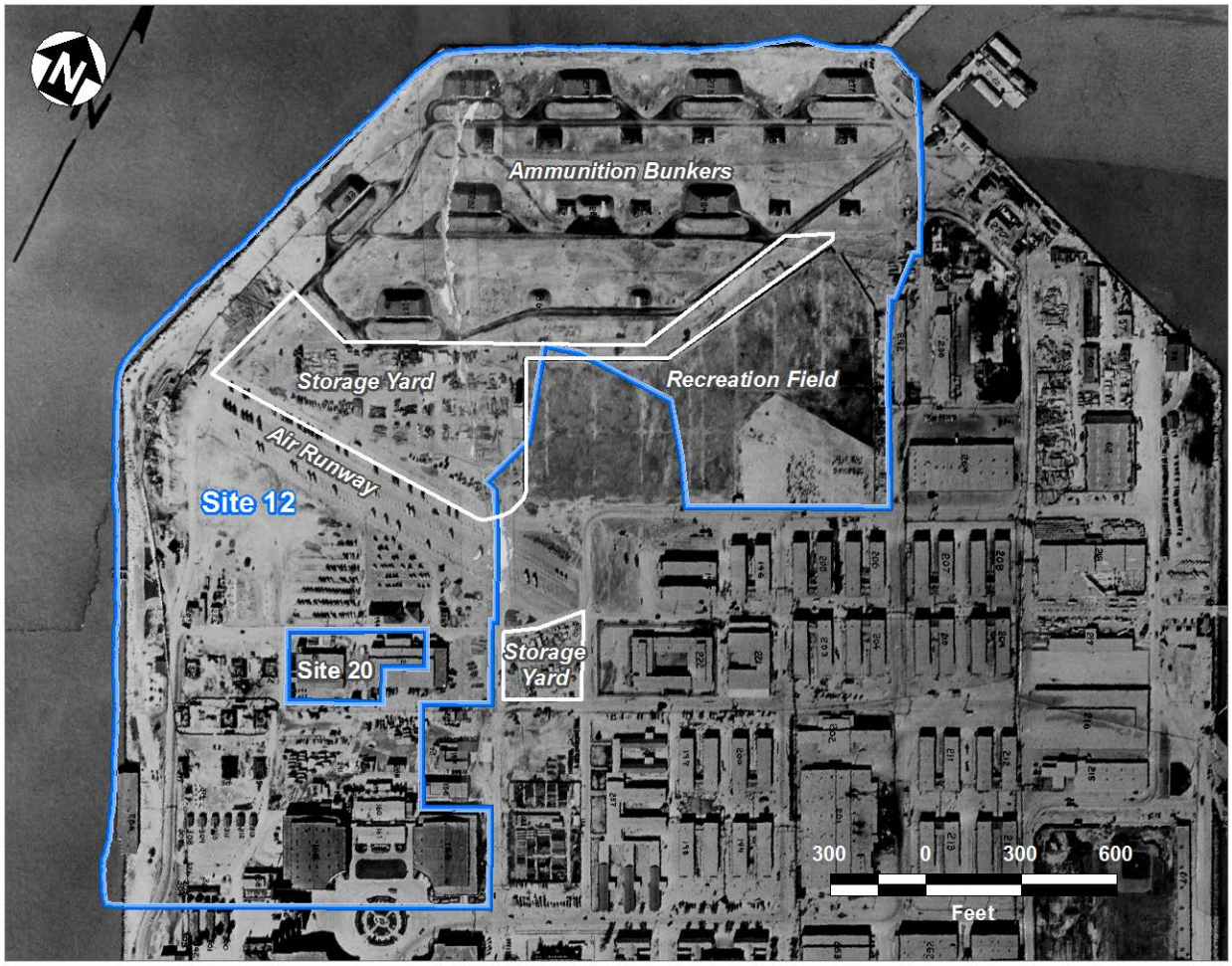

Figure 4. Historical Aerial Photograph of Site 12 from 1945

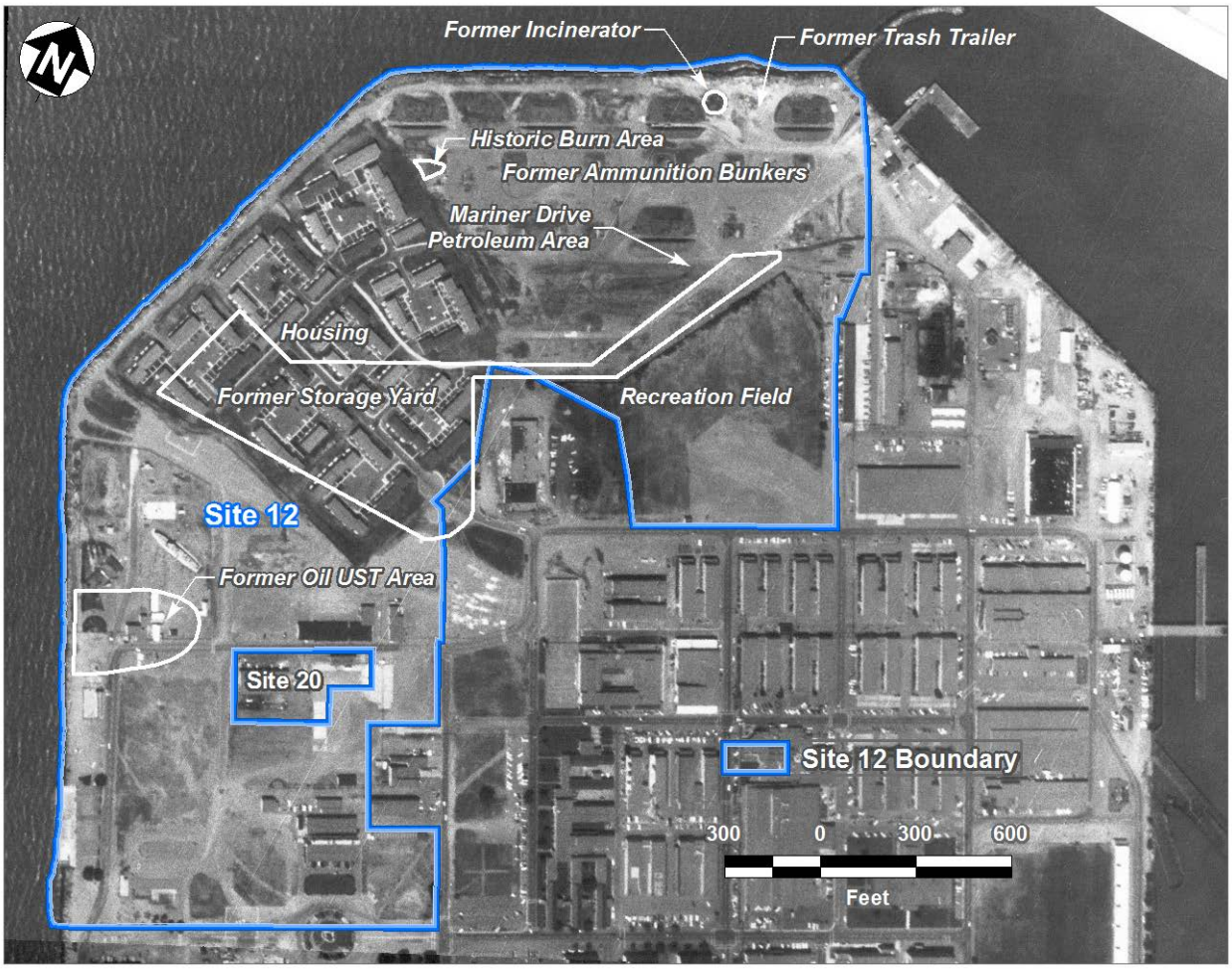

Figure 5. Historical Aerial Photograph of Site 12 from 1968

In 1966, the Navy began construction of military housing. The ammunition bunkers, the incinerator, and the trash trailer had been removed. Grading and preparing the site for construction of the housing units included mixing and spreading the solid waste material, which surrounded the bunkers, with fill and surface soil both within and away from the SWDAs. The disposal areas were identified during foundation excavation for the 1200-series housing units, constructed in 1969. The excavation trench logs identified debris described as loose rubbish such as bottles, wire rope, paper, steel drums, and incinerator ash. The grading and spreading of the solid waste material have resulted in detections of widely dispersed, isolated elevated concentrations of chemicals (PAHs, PCBs, dioxins and furans, pesticides, and metals) in the soil, but did not result in widespread contamination of the groundwater. Groundwater contamination was the result of the leaking underground storage tank (UST) tank formerly located in the Gateview Arsenic/TPH Area, which resulted in localized petroleum contamination in proximity to Buildings 1311 and 1313. Figure 6 shows a graphic representation of the conceptual site model.

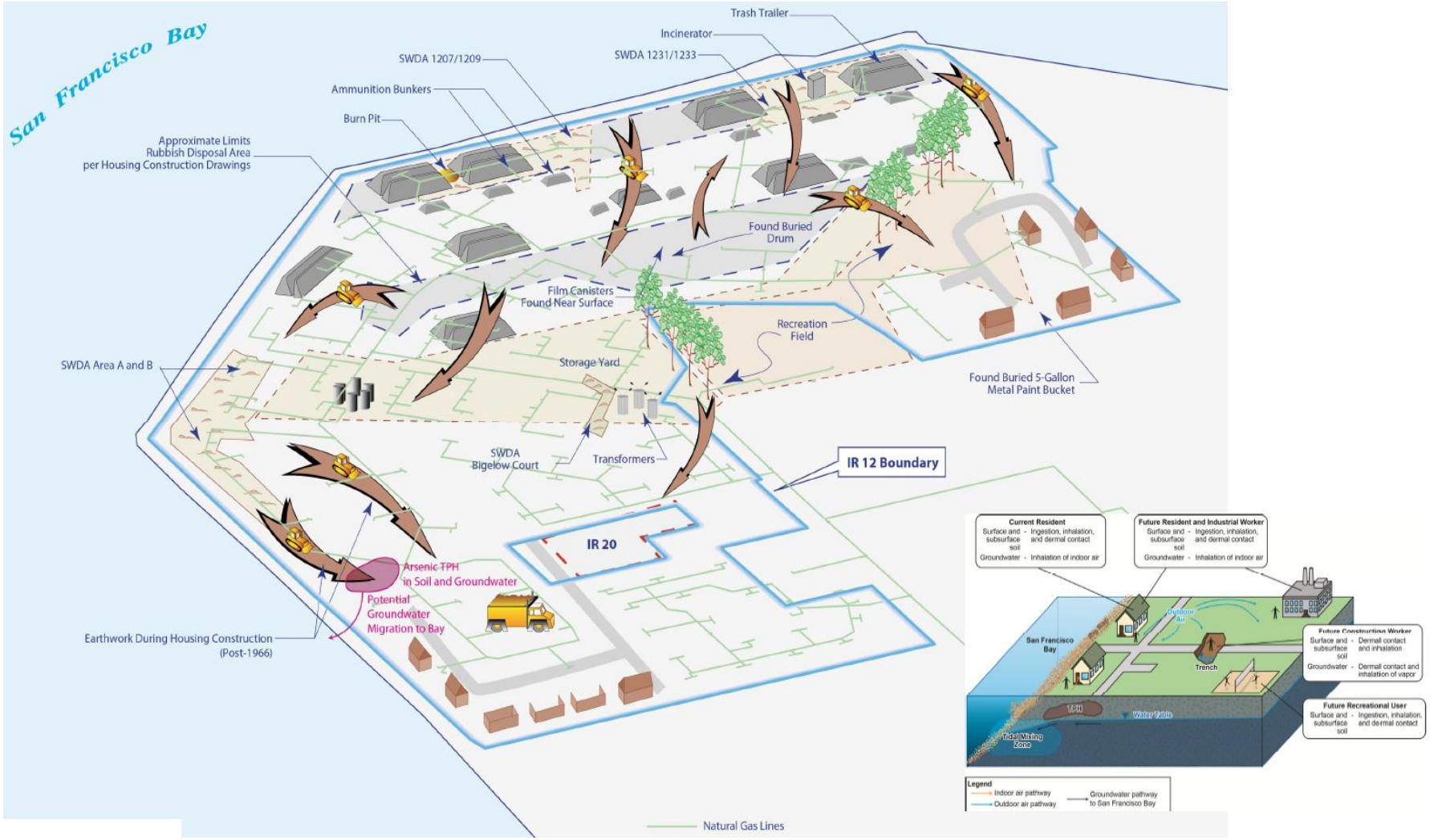

Figure 6. Conceptual Site Model for Site 12

2.4 CURRENT AND POTENTIAL FUTURE SITE USES

The current use of Site 12 is residential housing. The future reuse of Site 12 is identified in the 2011 Final Environmental Impact Report and the 2011 Treasure Island Development Authority Disposition and Development Agreement. The future reuses of Site 12 include residential and open space/recreational. The open space/recreational uses include the Northern Shoreline Park, the Wilds, and stormwater wetlands (Figure 7).

Figure 7. Redevelopment Land Use Map

Groundwater at Site 12 is not a potential source of drinking water. The **Water Board concurs(14)** that the quality and hydrogeologic conditions of the groundwater beneath NAVSTA TI are such that the groundwater is not a potential source of drinking water pursuant to State Water Resources Control Board Resolution 88-63 and 89-39. No other uses of groundwater are planned at Site 12. Groundwater has the potential to discharge to San Francisco Bay. The Navy is addressing potential risk to off-site aquatic receptors from the discharge of arsenic-contaminated groundwater in this non-SWDA and non-radiological ROD/Final RAP.

2.5 SUMMARY OF SITE RISKS

The contamination at Site 12 resulted from waste disposal activities by the Navy previously identified on site and from existing debris that was not removed during housing construction. The chemicals potentially released at Site 12, including metals, dioxins and furans, PCBs and PAHs, are mostly attributed to waste disposal (including burning) activities by the Navy.

The Navy evaluated potential risks to human health and ecological receptors from chemicals released at Site 12 based on a **risk CSM(15)**. These human health and ecological risks are discussed in Section 2.5.1 and Section 2.5.2.

2.5.1 Human Health Risk Assessment

A **quantitative baseline HHRA(16)** was completed in the 2012 RI report for potential exposure to chemicals in soil, soil gas, and groundwater at Site 12. (Radiological risks will be assessed separately.) Site 12 is predominantly a residential housing area consisting of multi-unit buildings with fenced back yards. The site was divided into 19 discrete soil exposure units (EU) to assess potential human health risk because the footprint of the site is large. The boundaries of the EUs were based on the location of major roads and the expectation that children will spend most of their time and activity in the EU where their housing unit is located. In addition, six soil areas of interest (AOI) were identified based on input from DTSC and the U.S. Environmental Protection Agency (EPA). These AOIs were broken out from the EUs because of the elevated levels of specific chemicals in soil. A total of five groundwater exposure areas tied to known sources and a sixth groundwater exposure area, not tied to a source area and identified as non-source area one, were defined for groundwater. Figure 8 shows the EUs, AOIs, and the groundwater exposure areas.

Receptors quantitatively evaluated in the baseline HHRA for the exposure areas were based on current and anticipated future land uses of Site 12. The HHRA included the following receptors:

- Current residential
- Future residential
- Future commercial/industrial worker
- Future recreational visitor
- Future construction worker

The following exposure pathways were quantified in the baseline HHRA:

- Incidental ingestion of soil
- Dermal contact with soil
- Inhalation of chemical vapors in ambient (outdoor) air from soil
- Inhalation of chemicals adsorbed to windblown soils
- Inhalation of chemical vapors in indoor air from soil (as soil gas) (commercial/industrial worker and resident only)
- Dermal contact with chemicals in a construction trench from groundwater (construction worker only)
- Inhalation of chemical vapors in a construction trench from groundwater (construction worker only)

Soil, soil gas, and groundwater were evaluated separately. The HHRA assumed that current exposure to soil would be limited to surface soil (0 to 2 feet bgs) and that future soil exposure would include subsurface soil (0 to 10 feet bgs). Soil gas data were used when available to evaluate exposure from subsurface vapor intrusion of volatile chemicals in soil to indoor air. Groundwater exposure was limited to indirect exposure from vapor migration to outdoor air in a construction trench and direct exposure (dermal contact) to groundwater within a construction trench. Receptors are not likely to be otherwise exposed to groundwater because the groundwater at the site is not currently used for any purpose (drinking, showering, cooking, or irrigation) and groundwater at NAVSTA TI is not a potential source of drinking water.

Potential cancer risks and noncancer hazards were calculated based on reasonable maximum exposure (RME) assumptions recommended by EPA and DTSC. The assumptions are based on an RME rather than an average or medium-range exposure assumption and provide a protective approach that estimates the highest health risks that are reasonably expected to occur at a site. Actual risks from exposures to chemicals in soil and groundwater at Site 12 are likely to be lower.

An HHRA estimates the risks posed if no action is taken. The HHRA provides the basis for determining when remedial action is necessary and identifies the contaminants and exposure pathways that need to be addressed to prevent unacceptable risk to human health. **Cancer risks, noncancer health hazards, and lead**[17] are characterized separately.

The HHRA evaluated the potential for health effects from exposure to lead in surface and subsurface soil by comparing the lead concentration with residential and industrial screening levels. These screening levels are based on a biomarker (blood lead levels); for this reason, the risks from exposure to lead were characterized separately, and were not included in cumulative risk calculations. The lead exposure point concentrations in soil were all below the EPA

Residential Screening Level of 400 milligrams per kilogram (mg/kg) except for soil at AOI 1201/1203/1220. Lead was identified as a COC at AOI 1201/1203/1220.

The HHRA calculated **risks for each EU, AOI**(18), and groundwater exposure area within the EUs. The results of the baseline HHRA are presented in Table 2. COCs were identified in the HHRA, then re-evaluated after two rounds of data gap sampling documented in the FS and FS addendum. Next, the FS and FS addendum compared concentrations of COCs with the preliminary remediation goals identified in the FS and FS addendum to identify locations where concentrations of COCs exceeded the remediation goals. This comparison resulted in some locations with COCs targeted for remediation in EUs and AOIs that were not identified in the HHRA. Table 2 presents the COCs that were identified in the HHRA. Table 3 presents the chemicals that will be targeted for remediation, the basis for targeting each chemical, the chemicals that do not need remedial action, and the basis for no remedial action necessary.

The HHRA specifies the assumptions and **uncertainties**(19) inherent in the risk assessment process based on the number of samples collected, their location, literature-based exposure and toxicity values used to calculate risk, and risk characterization across multiple media and exposure pathways. The effects of uncertainties are overestimation or underestimation of the actual cancer risk or noncancer hazard. In general, the risk assessment process is based on the use of conservative (health-protective) assumptions that, when combined, are intended to overestimate the actual risk or hazard.

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Exposure Unit 1					
Current Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	1	Arsenic, BAP EQ
Future Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	1	Arsenic, BAP EQ
	Subsurface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	1	Arsenic, BAP EQ
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	6×10^{-6}	4×10^{-5}	0.1	Arsenic
	Subsurface Soil and Indoor Air	7×10^{-6}	4×10^{-5}	0.1	Arsenic
Future Recreational User	Surface Soil	9×10^{-6}	5×10^{-5}	0.5	Arsenic
	Subsurface Soil	9×10^{-6}	5×10^{-5}	0.4	Arsenic
Future Construction Worker	Subsurface Soil [e]	4×10^{-6}	8×10^{-6}	2 (1) [f]	Arsenic [g], Chromium
Exposure Unit 2					
Current Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	1	Arsenic, BAP EQ
Future Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	1	Arsenic, BAP EQ
	Subsurface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (2) [f]	Antimony, Arsenic, BAP EQ
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	6×10^{-6}	3×10^{-5}	0.1	Arsenic
	Subsurface Soil and Indoor Air	6×10^{-6}	3×10^{-5}	0.2	Arsenic
Future Recreational User	Surface Soil	8×10^{-6}	4×10^{-5}	0.5	Arsenic
	Subsurface Soil	8×10^{-6}	4×10^{-5}	0.8	Arsenic
Future Construction Worker	Subsurface Soil and Groundwater (GW-S1) (dermal and inhalation in trench)	3×10^{-6}	8×10^{-6}	2 (1) [f]	Arsenic [g,h], Chromium
Exposure Unit 3					
Current Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	1	Arsenic, BAP EQ, Lead
Future Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	1	Arsenic, BAP EQ
	Subsurface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	1	Arsenic, BAP EQ
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	7×10^{-6}	3×10^{-5}	0.1	Arsenic
	Subsurface Soil and Indoor Air	6×10^{-6}	3×10^{-5}	0.09	Arsenic

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Exposure Unit 3 (Continued)					
Future Recreational User	Surface Soil	9×10^{-6}	5×10^{-5}	0.4	Arsenic, BAP EQ [g]
	Subsurface Soil	9×10^{-6}	5×10^{-5}	0.4	Arsenic
Future Construction Worker	Subsurface Soil [e]	3×10^{-6}	7×10^{-6}	1	Arsenic [g], Chromium
Exposure Unit 4					
Current Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (1) [f]	Arsenic, BAP EQ
Future Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (1) [f]	Arsenic, BAP EQ
	Subsurface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (1) [f]	Arsenic, BAP EQ
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	6×10^{-6}	3×10^{-5}	0.2	Arsenic
	Subsurface Soil and Indoor Air	7×10^{-6}	3×10^{-5}	0.2	Arsenic
Future Recreational User	Surface Soil	8×10^{-6}	5×10^{-5}	0.9	Arsenic
	Subsurface Soil	9×10^{-6}	5×10^{-5}	0.9	Arsenic
Future Construction Worker	Subsurface Soil and Groundwater (GW-S5) (dermal and inhalation in trench)	5×10^{-6}	1×10^{-5}	4 (2) [f]	Arsenic [g,h], Chromium, Manganese
Exposure Unit 5					
Current Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (0.6) [f]	Arsenic, BAP EQ, PCBs
Future Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (0.7) [f]	Arsenic, BAP EQ, PCBs
	Subsurface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	4 (2) [f]	Arsenic, BAP EQ, Manganese, PCBs
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	7×10^{-6}	3×10^{-5}	0.2	Arsenic
	Subsurface Soil and Indoor Air	7×10^{-6}	3×10^{-5}	0.3	Arsenic
Future Recreational User	Surface Soil	9×10^{-6}	4×10^{-5}	0.9	Arsenic
	Subsurface Soil	9×10^{-6}	4×10^{-5}	1	Arsenic
Future Construction Worker	Subsurface Soil and Groundwater (GW-S5) (dermal and inhalation in trench)	4×10^{-6}	9×10^{-6}	16 (14) [f]	Arsenic [g,h], Chromium, Manganese

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Exposure Unit 6					
Current Resident	Surface Soil	2×10^{-5}	1×10^{-4}	2 (0.9) [f]	Arsenic, BAP EQ, Lead
Future Resident	Surface Soil	2×10^{-5}	1×10^{-4}	2 (1) [f]	Arsenic, BAP EQ, Lead
	Subsurface Soil	2×10^{-5}	1×10^{-4}	3 (0.9) [f]	Arsenic, BAP EQ, Lead
Future Commercial/ Industrial Worker	Surface Soil	6×10^{-6}	3×10^{-5}	0.2	Arsenic, BAP EQ [g]
	Subsurface Soil	7×10^{-6}	3×10^{-5}	0.2	Arsenic, BAP EQ [g]
Future Recreational User	Surface Soil	9×10^{-6}	4×10^{-5}	0.8	Arsenic, BAP EQ
	Subsurface Soil	9×10^{-6}	5×10^{-5}	1	Arsenic, BAP EQ
Future Construction Worker	Subsurface Soil and Groundwater (GW-S2) (dermal and inhalation in trench)	4×10^{-6}	9×10^{-6}	6 (3) [f]	Arsenic [g,h], Chromium, Manganese
Exposure Unit 7					
Current Resident	Surface Soil	2×10^{-5}	1×10^{-4}	2 (0.6) [f]	Arsenic, BAP EQ, Chlordane [g]
Future Resident	Surface Soil	2×10^{-5}	1×10^{-4}	2 (0.6) [f]	Arsenic, BAP EQ, Chlordane [g]
	Subsurface Soil	2×10^{-5}	1×10^{-4}	2 (0.6) [f]	Arsenic, BAP EQ, Chlordane [g], Lead
Future Commercial/ Industrial Worker	Surface Soil	7×10^{-6}	3×10^{-5}	0.2	Arsenic, BAP EQ [g]
	Subsurface Soil	7×10^{-6}	3×10^{-5}	0.2	Arsenic, BAP EQ [g]
Future Recreational User	Surface Soil	1×10^{-5}	5×10^{-5}	0.7	Arsenic, BAP EQ
	Subsurface Soil	9×10^{-6}	5×10^{-5}	0.7	Arsenic, BAP EQ [g]
Future Construction Worker	Subsurface Soil and Groundwater (GW-S2) (dermal and inhalation in trench)	4×10^{-6}	9×10^{-6}	4 (2) [f]	Arsenic [g,h], Chromium, Manganese
Exposure Unit 8					
Current Resident	Surface Soil and Indoor Air	4×10^{-6}	6×10^{-6}	2 (0.9) [f]	BAP EQ, Lead
Future Resident	Surface Soil and Indoor Air	4×10^{-6}	6×10^{-6}	2 (0.9) [f]	BAP EQ, Lead
	Subsurface Soil and Indoor Air	4×10^{-6}	5×10^{-6}	1	BAP EQ [g], Lead

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Exposure Unit 8 (Continued)					
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	2×10^{-6}	2×10^{-6}	0.1	--
	Subsurface Soil and Indoor Air	1×10^{-6}	2×10^{-6}	0.1	--
Future Recreational User	Surface Soil	2×10^{-6}	3×10^{-6}	0.6	BAP EQ [g]
	Subsurface Soil	2×10^{-6}	2×10^{-6}	0.6	--
Future Construction Worker	Subsurface Soil and Groundwater (GW-S2) (dermal and inhalation in trench)	3×10^{-6}	5×10^{-6}	2 (0.9) [f]	Arsenic [g,h], Chromium
Exposure Unit 9					
Current Resident	Surface Soil and Indoor Air	8×10^{-6}	1×10^{-5}	2 (0.8) [f]	BAP EQ, Lead, PCBs
Future Resident	Surface Soil and Indoor Air	1×10^{-5}	1×10^{-5}	3 (1) [f]	BAP EQ, Lead, PCBs
	Subsurface Soil and Indoor Air	3×10^{-5}	3×10^{-5}	4 (2) [f]	BAP EQ, Lead, PCBs
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	4×10^{-6}	6×10^{-6}	0.3	BAP EQ, PCBs
	Subsurface Soil and Indoor Air	1×10^{-5}	1×10^{-5}	0.5	BAP EQ, PCBs
Future Recreational User	Surface Soil	5×10^{-6}	7×10^{-6}	1	BAP EQ, PCBs
	Subsurface Soil	1×10^{-5}	2×10^{-5}	2 (1) [f]	BAP EQ, PCBs
Future Construction Worker	Subsurface Soil [e]	4×10^{-6}	4×10^{-6}	5 (3) [f]	Chromium, Manganese
Exposure Unit 10					
Current Resident	Surface Soil and Indoor Air	7×10^{-6}	8×10^{-6}	1	BAP EQ
Future Resident	Surface Soil and Indoor Air	8×10^{-6}	9×10^{-6}	1	BAP EQ
	Subsurface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	1	Arsenic, BAP EQ
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	3×10^{-6}	3×10^{-6}	0.1	BAP EQ
	Subsurface Soil and Indoor Air	7×10^{-6}	3×10^{-5}	0.1	Arsenic, BAP EQ
Future Recreational User	Surface Soil	3×10^{-6}	4×10^{-6}	0.4	BAP EQ
	Subsurface Soil	1×10^{-5}	5×10^{-5}	0.5	Arsenic, BAP EQ
Future Construction Worker	Subsurface Soil [e]	3×10^{-6}	7×10^{-6}	1	Arsenic [g], Chromium

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Exposure Unit 11					
Current Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (0.4) [f]	Arsenic, BAP EQ [g]
Future Resident	Surface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (0.4) [f]	Arsenic, BAP EQ
	Subsurface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (0.4) [f]	Arsenic, BAP EQ [g]
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	6×10^{-6}	3×10^{-5}	0.2	Arsenic
	Subsurface Soil and Indoor Air	6×10^{-6}	3×10^{-5}	0.2	Arsenic
Future Recreational User	Surface Soil	8×10^{-6}	4×10^{-5}	0.7	Arsenic
	Subsurface Soil	9×10^{-6}	5×10^{-5}	0.7	Arsenic
Future Construction Worker	Subsurface Soil [e]	3×10^{-6}	7×10^{-6}	3 (2) [f]	Arsenic [g], Chromium, Manganese
Exposure Unit 12					
Current Resident	Surface Soil and Indoor Air	1×10^{-5}	1×10^{-5}	1	BAP EQ, Chloroform [i]
Future Resident	Surface Soil and Indoor Air	1×10^{-5}	1×10^{-5}	1	BAP EQ, Chloroform [i]
	Subsurface Soil and Indoor Air	1×10^{-5}	9×10^{-6}	1	BAP EQ, Chloroform [i]
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	5×10^{-6}	4×10^{-6}	0.1	BAP EQ
	Subsurface Soil and Indoor Air	5×10^{-6}	3×10^{-6}	0.1	BAP EQ
Future Recreational User	Surface Soil	5×10^{-6}	4×10^{-6}	0.5	BAP EQ
	Subsurface Soil	5×10^{-6}	4×10^{-6}	0.5	BAP EQ
Future Construction Worker	Subsurface Soil [e]	3×10^{-6}	2×10^{-6}	1	Chromium
Exposure Unit 13					
Current Resident	Surface Soil and Indoor Air	3×10^{-6}	5×10^{-6}	0.6	BAP EQ
Future Resident	Surface Soil and Indoor Air	3×10^{-6}	5×10^{-6}	0.6	BAP EQ
	Subsurface Soil and Indoor Air	3×10^{-6}	5×10^{-6}	0.2	BAP EQ

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Exposure Unit 13 (Continued)					
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	1×10^{-6}	2×10^{-6}	0.05	BAP EQ [g]
	Subsurface Soil and Indoor Air	1×10^{-6}	2×10^{-6}	0.02	BAP EQ [g]
Future Recreational User	Surface Soil	1×10^{-6}	2×10^{-6}	0.2	BAP EQ [g]
	Subsurface Soil	1×10^{-6}	2×10^{-6}	0.08	BAP EQ [g]
Future Construction Worker	Subsurface Soil and Groundwater (GW-NS1) (dermal and inhalation in trench)	2×10^{-6}	3×10^{-6}	0.3	Chromium
Exposure Unit 14					
Current Resident	Surface Soil and Indoor Air	9×10^{-6}	1×10^{-5}	2 (0.6) [f]	2,3,7,8-TCDD TEQ, BAP EQ
Future Resident	Surface Soil and Indoor Air	8×10^{-6}	1×10^{-5}	2 (0.6) [f]	2,3,7,8-TCDD TEQ, BAP EQ, Chlordane [g]
	Subsurface Soil and Indoor Air	2×10^{-5}	1×10^{-4}	2 (0.4) [f]	2,3,7,8-TCDD TEQ, Arsenic, BAP EQ, Chlordane [g], Lead
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	3×10^{-6}	4×10^{-6}	0.1	BAP EQ [g]
	Subsurface Soil and Indoor Air	7×10^{-6}	3×10^{-5}	0.2	Arsenic
Future Recreational User	Surface Soil	3×10^{-6}	5×10^{-6}	0.6	BAP EQ [g], Chlordane [g]
	Subsurface Soil	9×10^{-6}	4×10^{-5}	0.7	Arsenic, Chlordane [g]
Future Construction Worker	Subsurface Soil and Groundwater (GW-NS1) (dermal and inhalation in trench)	3×10^{-6}	7×10^{-6}	3 (2) [f]	Arsenic [g], Chromium, Manganese
Exposure Unit 15					
Current Resident	Surface Soil and Indoor Air	6×10^{-6}	8×10^{-6}	0.9	BAP EQ
Future Resident	Surface Soil and Indoor Air	6×10^{-6}	8×10^{-6}	0.9	BAP EQ
	Subsurface Soil and Indoor Air	6×10^{-6}	8×10^{-6}	1	BAP EQ
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	2×10^{-6}	3×10^{-6}	0.08	BAP EQ
	Subsurface Soil and Indoor Air	2×10^{-6}	3×10^{-6}	0.1	BAP EQ

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Exposure Unit 15 (Continued)					
Future Recreational User	Surface Soil	2×10^{-6}	4×10^{-6}	0.3	BAP EQ
	Subsurface Soil	2×10^{-6}	4×10^{-6}	0.4	BAP EQ
Future Construction Worker	Subsurface Soil and Groundwater (GW-S4) (dermal and inhalation in trench)	3×10^{-6}	8×10^{-6}	1	Arsenic [g,j], Chromium
Exposure Unit 16					
Current Resident	Surface Soil and Indoor Air	9×10^{-6}	1×10^{-5}	1	2,3,7,8-TCDD TEQ, Benzene [g,i]
Future Resident	Surface Soil and Indoor Air	9×10^{-6}	1×10^{-5}	1	2,3,7,8-TCDD TEQ, Benzene [g,i]
	Subsurface Soil and Indoor Air	9×10^{-6}	1×10^{-5}	0.7	2,3,7,8-TCDD TEQ, BAP EQ, Benzene [g,i]
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	2×10^{-6}	2×10^{-6}	0.1	2,3,7,8-TCDD TEQ
	Subsurface Soil and Indoor Air	2×10^{-6}	4×10^{-6}	0.06	BAP EQ [g]
Future Recreational User	Surface Soil	3×10^{-6}	3×10^{-6}	0.4	2,3,7,8-TCDD TEQ
	Subsurface Soil	3×10^{-6}	4×10^{-6}	0.2	BAP EQ [g]
Future Construction Worker	Subsurface Soil and Groundwater (GW-S4) (dermal and inhalation in trench)	3×10^{-6}	7×10^{-6}	0.8	Arsenic [g,j], Chromium
Exposure Unit 17					
Current Resident	Surface Soil and Indoor Air	3×10^{-5}	3×10^{-5}	1	2,3,7,8-TCDD TEQ, BAP EQ
Future Resident	Surface Soil and Indoor Air	3×10^{-5}	3×10^{-5}	1	2,3,7,8-TCDD TEQ, BAP EQ
	Subsurface Soil and Indoor Air	3×10^{-5}	2×10^{-5}	0.7	2,3,7,8-TCDD TEQ, BAP EQ
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	1×10^{-5}	1×10^{-5}	0.1	2,3,7,8-TCDD TEQ, BAP EQ
	Subsurface Soil and Indoor Air	1×10^{-5}	9×10^{-6}	0.07	BAP EQ
Future Recreational User	Surface Soil	1×10^{-5}	1×10^{-5}	0.4	2,3,7,8-TCDD TEQ, BAP EQ
	Subsurface Soil	1×10^{-5}	1×10^{-5}	0.3	BAP EQ

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Exposure Unit 17 (Continued)					
Future Construction Worker	Subsurface Soil and Groundwater (GW-NS1) (dermal and inhalation in trench)	3×10^{-6}	4×10^{-6}	0.3	Chromium
Exposure Unit 18					
Current Resident	Surface Soil	3×10^{-6}	5×10^{-6}	0.6	BAP EQ
Future Resident	Surface Soil	3×10^{-6}	3×10^{-6}	0.5	BAP EQ
	Subsurface Soil	3×10^{-6}	3×10^{-6}	0.2	BAP EQ
Future Commercial/ Industrial Worker	Surface Soil	1×10^{-6}	1×10^{-6}	0.05	--
	Subsurface Soil	1×10^{-6}	1×10^{-6}	0.01	--
Future Recreational User	Surface Soil	1×10^{-6}	1×10^{-6}	0.2	--
	Subsurface Soil	1×10^{-6}	2×10^{-6}	0.06	--
Future Construction Worker	Subsurface Soil [e]	2×10^{-6}	2×10^{-6}	0.09	Chromium
Exposure Unit 19					
Current Resident	Surface Soil and Indoor Air	1×10^{-5}	1×10^{-5}	1	BAP EQ
Future Resident	Surface Soil and Indoor Air	1×10^{-5}	1×10^{-5}	1	BAP EQ
	Subsurface Soil and Indoor Air	1×10^{-5}	1×10^{-5}	0.7	BAP EQ
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	5×10^{-6}	5×10^{-6}	0.1	BAP EQ
	Subsurface Soil and Indoor Air	4×10^{-6}	4×10^{-6}	0.07	BAP EQ
Future Recreational User	Surface Soil	6×10^{-6}	6×10^{-6}	0.4	BAP EQ
	Subsurface Soil	5×10^{-6}	4×10^{-6}	0.3	BAP EQ
Future Construction Worker	Subsurface Soil and Groundwater (GW-S4) (dermal and inhalation in trench)	3×10^{-6}	7×10^{-6}	1	Arsenic [g,j], Chromium

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Area of Interest 1201/1203/1220					
Current Resident	Surface Soil	3×10^{-5}	3×10^{-5}	4 (2) [f]	2,3,7,8-TCDD TEQ, BAP EQ, Lead
Future Resident	Surface Soil	3×10^{-5}	3×10^{-5}	4 (2) [f]	2,3,7,8-TCDD TEQ, BAP EQ, Lead
	Subsurface Soil	5×10^{-5}	1×10^{-4}	4 (2) [f]	2,3,7,8-TCDD TEQ, Arsenic, BAP EQ, Lead
Future Commercial/ Industrial Worker	Surface Soil	8×10^{-6}	9×10^{-6}	0.4	2,3,7,8-TCDD TEQ, Lead
	Subsurface Soil	1×10^{-5}	4×10^{-5}	0.4	2,3,7,8-TCDD TEQ, Arsenic, BAP EQ [g], Lead
Future Recreational User	Surface Soil	1×10^{-5}	1×10^{-5}	2 (0.9) [f]	2,3,7,8-TCDD TEQ
	Subsurface Soil	2×10^{-5}	6×10^{-5}	1	2,3,7,8-TCDD TEQ, Arsenic, BAP EQ [g]
Future Construction Worker	Subsurface Soil [e]	5×10^{-6}	9×10^{-6}	2 (1) [f]	Arsenic [g], Chromium
Area of Interest 1246					
Current Resident	Surface Soil	3×10^{-6}	4×10^{-6}	1	BAP EQ
Future Resident	Surface Soil	3×10^{-6}	4×10^{-6}	1	BAP EQ
	Subsurface Soil	2×10^{-6}	3×10^{-6}	1	BAP EQ, Lead
Future Commercial/ Industrial Worker	Surface Soil	1×10^{-6}	2×10^{-6}	0.1	BAP EQ [g]
	Subsurface Soil	9×10^{-7}	1×10^{-6}	0.1	--
Future Recreational User	Surface Soil	1×10^{-6}	2×10^{-6}	0.5	BAP EQ [g]
	Subsurface Soil	1×10^{-6}	2×10^{-6}	0.5	--
Future Construction Worker	Subsurface Soil [e]	1×10^{-7}	2×10^{-7}	0.4	--

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Area of Interest 1248					
Current Resident	Surface Soil	3×10^{-6}	5×10^{-6}	0.3	BAP EQ
Future Resident	Surface Soil	3×10^{-6}	5×10^{-6}	0.3	BAP EQ
	Subsurface Soil	3×10^{-6}	4×10^{-6}	0.3	BAP EQ
Future Commercial/ Industrial Worker	Surface Soil	1×10^{-6}	2×10^{-6}	0.02	BAP EQ [g]
	Subsurface Soil	1×10^{-6}	2×10^{-6}	0.02	--
Future Recreational User	Surface Soil	1×10^{-6}	2×10^{-6}	0.09	BAP EQ [g]
	Subsurface Soil	1×10^{-6}	2×10^{-6}	0.1	BAP EQ [g]
Future Construction Worker	Subsurface Soil and Groundwater (GW-S5) (dermal and inhalation in trench)	6×10^{-7}	2×10^{-6}	0.3	Arsenic [g,j]
Area of Interest 1254					
Current Resident	Surface Soil	1×10^{-5}	1×10^{-5}	1	BAP EQ, PCBs, Lead
Future Resident	Surface Soil	9×10^{-6}	1×10^{-5}	1	BAP EQ, PCBs, Lead
	Subsurface Soil	5×10^{-6}	6×10^{-6}	0.5	BAP EQ, PCBs
Future Commercial/ Industrial Worker	Surface Soil	4×10^{-6}	4×10^{-6}	0.2	BAP EQ [g], PCBs
	Subsurface Soil	2×10^{-6}	2×10^{-6}	0.07	--
Future Recreational User	Surface Soil	4×10^{-6}	5×10^{-6}	0.5	BAP EQ, PCBs
	Subsurface Soil	2×10^{-6}	3×10^{-6}	0.2	BAP EQ [g]
Future Construction Worker	Subsurface Soil [e]	3×10^{-7}	4×10^{-7}	0.3	--
Area of Interest Halyburton/Bigelow Court					
Current Resident	Surface Soil	8×10^{-5}	8×10^{-5}	15 (14) [f]	2,3,7,8-TCDD TEQ, BAP EQ, PCBs

TABLE 2. ESTIMATED CANCER RISKS, NONCANCER HAZARDS, AND CONTAMINANTS OF CONCERN

Receptor	Exposure Medium [a]	Cancer Risk [b]		Hazard Index [c]	Chemical of Concern Identified in the HHRA [d]
		EPA	Cal/EPA		
Area of Interest Halyburton/Bigelow Court (Continued)					
Future Resident	Surface Soil	7×10^{-5}	7×10^{-5}	15 (13) [f]	2,3,7,8-TCDD TEQ, BAP EQ, PCBs
	Subsurface Soil	1×10^{-4}	1×10^{-4}	22 (20) [f]	2,3,7,8-TCDD TEQ, BAP EQ [g], PCBs
Future Commercial/ Industrial Worker	Surface Soil	3×10^{-5}	3×10^{-5}	2 (2) [f]	PCBs
	Subsurface Soil	4×10^{-5}	4×10^{-5}	3 (3) [f]	PCBs
Future Recreational User	Surface Soil	3×10^{-5}	3×10^{-5}	7 (6) [f]	PCBs
	Subsurface Soil	5×10^{-5}	5×10^{-5}	10 (9) [f]	PCBs
Future Construction Worker	Subsurface Soil and Groundwater (GW-NS1) (dermal and inhalation in trench)	8×10^{-6}	9×10^{-6}	12 (11) [f]	Chromium, PCBs
Area of Interest Mariner Drive					
Current Resident	Surface Soil and Indoor Air	3×10^{-5}	1×10^{-4}	2 (0.6) [f]	2,3,7,8-TCDD TEQ, Arsenic, BAP EQ
Future Resident	Surface Soil and Indoor Air	3×10^{-5}	1×10^{-4}	2 (0.6) [f]	2,3,7,8-TCDD TEQ, Arsenic, BAP EQ
	Subsurface Soil and Indoor Air	3×10^{-5}	3×10^{-5}	6 (3) [f]	2,3,7,8-TCDD TEQ, BAP EQ, Lead, PCBs, Thallium
Future Commercial/ Industrial Worker	Surface Soil and Indoor Air	9×10^{-6}	4×10^{-5}	0.2	Arsenic, BAP EQ
	Subsurface Soil and Indoor Air	9×10^{-6}	9×10^{-6}	0.6	2,3,7,8-TCDD TEQ, BAP EQ
Future Recreational User	Surface Soil	1×10^{-5}	5×10^{-5}	0.8	2,3,7,8-TCDD TEQ, Arsenic, BAP EQ
	Subsurface Soil	1×10^{-5}	1×10^{-5}	2 (1) [f]	2,3,7,8-TCDD TEQ, BAP EQ
Future Construction Worker	Subsurface Soil and Groundwater (GW-S5) (dermal and inhalation in trench)	7×10^{-6}	9×10^{-6}	7 (2) [f]	Arsenic [g,j], Chromium, Manganese, Nickel

Table 2 Notes:

a Surface soil is 0 to 2 feet bgs. Subsurface soil is 0 to 10 feet bgs. Cancer risks and noncancer HIs are based on soil exposure at unpaved locations for the current residential scenario and unpaved and paved locations for future scenarios.

b Results shown are based on EPA and Cal/EPA toxicity criteria used in the HHRA as part of the 2012 remedial investigation report. The risks exclude those metals for which site concentrations do not exceed ambient concentrations for NAVSTA TI.

c Toxicity criteria for noncarcinogenic chemicals of potential concern do not differ between EPA and Cal/EPA toxicity criteria.

d COCs are for soil and based on both EPA and Cal/EPA toxicity criteria, unless otherwise noted. If no chemicals are listed, then no COCs were identified in the human health risk assessment. Polycyclic aromatic hydrocarbons are shown in the table as BAP EQ, and dioxins and furans are shown in the table as 2,3,7,8-TCDD TEQ.

e Exposure unit does not include a groundwater exposure area. Therefore, exposure pathways for groundwater are incomplete for this exposure unit.

f The value in parentheses is the highest noncancer HI, segregated by target organ. Segregated HIs were calculated and are shown when the total HI exceeds 1.

g Chemical is a risk driver based on Cal/EPA toxicity criteria only.

h Chemical is a risk driver in both soil and groundwater.

i Chemical is a risk driver in indoor air only.

j Chemical is a risk driver in groundwater only.

2,3,7,8-TCDD TEQ	2,3,7,8-Tetrachlorodibenzo-p-dioxin toxicity equivalent
BAP EQ	Benzo(a)pyrene equivalent concentration
bgs	Below ground surface
Cal/EPA	California Environmental Protection Agency
COC	Chemical of concern
EPA	U.S. Environmental Protection Agency
HHRA	Human health risk assessment
HI	Hazard index
NAVSTA TI	Naval Station Treasure Island
PCB	Polychlorinated biphenyls
NS1	Non-source area one
VI	Vapor intrusion

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 1					
Current and Future Resident	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				BAP EQ	Below RG
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Recreational User	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Below RBC
Exposure Unit 2					
Current and Future Resident	Surface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
Future Resident	Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
				Antimony	
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Recreational User	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Below RBC
	Groundwater	--	--	Arsenic	RI nature and extent eval [c]
Exposure Unit 3					
Current Resident	Surface Soil	--	--	Arsenic	RI nature and extent eval [c]
				BAP EQ	RI nature and extent eval [c]
				Lead	Below RG

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 3 (Continued)					
Future Resident	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				BAP EQ	RI nature and extent eval [c]
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Recreational User	Surface Soil	--	--	Arsenic	RI nature and extent eval [c]
				BAP EQ	RI nature and extent eval [c]
	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Below RBC
Exposure Unit 4					
Current and Future Resident	Surface Soil	--	--	Arsenic	RI nature and extent eval [c]
				BAP EQ	RI nature and extent eval [c]
Future Resident	Subsurface Soil	4,4-DDD	Exceeds RBC	Arsenic	RI nature and extent eval [c]
		Chromium	Exceeds RBC	BAP EQ	RI nature and extent eval [c]
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Recreational User	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Low cancer risk
				Manganese	Below RBC
	Groundwater	--	--	Arsenic	RI nature and extent eval [c]
Exposure Unit 5					
Current Resident	Surface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		Lead	Exceeds RG	PCBs	Below RG

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 5 (Continued)					
Future Resident	Surface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		Chromium	Exceeds RBC	PCBs	Below RG
		Lead	Exceeds RG		
	Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		Chromium	Exceeds RBC	Manganese	RI nature and extent eval [c]
		Lead	Exceeds RG	PCBs	Below RG
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Recreational User	Surface and Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Low cancer risk
				Manganese	RI nature and extent eval [c]
	Groundwater	--	--	Arsenic	RI nature and extent eval [c]
Exposure Unit 6					
Current and Future Resident	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		Lead	HHRA risk driver		
		2,3,7,8-TCDD TEQ	Collocated chemical [e]		
		PCBs	Collocated chemical [e]		
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		PCBs	Collocated chemical [e]		
Future Recreational User	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		PCBs	Collocated chemical [e]		

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 6 (Continued)					
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Below RBC
				Manganese	RI nature and extent eval [c]
	Groundwater	--	--	Arsenic	RI nature and extent eval [c]
Exposure Unit 7					
Current and Future Resident	Surface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		PCBs	Exceeds RG	Chlordane	RI nature and extent eval [c]
Future Resident	Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		Lead	HHRA risk driver	Chlordane	RI nature and extent eval [c]
		PCBs	Exceeds RG		
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		PCBs	Exceeds RG		
Future Recreational User	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Below RBC
				Manganese	Below RBC
	Groundwater	--	--	Arsenic	RI nature and extent eval [c]
Exposure Unit 8					
Current and Future Resident	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	--	--
		Lead	HHRA risk driver		
		2,3,7,8-TCDD TEQ	Collocated chemical [e]		
		PCBs	Exceeds RG		

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 8 (Continued)					
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	2,3,7,8-TCDD TEQ	Collocated chemical [e]	--	--
		PCBs	Exceeds RG		
Future Recreational User	Surface Soil	BAP EQ	HHRA risk driver	--	--
		2,3,7,8-TCDD TEQ	Collocated chemical [e]		
		PCBs	Exceeds RG		
	Subsurface Soil	2,3,7,8-TCDD TEQ	Collocated chemical [e]	--	--
Future Construction Worker	Subsurface Soil	--	--	Chromium	Below RBC
	Groundwater	--	--	Arsenic	RI nature and extent eval [c]
Exposure Unit 9					
Current and Future Resident	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	--	--
		PCBs	HHRA risk driver		
		Lead	HHRA risk driver		
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	--	--
		PCBs	HHRA risk driver		
Future Recreational User	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	--	--
		PCBs	HHRA risk driver		
Future Construction Worker	Subsurface Soil	--	--	Chromium	Below RBC
				Manganese	Below RBC
Exposure Unit 10					
Current and Future Resident	Surface Soil	BAP EQ	HHRA risk driver	--	--
Future Resident	Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
Future Commercial/ Industrial Worker	Surface Soil	BAP EQ	HHRA risk driver	--	--
	Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 10 (Continued)					
Future Recreational User	Surface Soil	BAP EQ	HHRA risk driver	--	--
	Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Below RBC
Exposure Unit 11					
Current and Future Resident	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		PCBs	Exceeds RG		
Future Resident	Subsurface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		PCBs	Exceeds RG		
		Lead	Exceeds RG		
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	PCBs	Exceeds RG	Arsenic	RI nature and extent eval [c]
Future Recreational User	Surface and Subsurface Soil	PCBs	Exceeds RG	Arsenic	RI nature and extent eval [c]
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Below RBC
				Manganese	Below RBC
Exposure Unit 12					
Current and Future Resident	Surface and Subsurface Soil	PCBs	Exceeds RG	BAP EQ	RI nature and extent eval [c]
	Indoor Air	--	--	Chloroform [d]	RI nature and extent eval [c]
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	PCBs	Exceeds RG	BAP EQ	RI nature and extent eval [c]
Future Recreational User	Surface and Subsurface Soil	PCBs	Exceeds RG	BAP EQ	RI nature and extent eval [c]

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 12 (Continued)					
Future Construction Worker	Subsurface Soil	--	--	Chromium	Below RBC
Exposure Unit 13					
Current and Future Resident	Surface and Subsurface Soil	--	--	BAP EQ	Below RG
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	--	--	BAP EQ	Below RG
Future Recreational User	Surface and Subsurface Soil	--	--	BAP EQ	Below RG
Future Construction Worker	Subsurface Soil	--	--	Chromium	Below RBC
	Groundwater	--	--	--	--
Exposure Unit 14					
Current Resident	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	BAP EQ	Below RG
Future Resident	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	BAP EQ	Below RG
				Chlordane	RI nature and extent eval [c]
	Subsurface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		Lead	HHRA risk driver	BAP EQ	Below RG
				Chlordane	RI nature and extent eval [c]
Future Commercial/ Industrial Worker	Surface Soil	--	--	BAP EQ	Below RG
	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
Future Recreational User	Surface Soil	--	--	BAP EQ	Below RG
				Chlordane	RI nature and extent eval [c]
	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chlordane	RI nature and extent eval [c]

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 14 (Continued)					
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
				Chromium	Below RBC
				Manganese	Below RBC
	Groundwater	--	--	--	--
Exposure Unit 15					
Current and Future Resident	Surface and Subsurface Soil	--	--	BAP EQ	Below RG
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	--	--	BAP EQ	Below RG
Future Recreational User	Surface and Subsurface Soil	--	--	BAP EQ	Below RG
Future Construction Worker	Subsurface Soil	--	--	Chromium	Below RBC
	Groundwater	--	--	Arsenic	Low cancer risk
Exposure Unit 16					
Current and Future Resident	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
	Indoor Air	--	--	Benzene [d]	Below RBC
Future Resident	Subsurface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	BAP EQ	Below RG
	Indoor Air	--	--	Benzene	Below RBC [c]
Future Commercial/ Industrial Worker	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
	Subsurface Soil	--	--	BAP EQ	Below RG
Future Recreational User	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
	Subsurface Soil	--	--	BAP EQ	Below RG
Future Construction Worker	Subsurface Soil	--	--	Chromium	Below RBC
	Groundwater	--	--	Arsenic	Low cancer risk

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 17					
Current and Future Resident	Surface and Subsurface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
		BAP EQ	HHRA risk driver		
Future Commercial/ Industrial Worker	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
		BAP EQ	HHRA risk driver		
	Subsurface Soil	BAP EQ	HHRA risk driver	--	--
Future Recreational User	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
		BAP EQ	HHRA risk driver		
	Subsurface Soil	BAP EQ	HHRA risk driver	--	--
Future Construction Worker	Subsurface Soil	--	--	Chromium	Below RBC
	Groundwater	--	--	--	--
Exposure Unit 18					
Current and Future Resident	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	--	--
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	--	--	--	--
Future Recreational User	Surface and Subsurface Soil	--	--	--	--
Future Construction Worker	Subsurface Soil	--	--	Chromium	Below RBC
Exposure Unit 19					
Current and Future Resident	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	--	--
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	--	--
Future Recreational User	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	--	--

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Exposure Unit 19 (Continued)					
Future Construction Worker	Subsurface Soil	--	--	Chromium	Below RBC
	Groundwater	--	--	Arsenic	Low cancer risk
Area of Interest 1201/1203/1220					
Current and Future Resident	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	BAP EQ	Below RG
		Lead	HHRA risk driver		
Future Resident	Subsurface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		Lead	HHRA risk driver	BAP EQ	Below RG
Future Commercial/ Industrial Worker	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
		Lead	HHRA risk driver		
	Subsurface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		Lead	HHRA risk driver	BAP EQ	Below RG
Future Recreational User	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
	Subsurface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
				BAP EQ	Below RG
Future Construction Worker	Subsurface Soil	--	--	Arsenic	RI nature and extent eval [c]
		--	--	Chromium	Below RBC
Area of Interest 1246					
Current and Future Resident	Surface Soil	--	--	BAP EQ	Below RG
Future Resident	Subsurface Soil	--	--	BAP EQ	Below RG
				Lead	Below RG
Future Commercial/ Industrial Worker	Surface Soil	--	--	BAP EQ	Below RG
	Subsurface Soil	--	--	--	--

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Area of Interest 1246 (Continued)					
Future Recreational User	Surface Soil	--	--	BAP EQ	Below RG
	Subsurface Soil	--	--	--	--
Future Construction Worker	Subsurface Soil	--	--	--	--
Area of Interest 1248					
Current and Future Resident	Surface and Subsurface Soil	--	--	BAP EQ	Below RG
Future Commercial/ Industrial Worker	Surface Soil	--	--	BAP EQ	Below RG
	Subsurface Soil	--	--	--	--
Future Recreational User	Surface and Subsurface Soil	--	--	BAP EQ	Below RG
Future Construction Worker	Subsurface Soil	--	--	--	--
	Groundwater	--	--	Arsenic	RI nature and extent eval [c]
Area of Interest 1254					
Current and Future Resident	Surface Soil	--	--	BAP EQ	RI nature and extent eval [c]
				Lead	Below RG
				PCBs	Removed in 2001 TCRA
Future Resident	Subsurface Soil	--	--	BAP EQ	RI nature and extent eval [c]
				PCBs	Removed in 2001 TCRA
Future Commercial/ Industrial Worker	Surface Soil	--	--	BAP EQ	RI nature and extent eval [c]
				PCBs	Removed in 2001 TCRA
	Subsurface Soil	--	--	--	--
Future Recreational User	Surface Soil	--	--	BAP EQ	RI nature and extent eval [c]
				PCBs	Removed in 2001 TCRA
	Subsurface Soil	--	--	BAP EQ	RI nature and extent eval [c]

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Area of Interest 1254 (Continued)					
Future Construction Worker	Subsurface Soil	--	--	--	--
Area of Interest Halyburton/Bigelow Court					
Current and Future Resident	Surface and Subsurface Soil	BAP EQ	HHRA risk driver	2,3,7,8-TCDD TEQ	Below ambient
		PCBs	HHRA risk driver		
Future Commercial/ Industrial Worker	Surface and Subsurface Soil	PCBs	HHRA risk driver	--	--
Future Recreational User	Surface and Subsurface Soil	PCBs	HHRA risk driver	--	--
Future Construction Worker	Subsurface Soil	PCBs	HHRA risk driver	Chromium	Below RBC
	Groundwater	--	--	--	--
Area of Interest Mariner Drive					
Current and Future Resident	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		BAP EQ	HHRA risk driver		
Future Resident	Subsurface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	PCBs	Below RG
		BAP EQ	HHRA risk driver	Thallium	RI nature and extent eval [c]
		Lead	HHRA risk driver		
		4,4-DDD	Exceeds RBC		
		alpha-BHC	Exceeds RBC		
		Chromium	Exceeds RBC		
Future Commercial/ Industrial Worker	Surface Soil	BAP EQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
	Subsurface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
		BAP EQ	HHRA risk driver		

TABLE 3. CHEMICAL EVALUATION BY EXPOSURE UNIT AND AREA OF INTEREST

Receptor	Exposure Medium [a]	Chemicals Targeted for Remediation [b]	Basis	Chemicals Not Requiring Remediation	Basis
Area of Interest Mariner Drive (Continued)					
Future Recreational User	Surface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	Arsenic	RI nature and extent eval [c]
		BAP EQ	HHRA risk driver		
	Subsurface Soil	2,3,7,8-TCDD TEQ	HHRA risk driver	--	--
		BAP EQ	HHRA risk driver		
Future Construction Worker	Subsurface Soil	--	--	Chromium	Low cancer risk
				Manganese	Below RBC
				Nickel	RI nature and extent eval [c]
	Groundwater	--	--	Arsenic	RI nature and extent eval [c]

Table 3 Notes:

a Surface soil is 0 to 2 feet bgs. Subsurface soil is 0 to 10 feet bgs. Cancer risks and noncancer HIs are based on soil exposure at unpaved locations for the current residential scenario and unpaved and paved locations for future scenarios.

b Polycyclic aromatic hydrocarbons are shown in the table as BAP EQ and dioxins and furans are shown in the table as 2,3,7,8-TCDD TEQ.

c The nature and extent eval is the characterization of chemicals in soil and groundwater within Site 12 presented in Section 4.0 of the 2012 RI.

d Cancer risks from inhalation of chemicals in indoor air in EUs where volatile chemicals were detected were less than 10^{-6} and noncancer hazards were less than 1, except for Exposure Unit 12 (from potential risks from chloroform) and Exposure Unit 16 (from potential risks from benzene). Soil gas concentrations of chloroform do not need to be addressed because chloroform was not detected in soil or groundwater and risks were minor (estimated at $2x10^{-6}$). Soil gas concentrations of benzene do not need to be address because additional data gap sampling at Exposure Unit 16 completed in 2014 showed no concentrations of volatile chemicals, including benzene, above screening criteria.

e Chemical is identified for removal only because it is located in the same sample as another chemical that is targeted for removal based on risk or exceeding a cleanup goal.

2,3,7,8-TCDD TEQ	2,3,7,8-Tetrachlorodibenzo-p-dioxin toxicity equivalent
4,4-DDD	4,4- Dichlorodiphenyldichloroethane
BAP EQ	Benzo(a)pyrene equivalent concentration
Cal/EPA	California Environmental Protection Agency
Eval	Evaluation
HHRA	Human health risk assessment
HI	Hazard index
PCB	Polychlorinated biphenyls
RBC	Risk-based concentration
RG	Remediation goal
RI	Remedial investigation
TCRA	Time-critical removal action

2.5.2 Ecological Risk Assessment

The Navy performed a terrestrial SLERA to evaluate whether chemicals at Site 12 pose potentially unacceptable risks to wildlife. The SLERA recommended no further evaluation of ecological risk at Site 12 because of the poor quality of habitat on NAVSTA TI. The Navy also evaluated potential risk associated with the discharge of groundwater to the San Francisco Bay in an **aquatic habitat assessment**(20), which concluded that no COCs are present at levels that pose an unacceptable level of risk to aquatic and avian receptors.

After the SLERA was completed, changes to land uses during redevelopment of Site 12 were identified. Currently, three types of open space uses are proposed as part of the Site 12 redevelopment: Northern Shoreline Park, the Wilds, and Stormwater Wetlands. Based on these changes, there is a potential for ecological receptors to use these areas. As a result, the Navy completed further ecological risk evaluation on the Wilds and the Stormwater Wetlands. (No further ecological evaluation was completed for the Northern Shoreline Park because this land use had been considered in the SLERA.) The Navy calculated ecological screening levels in soil for birds and mammals that may use these areas using food-chain models. The ecological screening levels were compared with the remediation goals developed to protect human receptors. The remediation goals protective of human health for PAHs and dioxins are lower than the calculated ecological screening levels. The remediation goals protective of human health for PCBs and lead are higher than the calculated ecological screening levels. However, the anticipated post-excavation residual 95 upper confidence level of the mean for both PCBs and lead is lower than the calculated ecological screening level. The Navy concluded that implementing the cleanup action for the protection of human health will result in concentrations of chemicals at the Wilds and Stormwater Wetlands that will be **protective of ecological species**(21) that may inhabit the area.

The Navy and the regulatory agencies have already signed and published a no action ROD for offshore sediments (evaluated as Site 13) at NAVSTA TI based on the determination that **sediment**(22) does not pose unacceptable risk to human health or the environment. Therefore, the 2012 RI report considered only potential impacts to aquatic wildlife in San Francisco Bay from contaminants discharging from the site via groundwater. The evaluation identified arsenic from the Gateview Arsenic/TPH Area as a **potential risk to aquatic receptors**(23) in the San Francisco Bay. Elevated dissolved arsenic concentrations are reported to result from reducing conditions in groundwater that occur from the biodegradation of dissolved petroleum hydrocarbons.

2.6 BASIS FOR RESPONSE ACTION

The remedy selected in this non-SWDA and non-radiological ROD/Final RAP is necessary to protect public health, welfare, and the environment from actual or potential releases of hazardous substances. The Navy, in partnership with the DTSC and the Water Board, considered all pertinent factors in accordance with CERCLA and NCP remedy selection criteria and concluded that remedial action is necessary to address chemical contamination at Site 12. The remedy will address potential risk to current and future residential receptors from dermal contact, incidental

ingestion, and inhalation of contaminants in soil. The remedy will also address potential risk to off-site aquatic receptors in San Francisco Bay from arsenic-contaminated groundwater.

2.7 PRINCIPAL THREAT WASTE

When a remedy is selected, the NCP establishes the expectation that the remedy should use treatment to address the principal threats posed by a site if practicable. "Principal threat" is a concept applied to characterization of source materials at a site. Principal threats are generally considered highly toxic or highly mobile source materials that cannot be contained in a reliable manner, or source materials that would pose significant risk to human health and/or the environment if exposure would occur. There are no source materials that constitute principal threat waste at Site 12.

2.8 REMEDIAL ACTION OBJECTIVES

After the decision is made that a remedial action is necessary, RAOs are established to address potential risks posed by a site and to assess the ability of a technology to address those risks. RAOs are environmental, medium-specific goals that will protect human health and the environment.

The Navy developed the following RAOs to address exposures to current and future residents and off-site aquatic receptors under the reasonably anticipated future use of Site 12:

- Reduce risk to current and future residents by minimizing the dermal contact, incidental ingestion, and inhalation with soil containing known concentrations of lead above the remediation goal.

- Reduce risk to current and future residents by minimizing the dermal contact, incidental ingestion, and inhalation with soil containing known concentrations of PAHs (based on a BaP equivalent concentration [EQ]) above the remediation goal

- Reduce risk to current and future residents by minimizing the dermal contact, incidental ingestion, and inhalation with soil containing known concentrations of PCBs (as total Aroclors) above the remediation goal

- Reduce risk to current and future residents by minimizing the dermal contact, incidental ingestion, and inhalation with soil containing known concentrations of dioxins and furans (as 2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD] toxicity equivalent [TEQ]) above the remediation goal.

- Reduce risk to the marine ecology through contact with groundwater containing arsenic by completing TPH source area removal.

The Navy developed numerical remediation goals for soil protective of current and future residential receptors and has targeted all locations within Site 12 with concentrations of COCs above these numerical remediation goals for excavation and off-site disposal. The Navy did not

develop RAOs or numerical remediation goals for non-residential receptors because excavating all locations with concentrations of COCs above residential remediation goals will also be protective of future commercial/industrial workers, future recreational users, and future construction workers because the excavation will remove concentrations of the COCs that posed unacceptable risk to these receptors from the site. The Navy also developed a numerical remediation goal for arsenic in groundwater that is protective of off-site aquatic receptors.

In addition to developing the RAOs and remediation goals, the Navy will address other chemicals in soil, although these chemicals were not identified as COCs in the human health or ecological risk assessments. These chemicals are pesticides, chromium, and TPH. The Navy has identified remediation goals for pesticides and chromium. Because TPH is not a CERCLA COC, the numeric values provided are not remediation goals for Site 12. These numeric values will be used to target mass reduction of free and smeared product in the Gateview Avenue Arsenic/TPH Area.

Table 4 presents the remediation goals for Site 12.

TABLE 4. SITE 12 REMEDIATION GOALS

Chemical of Concern	Goal	Receptor	Basis
Soil			
Lead	400 mg/kg	Current and Future Residents	EPA residential action level to maintain consistency with the ongoing soil removal actions
Dioxins and Furans	12 ng/kg	Current and Future Residents	NAVSTA TI ambient concentration for 2,3,7,8-TCDD TEQ
PCBs (total Aroclors)	1.0 mg/kg	Current and Future Residents	TSCA self-implementing cleanup goal for total PCBs (total Aroclors) for high occupancy use
PAHs	0.62 mg/kg	Current and Future Residents	Residential action level for BAP EQ
4,4-DDD[a]	2.0 mg/kg	Current and Future Residents	Risk-based concentration
alpha-BHC[a]	0.077 mg/kg		
Total Chromium[a]	280 mg/kg	Current and Future Residents	Risk-based concentration
TPH[b]	1,380 mg/kg (TPH-d)	Current and Future Residents	Treasure Island Final Preliminary Remediation Criteria for Petroleum and Petroleum Constituents
	1,030 mg/kg (TPH-g)		
	1,900 mg/kg (TPH-m)		
Groundwater			
Arsenic	36 µg/L	Off-site aquatic organisms along the shoreline	California Toxics Rule

Table 4 Notes:

a Pesticides and total chromium were not identified as COCs; however, the Navy will excavate discrete locations containing pesticides and total chromium concentrations greater than the identified RBCs.

b Because TPH is not a CERCLA COC, the numeric values provided are not remediation goals for Site 12. These numeric values will be used to target mass reduction of free and smeared product in the Gateview Avenue Arsenic/TPH Area.

µg/L	Microgram per liter	PAH	Polycyclic aromatic hydrocarbons
BAP EQ	Benzo(a)pyrene equivalent concentration	PCB	Polychlorinated biphenyls
BHC	Benzene hexachloride	RBC	Risk-based concentration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	TCDD	Tetrachlorodibenzo-p-dioxin
		TEQ	Toxicity equivalent
COC	Chemical of concern	TPH	Total petroleum hydrocarbons
DDD	Dichlorodiphenyldichloroethane	TPH-d	Total petroleum hydrocarbons diesel range
mg/kg	Milligrams per kilogram	TPH-g	Total petroleum hydrocarbons gasoline range
NAVSTA TI	Naval Station Treasure Island	TPH-m	Total petroleum hydrocarbons motor oil range
ng/kg	Nanograms per kilogram	TSCA	Toxic Substances Control Act

2.9 DESCRIPTION AND COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES

The alternatives developed and evaluated in the FS were superseded by the alternatives developed and evaluated in the FS addendum. The Navy identified general response actions in the FS addendum to address the RAOs and achieve the remediation goals. The technologies and associated process options were screened using three criteria: (1) effectiveness, (2) implementability, and (3) cost. After the initial screening of general response actions, three remedial alternatives were developed to address contaminants in soil and five remedial alternatives were developed to address contaminants in groundwater.

The alternatives for soil are:

- **Alternative S-1**: No Action
- **Alternative S-2**: Engineered Cover and Excavation
- **Alternative S-3**: Excavation

The alternatives for groundwater are:

- **Alternative GW-1**: No Action
- **Alternative GW-2**: Permeable Reactive Barrier
- **Alternative GW-3**: In Situ Soil Mixing with Chemical Oxidants and Groundwater Monitoring
- **Alternative GW-4**: Excavation, Biostimulation, and Monitored Natural Attenuation (MNA)
- **Alternative GW-5**: Excavation, Biostimulation, In Situ Soil Mixing with Chemical Oxidants, and MNA

2.9.1 Description of Remedial Alternatives

Table 5 provides the major components, details, and cost of each remedial alternative for soil. Table 6 provides the major components, details, and cost of each remedial alternative for groundwater.

TABLE 5. SUMMARY OF REMEDIAL ALTERNATIVES FOR SOIL

Remedial Alternative[1]	Components	Details	Cost
S-1 No Action	None	No remedial action would be taken. This alternative is required by CERCLA as a baseline for comparison with other alternatives. Under this alternative, no further remediation would be performed.	Capital Cost: $0 O&M Cost: $0 Net Present Value Cost: $0 Timeframe: NA
S-2 Engineered Cover and Excavation	Engineered cover Excavation LUCs	Engineered covers would be constructed over areas where contaminants exceed goals and excavation would not be practical because structures or buildings overlie the contamination or significant subgrade utilities below 2 feet deep bgs. Other locations of soil with contaminants above remediation goals would be excavated and disposed of off site. ICs would be needed to maintain the integrity of the engineered covers.	Capital Cost: $2,625,000 O&M Cost: $1,322,000 **Net Present Value Cost: $2,419,000(24)** Timeframe: 30 years
S-3 Excavation	**Excavation and off-site disposal**	**Discrete locations of soil with contaminants at concentrations above the remediation goals would be excavated, staged, and then disposed of at an off-site facility. Many of these discrete locations will be excavated in a removal action. The removal action will not remove all of the discrete locations with contaminants above the remediation goals, so any remaining locations will be addressed by the remedial action selected in this non-SWDA and non-radiological ROD/Final RAP in 2018/2019.**	**Capital Cost: $4,033,000** **O&M Cost: $81,000** **Net Present Value Cost: $4,936,000(25)** **Timeframe: 1 year**

Table 5 Notes:

The selected alternative is bolded and shaded.

bgs	Below ground surface
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
IC	Institutional control
LUC	Land use control
NA	Not applicable
O&M	Operation and maintenance
RAP	Remedial action plan
ROD	Record of decision

TABLE 6. SUMMARY OF REMEDIAL ALTERNATIVES FOR GROUNDWATER

Remedial Alternative	Components	Details	Cost
GW-1 No Action	None	No remedial action would be taken. This alternative is required by CERCLA as a baseline for comparison with other alternatives. Under this alternative, no further remediation would be performed.	Capital Cost: $0 O&M Cost: $0 Net Present-Value Cost: $0 Timeframe: NA
GW-2 Permeable Reactive Barrier	Permeable reactive barrier LUCs	A permeable reactive barrier would be constructed by in situ soil blending and limited excavation using appropriate material that would encourage the precipitation and adsorption of dissolved arsenic. Groundwater monitoring would be implemented to demonstrate when the remediation goal is met. ICs would be needed to maintain the permeable reactive barrier.	Capital Cost: $1,158,000 O&M Cost: $7,738,000 **Net Present-Value Cost: $8,425,000(26)** Timeframe: 30 years
GW-3 In Situ Soil Mixing with Chemical Oxidants, Groundwater Monitoring	In situ soil mixing Groundwater monitoring	Soil would be mixed with chemical oxidants in the source area to degrade the organic contaminants. The effectiveness will depend on the thickness of the smeared product. Groundwater monitoring would be implemented to demonstrate the reduction of arsenic in groundwater.	Capital Cost: $2,548,000 O&M Cost: $487,000 **Net Present-Value Cost: $3,611,000(27)** Timeframe: 10 years
GW-4 Excavation, Biostimulation, MNA	Excavation of free product Addition of ORC to excavation backfill MNA	Free product in the source area adjacent to and underneath Building 1313 would be excavated and disposed of off-site. An ORC would be added to the excavation backfill in the source area to promote biostimulation treatment of residual and dissolved phase petroleum hydrocarbons. Groundwater monitoring under MNA would be implemented to demonstrate the reduction of arsenic concentrations in groundwater.	Capital Cost: $5,559,000 O&M Cost: $604,000 **Net Present-Value Cost: $7,359,000(28)** Timeframe: 10 years
GW-5 **Excavation, Biostimulation, In Situ Soil Mixing with Chemical Oxidants, MNA**	**Excavation of free product** **Addition of oxygen release compound to excavation backfill** **In situ soil mixing** **MNA**	**Free product in the source area adjacent to and underneath Building 1313 would be excavated and disposed of off site. An ORC would be added to the excavation backfill in the source area to promote biostimulation treatment of residual and dissolved phase petroleum hydrocarbons. In addition, in situ soil mixing with chemical oxidants would be used, if necessary, to further treat the petroleum hydrocarbons. The source area excavation and biostimulation will be done in a removal action. The remedy selected in this non-SWDA and non-radiological ROD/Final RAP will continue with in situ soil mixing, if necessary, and groundwater monitoring under MNA to demonstrate the reduction of arsenic concentrations in groundwater.**	**Capital Cost: $4,008,000** **O&M Cost: $687,000** **Net Present-Value Cost: 5,595,000(29)** **Timeframe: 10 years**

Table 6 Notes: The selected alternative is bolded and shaded.

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	NA	Not applicable
IC	Institutional control	O&M	Operation and maintenance
LUC	Land use control	ORC	Oxygen-release compound
MNA	Monitored natural attenuation	RAP	Remedial action plan
		ROD	Record of decision

2.9.2 Comparative Analysis of Alternatives

The Navy completed a comparative analysis of the soil and groundwater remedial alternatives using the NCP evaluation criteria. The criteria consist of:

Threshold Criteria

- Overall protection of human health and the environment – the ability of an alternative to address risk to protect human health and the environment
- Compliance with ARARs – the ability of an alternative to meet federal or state requirements determined to be applicable or relevant and appropriate to the remedial action (unless waived)

Balancing Criteria

- Long-term effectiveness and permanence – the magnitude of the residual risk remaining at a site after the RAOs have been achieved
- Reduction in toxicity, mobility, and volume through treatment – the ability of an alternative to meet the statutory preference for treatment to reduce contamination
- Short-term effectiveness – the effect of the alternative on the community, remediation workers, and the environment during construction and implementation
- Implementability – the technical and administrative feasibility of implementing an alternative
- Cost – the net present value cost of an alternative

Modifying Criteria

- State acceptance – the state's position on the remediation goals and alternatives and the preferred remedy
- Community acceptance – the community's support, concerns, or reservations about the alternatives and the preferred remedy

Tables 7 and 8 present a summary of the results from analyses using the first seven of the nine evaluation criteria for soil and groundwater. This comparative analysis was completed in the FS addendum. The state and community acceptance criteria were evaluated after the Proposed Plan was released to the public and the public comment period ended. The following subsections describe the results of this analysis.

TABLE 7. COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES FOR SOIL

Alternative Description	Alternative S-1 No Action	Alternative S-2 Engineered Cover and Excavation	Alternative S-3 Excavation and Off-Site Disposal
Overall Protectiveness			
ARARs Compliance	Not applicable		
Long-term Effectiveness			
Reduction of toxicity, mobility, or volume through treatment			
Short-term Effectiveness			
Implementability			
Cost	$0	$2,419,000	$4,936,000
Rank[a]	3	2	1

Key:

 Not effective

 Very effective

 Slightly effective

 Highly effective

 Moderately effective

a Rank is the relative order of alternatives based on overall effectiveness for all criteria.

ARAR Applicable or relevant and appropriate requirements

TABLE 8. COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES FOR GROUNDWATER

	Alternative GW-1	Alternative GW-2	Alternative GW-3	Alternative GW-4	Alternative GW-5
Alternative Description	**No Action**	**Permeable Reactive Barrier**	**In Situ Soil Mixing with Chemical Oxidants, Groundwater Monitoring**	**Excavation, Biostimulation, MNA**	**Excavation, Biostimulation, In Situ Soil Mixing with Chemical Oxidants, MNA**
Overall Protectiveness					
ARARs Compliance	Not applicable				
Long-term Effectiveness					
Reduction of toxicity, mobility, or volume through treatment					
Short-term Effectiveness					
Implementability					
Cost	$0	$8,425,000	$3,611,000	$7,359,000	$5,595,000
Rank[a]	5	4	3	2	1

Key:

 Not effective

 Very effective

 Slightly effective

 Highly effective

 Moderately effective

a Rank is the relative order of alternatives based on overall effectiveness for all criteria.

ARAR Applicable or relevant and appropriate requirements

MNA Monitored natural attenuation

2.9.2.1 Threshold Criteria

This section addresses the first two of the nine evaluation criteria: overall protection of human health and the environment, and compliance with ARARs.

Overall Protection of Human Health and the Environment

The no action alternatives for soil (S-1) and groundwater (GW-1) do not include any remedial actions at the site and, as a result, do not address risks posed by contamination at the site. Because the no action alternative does not address risks at Site 12, the no action alternatives do not provide overall protection to human health or the environment. The remaining alternatives for soil and groundwater include remedial actions to address risks at Site 12 and are capable of achieving the RAOs. Therefore, soil Alternatives S-2 and S-3 and groundwater Alternatives GW-2 through GW-5 are protective of human health and the environment.

Compliance with ARARs

ARARs are federal or more stringent state environmental standards, requirements, criteria, or limitations that need to be attained by final remedial actions. There are no ARARs associated with the no action alternatives. The remaining soil and groundwater alternatives will meet ARARs.

2.9.2.2 Primary Balancing Criteria

This section addresses five of the nine evaluation criteria: long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost.

Long-term Effectiveness and Permanence

Soil Alternative S-1 is not effective in the long term. Soil Alternative S-3 is more effective and permanent in the long term than Alternative S-2. Alternative S-3 includes the permanent removal and off-site disposal of contaminated soil. Alternative S-2 includes excavation of some of the contaminated soil, and then relies on engineered covers to prevent exposure to contaminated soil remaining on site.

Groundwater Alternative GW-1 is not effective in the long term. Groundwater Alternatives GW-2 through GW-5 all rank equally and highly effective in long-term effectiveness and permanence because they all include components that would result in the permanent removal and destruction of petroleum hydrocarbons. Alternatives GW-3 through GW-5 would treat source area petroleum; however, Alternative GW-2 would not address source area petroleum and would not result in decreased arsenic mobility upstream of the permeable reactive barrier (PRB).

Reduction in Toxicity, Mobility, or Volume through Treatment

None of the soil alternatives reduce the toxicity, mobility, or volume of contaminants through treatment.

All groundwater alternatives, except Alternative GW-1, will reduce the toxicity, mobility, and volume of contaminants through treatment.

Short-term Effectiveness

The short-term effectiveness of Alternative S-1 is very effective because no implementation actions are associated with the alternative. As a result, there are no effects on the community, remediation workers, or the environment. Alternatives S-2 and S-3 are very effective but have the potential for exposure resulting from airborne particulate matter if the construction activities are not properly controlled. The use of engineered covers under Alternative S-2 would avoid the potential for exposure to fugitive dust in areas where a cover was constructed. The use of dust suppression under Alternatives S-2 and S-3 would avoid the potential for exposure to fugitive dust in excavation areas.

The short term effectiveness of Alternative GW-1 is very effective because no implementation actions are associated with the alternative. As a result, there are no effects on the community, remediation workers, or the environment. Short-term risks associated with groundwater Alternatives GW-2 through GW-5 are similar and include risk from fugitive dust inhalation, risk from exposure to contaminated soil that is excavated, staged, and transported off site, and risk from exposure to chemical reagents that are combustible or that are oxidizers. Risk from exposure to fugitive dust and contaminated soil is most pronounced in Alternatives GW-4 and GW-5 and is less pronounced in Alternative GW-3, and minimal in Alternative GW-2 from construction of the PRB. Risk from exposure to chemical reagents is most pronounced in Alternatives GW-3 and GW-5 because of the use of in situ chemical oxidants, with some potential risk associated with the use of materials under Alternative GW-2 and the use of oxygen-releasing compounds (nontoxic) under Alternatives GW-3 and GW-5.

In addition to evaluating the NCP criteria, the Navy evaluated the **sustainability of each soil and groundwater alternative(30)** using the SiteWise evaluation tool developed jointly by the Navy, the U.S. Army Corps of Engineers, and Battelle. The sustainability evaluation reviews greenhouse gas emissions, energy use, water impacts, nitrogen oxide emissions, sulfur oxide emissions, particulate emissions, accident risk, nonhazardous and hazardous waste landfill space used, topsoil consumption, and lost hours caused by injury. The results of the sustainability analysis are presented with the short-term effectiveness evaluation.

Of the soil alternatives evaluated, Alternative S-3 ranked the least favorable in the evaluation factors. The greatest overall impacts for Alternative S-3 are related to residual waste handling and manufacturing of consumables required.

Of the groundwater alternatives evaluated, Alternative GW-3 ranked least favorably in greenhouse gas emissions and energy use, with the greatest overall impact related to manufacturing of the consumables required. Alternative GW-2 has the highest particulates, nitrogen, and sulfur oxides emissions (primarily from residual handling during construction of the PRB) and the highest accident risk (both injury and fatality).

Implementability

Alternative S-1 is highly effective in implementability because there is nothing to implement. Alternatives S-2 and S-3 are both implementable; however, to the extent that contaminated soil is present in areas difficult to excavate, Alternative S-2 may be more easily implemented. Alternative S-2 would need to be compatible with future site reuse.

Alternative GW-1 is highly effective in implementability because there is nothing to implement. Alternatives GW-2 through GW-5 are all technically feasible and are rated very effective. Alternatives GW-2, GW-3, and GW-5 would require the use of chemicals, which are readily available. Alternatives GW-4 and GW-5 would require the import of backfill and oxygen-releasing compound, which are readily available. Alternatives GW-4 and GW-5 may require dewatering, whereas Alternatives GW-2 and GW-3 would not. Alternatives GW-3 through GW-5 are slightly more difficult to implement from an administrative feasibility standpoint because these alternatives would require demolition of buildings to gain access to the petroleum hydrocarbon source area. No building demolition is required for Alternative GW-2.

Cost

No costs are associated with Alternative S-1 or GW-1. Costs estimated for Alternative S-3 are the highest of the soil alternatives—$4,936,000 for Alternative S-3 and $2,419,000 for Alternative S-2. Costs estimated for alternative GW-2 are the highest of the groundwater alternatives—$8,425,000 for Alternative GW-2; $7,359,000 for Alternative GW-4; $5,595,000 for Alternative GW-5; $3,611,000 for Alternative GW-3.

2.9.2.3 Modifying Criteria

This section addresses the two evaluation criteria that are not included in the FS addendum report. They are state acceptance and community acceptance.

State Acceptance

The State of California concurs with the Navy's selected soil and groundwater remedies for Site 12.

Community Acceptance

A Proposed Plan/Draft RAP describing the Navy's preferred alternative for addressing chemical contamination at Site 12 was released to the public on March 21, 2016, and was presented to the community at a public meeting held on March 30, 2016. The community made comments at the public meeting (see transcript of the public meeting in Attachment D). Although the community made comments on the condition of Site 12, the community did express support for the Navy's preferred remedial action.

In addition, a public comment period was open from March 21 to April 21, 2016. The Navy did not receive any comments during the public comment period.

None of the comments received from the community warranted a revision to the preferred alternatives for Site 12.

2.10 SELECTED REMEDIES

This section provides the Navy's key factors used to select the soil and groundwater remedies, a description of the remedy, the expected outcomes, and the required statutory determinations.

2.10.1 Rationale for Selected Remedies

Key factors in selecting the remedies are that the remedies will:

- Protect human health and the environment, and comply with ARARs (Attachment C identifies the ARARs for the selected remedies);
- Result in UU/UE of Site 12 and allow Site 12 to be used for purposes identified in the 2011 Final Environmental Impact Report and the 2011 Treasure Island Development Authority Disposition and Development Agreement;
- Be compatible with planned future reuse of Site 12;
- Efficiently and appropriately address the dispersed, discrete locations of soil contamination throughout Site 12;
- Transition efficiently from the soil removal actions that have been completed or are ongoing at Site 12 because the same technology (excavation) will be implemented;
- Transition efficiently from the removal action for groundwater, which began in 2016, because the removal action will complete certain components of the groundwater remedial action (excavation and biostimulation with ORC);

- Use information on conditions at the petroleum hydrocarbon source area obtained from the removal action to aid in the determination of the extent of further groundwater remedial components;

- Achieve soil RAOs in a short remediation timeframe; and

- Be readily implementable with conventional techniques and treatments.

2.10.2 Description of Selected Remedies

The descriptions of the Navy's selected remedies are presented below.

2.10.2.1 Soil Remedy

The Navy's selected chemical remedial alternative is **Alternative S-3: Excavation and Off-Site Disposal**. Figure 8 shows a conceptual view of this remedy.

The Navy will excavate discrete locations of contaminants (COCs, plus pesticides and total chromium) throughout Site 12. Site 12 was divided regionally into Site 12 North and Site 12 South. Site 12 North and Site 12 South were further subdivided into 19 EUs, six AOIs, and five groundwater exposure areas. Excavation of contaminants (COCs, total chromium, and select pesticides [4,4-DDD and alpha-BHC]) will occur in all EUs and AOIs, with the exception of EU 1, EU 3, EU 13, EU 15, AOI 1246, AOI 1248, and AOI 1254, where no remedial action is necessary because concentrations of contaminants are below remediation goals. Several areas within Site 12 South were excavated in the removal action that started in April 2016. The discrete locations in Site 12 North and remaining locations in Site 12 South that cannot be fully excavated in the removal action will be excavated and disposed of off site in the remedial action after the non-SWDA and non-radiological ROD/Final RAP. The Navy anticipates that demolition of certain buildings may be necessary where excavation of soil beneath the building footprint is required. The Navy will temporarily stage the soil where it will be screened for radiological contamination and characterized for off-site disposal. The soil staging pile will be controlled while waiting for the screening and characterization results. The Navy will backfill the excavations with clean fill, then return the excavations to their current grade. The Navy will complete a remedial design/remedial action work plan that identifies the locations that will be excavated in the remedial action.

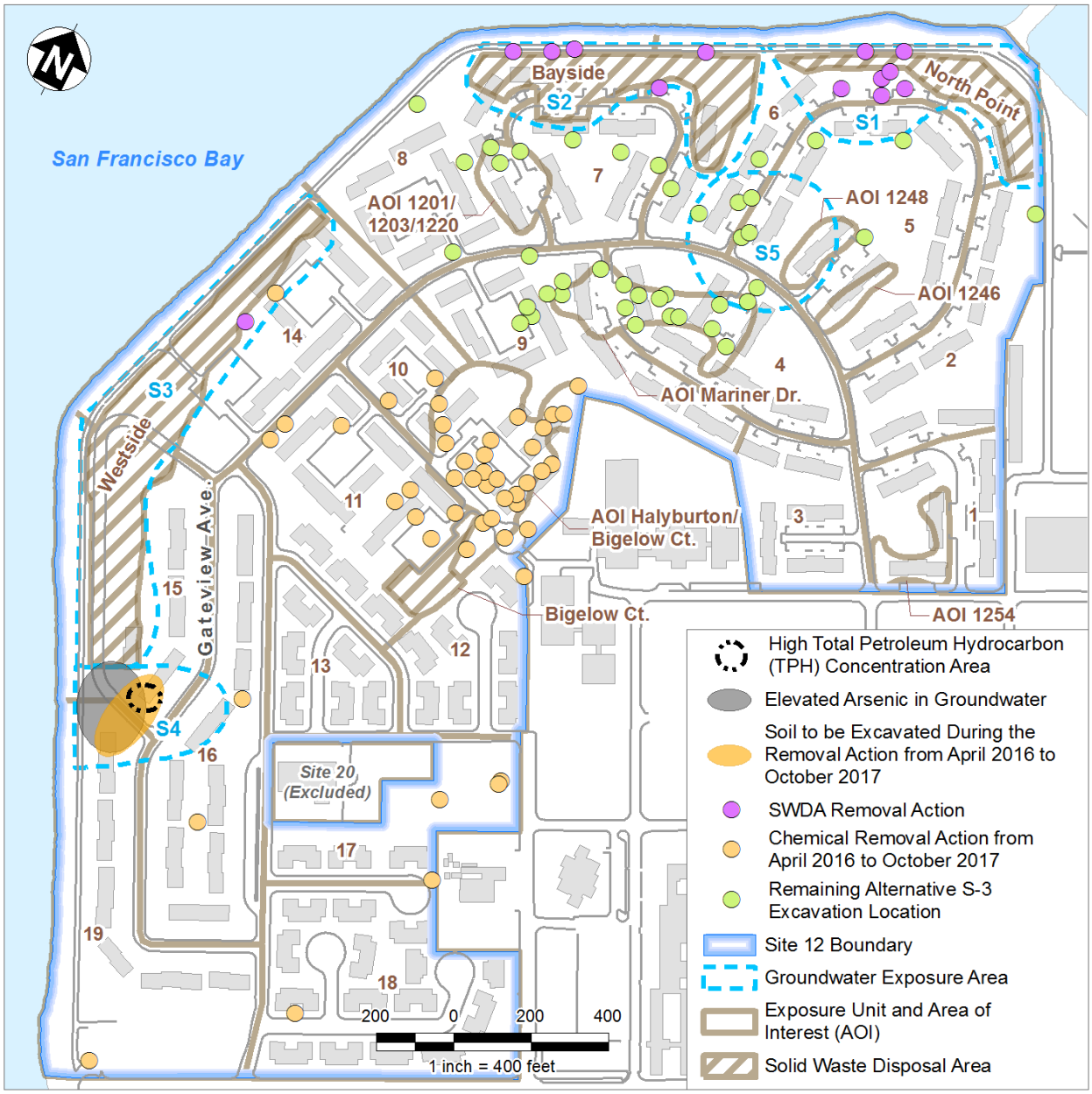

Figure 8. Soil and Groundwater Remedies for Site 12

2.10.2.2 Groundwater Remedy

The selected remedial groundwater alternative is **Alternative GW-5: Excavation, Biostimulation, In Situ Soil Mixing with Chemical Oxidants, and Monitored Natural Attenuation**. Figure 8 shows the Gateview Arsenic/TPH area and the targeted excavation area.

The Navy will excavate petroleum-contaminated soil in the Gateview Arsenic/TPH Area to a depth sufficient to remove the petroleum contamination and free product floating on the water table. The Navy will then place an ORC as a slurry at the bottom of the excavation. The ORC will target both free product and dissolved-phase petroleum hydrocarbons. If necessary, in-situ chemical oxidants will be mixed with soil to oxidize the petroleum hydrocarbons. After these components have been implemented, the Navy will monitor the groundwater to verify the reduction of arsenic concentrations. The Navy will complete the excavation and backfill with ORC in the removal action that started in April 2016. The Navy will evaluate implementation of the in situ chemical oxidation with the removal action and may implement it as part of the removal or remedial action. The Navy will monitor the groundwater as part of the remedial action to verify concentrations of arsenic are reducing. The Navy will continue to monitor the groundwater until the Navy demonstrates that the remediation goal for arsenic has been met or until the Navy and the state determine that groundwater monitoring is no longer necessary.

No groundwater remedy is necessary to meet the groundwater RAO for groundwater exposure areas GW-S1, GW-S2, GW-S3, GW-S5, and non-source groundwater area NS1 (Figure 8).

In addition, while not addressing an RAO, the Navy will include a restriction in appropriate real property transfer documents that will prohibit the installation of groundwater production wells for any purpose.

2.10.3 Expected Outcomes of the Selected Remedies

The selected remedies for soil and groundwater will achieve UU/UE and will allow Site 12 to be redeveloped for future residential use as planned. However, groundwater at Site 12, and across NAVSTA TI, will not be available for unlimited use because naturally occurring groundwater quality and conditions do not allow the groundwater to be used.

The selected remedy for soil will require approximately 1 year to implement and achieve the RAOs. The selected remedy for groundwater is estimated to achieve the RAO in 10 years.

2.10.4 Statutory Determinations

In accordance with the NCP, the following statutory determinations have been made.

- **Protection of Human Health and the Environment** – The selected chemical remedy will protect human health and the environment by permanently removing contaminants in soil from Site 12 and eliminating the petroleum hydrocarbon contamination that has resulted in the release of naturally occurring arsenic in groundwater.

- **Compliance with ARARs** – The selected remedies will meet all ARARs. The ARARs that will be met by the selected remedies are identified in Attachment C.

- **Cost-Effectiveness** – The selected remedies provide overall protectiveness proportional to their costs and are considered cost-effective.

- **Utilization of Permanent Solution and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable** – The selected remedies represent the maximum extent to which permanent solutions and alternative treatment technologies can be used in a cost-effective manner at Site 12.

- **Preference for Treatment as a Principal Element** – The selected remedy for groundwater satisfies the statutory preference for treatment as a principal element of the remedy. The selected remedy for soil does not satisfy the statutory preference for treatment as a principal element of the remedy.

- **Five-Year Review Requirements** – CERCLA § 121 requires 5-year reviews (statutory reviews) of sites where the remedial action does not achieve concentrations of hazardous substances acceptable for UU/UE. CERCLA 5-year reviews are also done as a matter of policy (policy reviews) when UU/UE will result upon completion of the remedy, but completing the remedy (achieving the RAOs and remediation goals) takes longer than 5 years. The remedy selected for soil will achieve UU/UE in less than 5 years. Therefore, the Navy will not complete CERCLA 5-year statutory or policy reviews for the soil remedy. The remedy selected for groundwater will also achieve UU/UE; however, achieving the RAO and remediation goal is expected to take longer than 5 years. As a result, statutory reviews of the groundwater remedy are not required; however, the Navy will complete CERCLA 5-year policy reviews of the groundwater remedy until the remediation goal is met.

2.10.5 Documentation of Significant Changes

The Proposed Plan/Draft RAP for Site 12 was released for public comment in March 2016. The Proposed Plan/Draft RAP identified the RAOs for the selected remedies. As set forth in the Proposed Plan/Draft RAP, the groundwater RAO was "Reduce risk to the marine ecology *and to future construction workers* through contact with groundwater containing arsenic by completing TPH source area removal." When the Proposed Plan/Draft RAP was released, the RAO addressed risk to future construction workers based on the risk evaluation summary in the FS. The estimated cancer risks used to evaluate alternatives were developed as part of the Site 12 RI. Construction worker risks were within the generally acceptable risk management range of 10^{-4} to 10^{-6}, at 5×10^{-6}, for groundwater (using the most stringent Cal/EPA toxicity criteria). The RI also notes "the assumptions for a construction worker exposure to groundwater in a trench are extremely

conservative. For example, the HHRA assumed construction workers will have dermal contact with groundwater 8 hours per day for 250 days per year; a situation that is highly unlikely. Therefore, actual risks and exposures by construction workers to groundwater are expected to be lower than those reported in the HHRA." The RI recommended evaluation of remedies in the FS only for ecological receptors. To correct this inconsistency between the FS and the RI, the RAO as prescribed for the selected remedy in the ROD/Final RAP does not address risk to the future construction worker because no remedial action is necessary to protect the future construction worker from exposure to groundwater. The RAO now reads "Reduce risk to the marine ecology through contact with groundwater containing arsenic by completing TPH source area removal."

This change in the RAO did not result in any other changes to the selected remediation goals or remedies for chemicals in soil and groundwater at Site 12.

2.11 COMMUNITY PARTICIPATION

A Community Relations Plan for NAVSTA TI was developed by the Navy and is periodically updated. The most recent update was August 2014. The purpose of the plan is to: (1) describe the community located on NAVSTA TI; (2) describe past community outreach activities that have been conducted in support of the IR Program; (3) identify the current level of community interest in environmental activities at NAVSTA TI; (4) outline community relations activities to facilitate communication between the Navy and the surrounding community; and (5) meet all public involvement regulatory requirements for the environmental cleanup program at NAVSTA TI.

The Navy maintains an active community participation program through the NAVSTA TI Restoration Advisory Board (RAB). The RAB is made up of federal, state, and local government representatives and citizens. Through regular meetings, the Navy informs the RAB of the progress of investigation and solicits input on planned environmental investigations and actions. In addition, the Navy issues fact sheets, newsletters, and work notices to keep the public informed of IR Program activities at NAVSTA TI and follows CERCLA community relations requirements.

Documents and relevant information relied on for this non-SWDA and non-radiological ROD/Final RAP were made available for public review in the public information repositories listed below or on the IR Program website (http://www.bracpmo.navy.mil/).

San Francisco Main Public Library
Government Publications Section
100 Larkin Street
San Francisco, California 94102
Phone: (415) 557-4400

Navy BRAC Caretaker Support Office
1 Avenue of the Palms, Suite 161
Treasure Island
San Francisco, California 94130
Phone: (415) 743-4729

DTSC's EnviroStor:
http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60001092

For access to the Administrative Record contact:

Ms. Diane Silva
Command Records Manager
NAVFAC Southwest
2965 Mole Road
NBSD Building 3519
San Diego, California 92136
Phone: (619) 556-1280

For additional information on the IR Program contact:

Mr. Keith Forman
BRAC Environmental Coordinator
Navy BRAC PMO West
33000 Nixie Way, Building 50
San Diego, California 92147
Local Phone: (415) 308-1458
Phone: (619) 524-6073

In accordance with CERCLA §§ 113 and 117, the Navy provided a public comment period from March 21 through April 21, 2016, to solicit comments on the Navy's preferred remedy as described in the Proposed Plan/Draft RAP for Site 12. A public meeting to present the Proposed Plan/Draft RAP was held from 6:00 to 8:00 p.m. on March 30, 2016. Public notice of the meeting and availability of documents appeared in the *San Francisco Examiner* on March 21, 2016. Attachment D includes the transcript of the public meeting, which includes a list of attendees.

2.12 NON-BINDING ALLOCATION OF RESPONSIBILITY

California Health and Safety Code § 25356.1(e) requires that state RAPs contain a preliminary non-binding allocation of responsibility (NBAR) among all identifiable potentially responsible parties (PRP). The sole purpose of the NBAR is to establish which PRPs will have an aggregate allocation in excess of 50 percent and can therefore convene arbitration if they so choose. The NBAR, which is based on the evidence available to the DTSC, is not binding on anyone, including PRPs, the DTSC, or the arbitration panel. If a panel is convened, its proceedings are *de novo* and do not constitute a review of the provisional allocation. The arbitration panel's allocation will be based on the panel's application of the criteria contained in California Health and Safety Code § 25356.3(c) to the evidence produced at the arbitration hearing. Once arbitration is convened, or waived, the NBAR has no further effect, in arbitration, litigation, or any other proceeding, except that both the NBAR and the arbitration panel's allocation are admissible in a court of law, pursuant to California Health and Safety Code § 25356.7 for the sole purpose of showing the good faith of the parties who have discharged the arbitration panel's decision.

The DTSC sets forth the following preliminary nonbinding allocation of responsibility for the former NAVSTA TI: The Navy is allocated 100 percent responsibility.

3.0 RESPONSIVENESS SUMMARY

The purpose of the responsiveness summary is to summarize information about the views of the public on both the remedial alternatives and the general concerns about the site submitted during the public comment period. The responsiveness summary documents in the public record how public comments were integrated into the decision-making process.

The participants in the public meeting held on March 30, 2016, included community members, RAB members, and representatives of the Navy and the DTSC. Questions and comments received during the meeting are documented in the meeting transcript (Attachment D). The Navy's responses to the questions and comments received at the public meeting are documented in the responsiveness summary (Attachment E). The majority of community questions and comments did not directly address Alternative S-3 or Alternative GW-5, or any of the Site 12 alternatives. Of the comments received from the community that were specifically directed to the Navy's remedial action for soil and groundwater, the comments expressed support for the Navy's cleanup of Site 12, and none warranted a revision to the preferred alternatives for Site 12. No written, e-mail, or faxed public comments were received during the public comment period from March 21 through April 21, 2016.

As required by the California Environmental Quality Act (CEQA), DTSC has prepared and approved a Negative Declaration to address potential environmental impacts of the cleanup project as a removal action for a portion of the contamination at Site 12. The Negative Declaration was completed on February 4, 2016. Since the same actions will be conducted in this cleanup for Site 12, DTSC intends to rely on this Negative Declaration to comply with CEQA. The Negative Declaration is available at the three information repositories listed in Section 2.11 and at the DTSC File Room (located at 700 Heinz Avenue, Berkeley, California 94710).

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ATTACHMENT A
ADMINISTRATIVE RECORD INDEX

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TREASURE ISLAND

DRAFT ENVIRONMENTAL RESTORATION RECORD PUBLIC / IR INDEX - UPDATE (SORTED BY RECORD DATE/RECORD NUMBER)

ADMINISTRATIVE RECORD INDEX FOR SITE 12

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
AR_N60028_000156 REPORT 486	**04-01-1988**	DAMES AND MOORE	FINAL PRELIMINARY ASSESSMENT/SITE INSPECTION, VOLUMES I AND II OF II	YES	BLDG 0000002 BLDG 0000003 BLDG 0000041 BLDG 0000042 BLDG 0000062 BLDG 0000089 BLDG 0000102 BLDG 0000190 BLDG 0000194 BLDG 0000224 BLDG 0000225 BLDG 0000257 BLDG 0000293 BLDG 0000330 BLDG 0000335 BLDG 0000342 BLDG 0000371 SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00015

TREASURE ISLAND

DRAFT ENVIRONMENTAL RESTORATION RECORD PUBLIC / IR INDEX - UPDATE (SORTED BY RECORD DATE/RECORD NUMBER)

ADMINISTRATIVE RECORD INDEX FOR SITE 12

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
					SITE 00016
					SITE 00017
					SITE 00019
					SITE 00020
					SITE 00021
					SITE 00022
					SITE 00024
					SITE 00025
					SITE 00026

TREASURE ISLAND

DRAFT ENVIRONMENTAL RESTORATION RECORD PUBLIC / IR INDEX - UPDATE (SORTED BY RECORD DATE/RECORD NUMBER)

ADMINISTRATIVE RECORD INDEX FOR SITE 12

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
AR_N60028_000022 CORRESPONDENCE 4	**03-12-1991**	DEPARTMENT OF HEALTH SERVICES - VERIFY AFFILIATION	TRANSMITTAL OF THE DRAFT SITE SUMMARY FOR SITE VISITS AND RECORD FILE SEARCH (W/ ENCLOSURE)	YES	SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00026

TREASURE ISLAND

DRAFT ENVIRONMENTAL RESTORATION RECORD PUBLIC / IR INDEX - UPDATE (SORTED BY RECORD DATE/RECORD NUMBER)

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UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
AR_N60028_000027 CORRESPONDENCE 2	**06-21-1991**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 1) DRAFT FINAL QUALITY ASSURANCE PROJECT PLAN; AND 2) DRAFT HEALTH AND SAFETY PLAN FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY (ENCLOSURE 1) IS RECORD # 2, AND 2) IS RECORD # 3)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000270 REPORT 62	**08-14-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL FIELD WORK PLAN, SITE INSPECTION AND PRELIMINARY RISK ASSESSMENT	YES	SITE 00012

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AR_N60028_000036 CORRESPONDENCE 4	**08-21-1991**	DTSC - BERKELEY, CA	TRANSMITTAL OF THE REVIEW AND COMMENTS ON THE DRAFT FIELD WORK PLAN, FEASIBILITY STUDY OF FLOATING PRODUCT REMOVAL (W/ ENCLOSURE) [SEE RECORD # 1 - DRAFT FIELD WORK PLAN FEASIBILITY STUDY OF FLOATING PRODUCT REMOVAL]	YES	SITE 00006 SITE 00012 SITE 00014
AR_N60028_000037 CORRESPONDENCE 27	**09-04-1991**	DTSC - BERKELEY, CA	TRANSMITTAL OF REVIEW AND COMMENTS ON DRAFT FINAL WORK PLAN AND DRAFT FINAL FIELD SAMPLING PLAN (W/ ENCLOSURE) [SEE RECORD # 4 - DRAFT FINAL WORK PLAN, AND # 5 - DRAFT FINAL FIELD SAMPLING PLAN]	YES	SITE 00003 SITE 00005 SITE 00006 SITE 00007 SITE 00011 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00020

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AR_N60028_000008 REPORT 64	**09-08-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL QUALITY ASSURANCE PROJECT PLAN	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000009 REPORT 411	**09-09-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL HEALTH AND SAFETY PLAN	YES	AST 0000003 AST 0000103 AST 0000104 BLDG 0000002 BLDG 0000003 BLDG 0000040 BLDG 0000041 BLDG 0000089 BLDG 0000092 BLDG 0000102 BLDG 0000180 BLDG 0000193 BLDG 0000225 BLDG 0000257 BLDG 0000264 BLDG 0000292 BLDG 0000293 BLDG 0000330 BLDG 0000335 BLDG 0000342 BLDG 0000343 BLDG 0000370 BLDG 0000455 BLDG 0000461 SITE 00001 SITE 00003 SITE 00004 SITE 00005

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
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AR_N60028_002064 CORRESPONDENCE 6	**09-18-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	RESPONSES TO COMMENTS ON THE DRAFT FIELD WORK PLAN, FEASIBILITY STUDY OF FLOATING PRODUCT REMOVAL (SEE RECORD # 36 - COMMENTS BY DTSC)	YES	SITE 00006 SITE 00012 SITE 00014

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AR_N60028_000040 CORRESPONDENCE 2	**09-20-1991**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 1) FINAL QUALITY ASSURANCE PROJECT PLAN; AND 2) FINAL HEALTH AND SAFETY PLAN (ENCLOSURES ARE 1) RECORD # 8; AND 2) RECORD # 9)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000010 REPORT 201	**10-22-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL WORK PLAN, REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN (SEE RECORD # 14 - FINAL WORK PLAN, REMEDIAL INVESTIGATION/FEASIBILITY STUDY, REVISION 1)	YES	BLDG 0000002 BLDG 0000003 BLDG 0000041 BLDG 0000062 BLDG 0000089 BLDG 0000194 BLDG 0000224 BLDG 0000225 BLDG 0000257 BLDG 0000258 BLDG 0000262 BLDG 0000264 BLDG 0000267 BLDG 0000292 BLDG 0000330 BLDG 0000335 BLDG 0000342 BLDG 0000343 BLDG 0000370 BLDG 0000461 SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009

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					WELL 00011-MW-02
					WELL 00012-MW-01
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AR_N60028_000011 REPORT 191	**10-22-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY FIELD SAMPLING PLAN (SEE RECORD # 49 - NAVFAC WDIV TRANSMITTAL LETTER; AND RECORD # 15 - FINAL FIELD SAMPLING PLAN, REVISION 1)	YES	AST 0000004 AST 0000005 AST 0000103 AST 0000465 BLDG 0000002 BLDG 0000003 BLDG 0000041 BLDG 0000062 BLDG 0000084 BLDG 0000089 BLDG 0000099 BLDG 0000109 BLDG 0000111 BLDG 0000112 BLDG 0000113 BLDG 0000114 BLDG 0000136 BLDG 0000157 BLDG 0000180 BLDG 0000184 BLDG 0000205 BLDG 0000224 BLDG 0000225 BLDG 0000233 BLDG 0000236 BLDG 0000257 BLDG 0000258 BLDG 0000262

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					WELL MW-008-001
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					WELL MW-008-003
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					WELL MW-020-001
					WELL MW-020-002
					WELL MW-020-003
					WELL MW-022-001
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					WELL MW-024-001
					WELL MW-024-002
					WELL MW-024-003
					WELL MW-024-004
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					WELL MW-025-003
AR_N60028_000048 CORRESPONDENCE 11	**10-23-1991**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF 1) 24 SEPTEMBER 1991 TECHNICAL REVIEW COMMITTEE (TRC) MEETING MINUTES; AND 03 OCTOBER 1991 FEDERAL FACILITY SITE REMEDIATION AGREEMENT MEETING MINUTES (W/ ENCLOSURES)	YES	SITE 00006 SITE 00012 SITE 00014 SITE 00020
AR_N60028_000204 CORRESPONDENCE 8	**10-25-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	RESPONSES TO COMMENTS ON THE DRAFT FINAL FIELD SAMPLING PLAN (SEE RECORD # 5 - DRAFT FINAL FIELD SAMPLING PLAN FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY)	YES	BLDG 0000225 PIER 00001 SITE 00006 SITE 00007 SITE 00011 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00020 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000205 CORRESPONDENCE 3	**10-25-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	RESPONSES TO COMMENTS ON THE WORK PLAN AND FIELD SAMPLING PLAN FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY (SEE RECORD # 37 - COMMENTS BY DTSC)	YES	SITE 00002 SITE 00012 SITE 00015 SITE 00017 SITE 00020 SITE 00025

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AR_N60028_002101 CORRESPONDENCE 6	**10-25-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	RESPONSES TO COMMENTS ON THE DRAFT FINAL WORK PLAN FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY (SEE RECORD # 4 - DRAFT FINAL WORK PLAN FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY)	NO	SITE 00006 SITE 00012 SITE 00014 SITE 00020
AR_N60028_000049 CORRESPONDENCE 2	**11-04-1991**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 1) FINAL WORK PLAN REMEDIAL INVESTIGATION/FEASIBILITY STUDY; AND 2) FINAL FIELD SAMPLING PLAN REMEDIAL INVESTIGATION/FEASIBILITY STUDY (ENCLOSURES ARE 1) RECORD # 10 AND 2) RECORD # 11)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000058 CORRESPONDENCE 2	**11-26-1991**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE DRAFT FINAL COMMUNITY RELATIONS PLAN (ENCLOSURE IS RECORD # 13)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000060 CORRESPONDENCE 2	**12-06-1991**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE 1) FINAL WORK PLAN, AND 2) SAMPLING PLAN FOR THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY (SEE RECORD # 10 - FINAL WORK PLAN; AND # 11 - FINAL FIELD SAMPLING PLAN)	YES	SITE 00006 SITE 00012 SITE 00014 SITE 00020

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AR_N60028_000014 REPORT 191	**12-26-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL WORK PLAN, REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN, REVISION 1	YES	BLDG 0000002 BLDG 0000003 BLDG 0000041 BLDG 0000062 BLDG 0000089 BLDG 0000102 BLDG 0000180 BLDG 0000194 BLDG 0000224 BLDG 0000225 BLDG 0000257 BLDG 0000258 BLDG 0000262 BLDG 0000264 BLDG 0000267 BLDG 0000292 BLDG 0000330 BLDG 0000335 BLDG 0000342 BLDG 0000343 BLDG 0000370 BLDG 0000461 SITE 00001 SITE 00003 SITE 00005 SITE 00006 SITE 00007 SITE 00008

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AR_N60028_000015 REPORT 266	**12-26-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY FIELD SAMPLING PLAN, REVISION 1	YES	AST 0000004 AST 0000005 AST 0000103 AST 0000104 AST 0000465 BLDG 0000002 BLDG 0000003 BLDG 0000041 BLDG 0000062 BLDG 0000084 BLDG 0000085 BLDG 0000089 BLDG 0000099 BLDG 0000109 BLDG 0000111 BLDG 0000112 BLDG 0000113 BLDG 0000114 BLDG 0000136 BLDG 0000157 BLDG 0000180 BLDG 0000184 BLDG 0000205 BLDG 0000224 BLDG 0000225 BLDG 0000233 BLDG 0000236 BLDG 0000257

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AR_N60028_002069 CORRESPONDENCE 6	**12-26-1991**	PRC ENVIRONMENTAL MANAGEMENT, INC.	RESPONSES TO COMMENTS ON THE FINAL WORK PLAN, REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000067 CORRESPONDENCE 2	**01-24-1992**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE DRAFT PRELIMINARY RISK ASSESSMENT (ENCLOSURE IS RECORD # 271)	YES	SITE 00012

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AR_N60028_000017 REPORT 101	**02-14-1992**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL COMMUNITY RELATIONS PLAN, REMEDIAL INVESTIGATION/FEASIBILITY STUDY (SEE RECORD # 76 - NAVFAC WDIV TRANSMITTAL LETTER; AND RECORD # 84 - REVISED FINAL COMMUNITY RELATIONS PLAN) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	AST 0000103 AST 0000104 BLDG 0000002 BLDG 0000003 BLDG 0000041 BLDG 0000062 BLDG 0000089 BLDG 0000102 BLDG 0000180 BLDG 0000194 BLDG 0000224 BLDG 0000225 BLDG 0000257 BLDG 0000267 BLDG 0000330 BLDG 0000335 BLDG 0000342 BLDG 0000370 SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011

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AR_N60028_000076 CORRESPONDENCE 2	**02-20-1992**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE FINAL COMMUNITY RELATIONS PLAN FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY (ENCLOSURE IS RECORD # 17)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000091 CORRESPONDENCE 13	**06-04-1992**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT PRELIMINARY RISK ASSESSMENT (SEE RECORD # 271 - DRAFT PRELIMINARY RISK ASSESSMENT)	YES	SITE 00012

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AR_N60028_000116 CORRESPONDENCE 2	**09-11-1992**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE DRAFT ECOLOGICAL ASSESSMENT WORK PLAN (ENCLOSURE IS RECORD # 20)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000021 REPORT 151	**09-15-1992**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL PRELIMINARY RISK ASSESSMENT	YES	SITE 00012

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AR_N60028_000123 CORRESPONDENCE 2	**09-16-1992**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE FINAL PRELIMINARY RISK ASSESSMENT REPORT (ENCLOSURE IS RECORD # 21)	YES	SITE 00012
AR_N60028_000160 CORRESPONDENCE 3	**10-27-1992**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE SEPTEMBER 1992 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00012 SITE 00020 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000161 CORRESPONDENCE 5	**10-28-1992**	NAVFAC - WESTERN DIVISION	RESPONSES TO COMMENTS ON THE DRAFT PRELIMINARY RISK ASSESSMENT REPORT (SEE RECORD # 91 - COMMENTS BY DTSC)	YES	SITE 00012
AR_N60028_000219 CORRESPONDENCE 2	**11-12-1992**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE PRELIMINARY SUMMARY TABLES OF ANALYTICAL RESULTS	YES	SITE 00003 SITE 00004 SITE 00005 SITE 00007 SITE 00008 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00019 SITE 00020

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AR_N60028_000223 REPORT 107	**11-20-1992**	PRC ENVIRONMENTAL MANAGEMENT, INC.	INVESTIGATION DERIVED WASTE MANAGEMENT PLAN REMEDIAL INVESTIGATION/FEASIBILITY STUDY (SEE RECORD # 224 - NAVFAC WDIV TRANSMITTAL LETTER)	YES	BLDG 0000003 BLDG 0000041 BLDG 0000062 BLDG 0000102 BLDG 0000194 BLDG 0000224 BLDG 0000225 BLDG 0000257 BLDG 0000262 BLDG 0000264 BLDG 0000267 BLDG 0000292 BLDG 0000330 BLDG 0000342 BLDG 0000343 BLDG 0000461 SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013

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					SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000225 CORRESPONDENCE 4	**11-24-1992**	NAVFAC - WESTERN DIVISION	IMPLEMENTATION OF VARIANCE TO FIELD SAMPLING PLAN SEDIMENT SAMPLING	YES	BLDG 0000325 SITE 00002 SITE 00005 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00015 SITE 00021

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AR_N60028_000232 CORRESPONDENCE 3	**12-17-1992**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE PRELIMINARY SUMMARY TABLES OF ANALYTICAL RESULTS, REMEDIAL INVESTIGATION/FEASIBILITY STUDY	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000233 CORRESPONDENCE 21	**12-22-1992**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 01 DECEMBER 1992 TECHNICAL REVIEW COMMITTEE (TRC) MEETING MINUTES (W/ ENCLOSURE)	YES	AST 0000103 AST 0000104 BLDG 0000002 BLDG 0000003 BLDG 0000031 BLDG 0000041 BLDG 0000062 BLDG 0000102 BLDG 0000180 BLDG 0000194 BLDG 0000224 BLDG 0000225 BLDG 0000230 BLDG 0000267 BLDG 0000335 SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00013A

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					SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000234 CORRESPONDENCE 21	**01-05-1993**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 1) 17 DECEMBER 1992 SPECIAL TECHNICAL MEETING MINUTES; 2) PROPOSED DRAFT SITE CHARACTERIZATION SUMMARY REPORT OUTLINE; AND NOVEMBER 1992 MONTHLY STATUS REPORT (W/ ENCLOSURES)	YES	AST 0000103 AST 0000104 SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000178 CORRESPONDENCE 24	**07-22-1993**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 21 JUNE 1993 TECHNICAL REVIEW COMMITTEE (TRC) MEETING MINUTES (W/ ENCLOSURE) [INCLUDES LIST OF COMMUNITY QUESTIONS AND CONCERNS DATED 10 JUNE 1993] {DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS}	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000184 CORRESPONDENCE 6	**09-11-1993**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 17 AUGUST 1993 ECOLOGICAL ASSESSMENT SCOPING MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000185 CORRESPONDENCE 15	**09-30-1993**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE FINAL PRELIMINARY RISK ASSESSMENT (INCLUDES MEMORANDUM ON CALIFORNIA CANCER POTENCY FACTORS FROM THE ENVIRONMENTAL PROTECTION AGENCY DATED 18 JUNE 1992) [SEE RECORD # 21 - FINAL PRELIMINARY RISK ASSESSMENT]	YES	SITE 00012

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AR_N60028_000302 CORRESPONDENCE 7	**10-12-1993**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 21 SEPTEMBER 1993 TECHNICAL REVIEW COMMITTEE (TRC) MEETING MINUTES (W/ ENCLOSURES)	YES	SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000188 CORRESPONDENCE 2	**10-20-1993**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE 21 SEPTEMBER 1993 TECHNICAL REVIEW COMMITTEE (TRC) MEETING MINUTES (SEE RECORD # 302 - 21 SEPTEMBER 1993 TECHNICAL REVIEW AND COMMITTEE (TRC) MEETING MINUTES)	YES	SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000163 CORRESPONDENCE 2	**11-15-1993**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF DRAFT ECOLOGICAL RISK ASSESSMENT REPORT (ENCLOSURE IS RECORD # 162)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000196 CORRESPONDENCE 54	**01-18-1994**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 1) 14 DECEMBER 1993 MONTHLY PROGRESS MEETING MINUTES; AND 2) 14 DECEMBER 1993 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURES)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000198 CORRESPONDENCE 81	**02-04-1994**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, PHASE I AND DRAFT ECOLOGICAL RISK ASSESSMENT (INCLUDES CRWQCB COMMENTS) [SEE RECORD # 279 - DRAFT PHASE I REMEDIAL INVESTIGATION REPORT	YES	BLDG 0000062 SITE 00002 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00022 SITE 00024 UST 0000002C UST 0000240A UST 0000240B UST 0000330C WELL 00001 WELL 00011

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AR_N60028_000212 CORRESPONDENCE 18	**03-15-1994**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT PHASE I (INCLUDES COMMENTS ON THE DRAFT HUMAN HEALTH RISK ASSESSMENT; AND DRAFT ECOLOGICAL ASSESSMENT REPORT)	YES	BLDG 0000062 BLDG 0000089 BLDG 0000194 BLDG 0000224 BLDG 0000267 BLDG 0000335 BLDG 0000342 BLDG 0000343 BLDG 0000370 SITE 00003 SITE 00004 SITE 00005 SITE 00007 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024

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AR_N60028_000301 CORRESPONDENCE 3	**07-06-1994**	NAVFAC - WESTERN DIVISION	IDENTIFICATION OF STATE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS FOR THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029

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AR_N60028_000305 CORRESPONDENCE 8	**08-02-1994**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE ECOLOGICAL RISK ASSESSMENT SITE WALK SUMMARY (W/ ENCLOSURE)	YES	BLDG 0000001 BLDG 0000262 SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00028

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AR_N60028_000317 REPORT 78	**08-26-1994**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL PHASE IIA REMEDIAL INVESTIGATION FIELD WORK PLAN ADDENDUM	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029

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AR_N60028_000321 CORRESPONDENCE 12	**09-07-1994**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE 1) SUMMARY OF KEY QUESTIONS, ANSWERS, AND COMMENTS DISCUSSED DURING THE SITE TOUR; 2) COPY OF THE SLIDE PRESENTATION SCRIPT; AND 3) RESTORATION ADVISORY BOARD (RAB) SITE TOUR ATTENDANCE LIST (W/ ENCLOSURES)	YES	BLDG 0000099 SITE 00001 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00022 SITE 00024
AR_N60028_000324 CORRESPONDENCE 12	**09-21-1994**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT WORK PLAN ADDENDUM, PHASE IIB REMEDIAL INVESTIGATION (INCLUDES COMMENTS BY M. BESSETTE W/ CRWQCB) [SEE RECORD # 300 - DRAFT WORK PLAN ADDENDUM, PHASE II REMEDIAL INVESTIGATION]	YES	BLDG 0000034 BLDG 0000091 BLDG 0000244 BLDG 0000335 BLDG 0000342 PIER 00001 SITE 00006 SITE 00007 SITE 00008 SITE 00010 SITE 00011 SITE 00012 SITE 00015 SITE 00028 SITE 00029 UST 0000204A UST 0000204B

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AR_N60028_000326 CORRESPONDENCE 4	**09-22-1994**	U.S. EPA - SAN FRANCISCO, CA	TRANSMITTAL OF THE REVIEW AND COMMENTS ON THE DRAFT RESPONSES TO COMMENTS ON THE DRAFT PHASE I REMEDIAL INVESTIGATION REPORT (W/ ENCLOSURE) [SEE RECORD # 299 - DRAFT RESPONSES TO COMMENTS]	YES	SITE 00012
AR_N60028_000332 CORRESPONDENCE 2	**09-26-1994**	NAVFAC - WESTERN DIVISION	TRANSMITTAL OF THE DRAFT TECHNICAL MEMORANDUM, DRAFT PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM (ENCLOSURE IS RECORD # 333)	YES	SITE 00012
AR_N60028_000335 CORRESPONDENCE 2	**10-06-1994**	U.S. EPA - SAN FRANCISCO, CA	TRANSMITTAL OF THE REVIEW AND COMMENTS ON THE DRAFT TECHNICAL MEMORANDUM, DRAFT PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, OLD BUNKER AREA (W/ ENCLOSURE)	YES	BLDG 0000461 SITE 00012
AR_N60028_000342 CORRESPONDENCE 3	**11-08-1994**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT TECHNICAL MEMORANDUM: PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, OLD BUNKER AREA (INCLUDES COMMENTS BY CRWQCB)	YES	BLDG 0000345 SITE 00012

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AR_N60028_000359 CORRESPONDENCE 64	**01-03-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 06 DECEMBER 1994 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	AREA AA AREA BB AREA CC AREA DD BLDG 0000001 BLDG 0000002 BLDG 0000003 SITE 00001 SITE 00003 SITE 00004 SITE 00006 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00019 SITE 00020 SITE 00022 SITE 00024 SITE 00025 SITE 00028 SITE 00029 UST 0000002C UST 0000180B UST 0000180D UST 0000240A UST 0000240B

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AR_N60028_000376 REPORT 117	**02-01-1995**	PRC ENVIRONMENTAL MANAGEMENT, INC.	NOVEMBER 1994 QUARTERLY GROUNDWATER SAMPLING REPORT (SEE RECORD # 375 - NAVFAC EFA WEST TRANSMITTAL LETTER)	YES	SITE 00001 SITE 00004 SITE 00011 SITE 00012 SITE 00014 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00022 SITE 00024 SITE 00025 WELL 00001-MW-01 WELL 00004-MW-01 WELL 00004-MW-02 WELL 00004-MW-03 WELL 00006-MW-01 WELL 00006-MW-02 WELL 00006-MW-03 WELL 00006-MW-04 WELL 00006-MW-06

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					WELL 00006-MW-12
					WELL 00006-MW-13
					WELL 00011-MW-02
					WELL 00011-MW-03
					WELL 00011-MW-04
					WELL 00012-MW-01
					WELL 00012-MW-02
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					WELL 00012-MW-04
					WELL 00014-CW-01
					WELL 00014-CW-02
					WELL 00014-MW-01

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AR_N60028_000374 CORRESPONDENCE 14	**02-02-1995**	ARC ECOLOGY	REVIEW AND COMMENTS ON THE DRAFT FINAL PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM (SEE RECORD # 361 - DRAFT FINAL PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM)	YES	BLDG 0000003 BLDG 0000041 BLDG 0000062 BLDG 0000085 BLDG 0000089 BLDG 0000112 BLDG 0000335 BLDG 0000342 BLDG 0000343 BLDG 0000345 BLDG 0000361 BLDG 0000384 BLDG 0000455 BLDG 0000458 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00019 SITE 00020

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					SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000369 CORRESPONDENCE 4	**02-03-1995**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT FINAL, PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM (SEE RECORD # 361 - DRAFT FINAL PHASE 11B REMEDIAL INVESTIGATION WORK PLAN ADDENDUM)	YES	SITE 00012
AR_N60028_000370 CORRESPONDENCE 3	**02-03-1995**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT FINAL PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM (INCLUDES COMMENTS BY CRWQCB) [SEE RECORD # 361-DRAFT FINAL PHASE 11B REMEDIAL INVESTIGATION WORK PLAN ADDENDUM]	YES	SITE 00005 SITE 00006 SITE 00011 SITE 00012

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AR_N60028_000387 REPORT 55	**03-07-1995**	PRC ENVIRONMENTAL MANAGEMENT, INC.	SUMMARY OF RESULTS, PHASE IIA REMEDIAL INVESTIGATION, AQUIFER TESTING (SEE RECORD # 386 - NAVFAC EFA WEST TRANSMITTAL LETTER; AND RECORD # 475 - REVISED SUMMARY OF RESULTS)	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00019 SITE 00020 SITE 00022 SITE 00024 SITE 00025 WELL 00001-MW-01 WELL 00004-MW-01 WELL 00006-MW-02 WELL 00006-MW-03 WELL 00011-MW-03 WELL 00011-MW-04 WELL 00012-MW-01 WELL 00012-MW-03 WELL 00017-MW-01

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AR_N60028_000393 REPORT 459	**04-04-1995**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS)	YES	AST 0000004 AST 0000103 AST 0000104 BLDG 0000002 BLDG 0000003 BLDG 0000034 BLDG 0000041 BLDG 0000062 BLDG 0000081 BLDG 0000082 BLDG 0000083 BLDG 0000084 BLDG 0000085 BLDG 0000086 BLDG 0000089 BLDG 0000099 BLDG 0000111 BLDG 0000113 BLDG 0000194 BLDG 0000224 BLDG 0000225 BLDG 0000262 BLDG 0000267 BLDG 0000289 BLDG 0000290 BLDG 0000325 BLDG 0000335 BLDG 0000342

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					BLDG 0000343
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					IA AA
					IA BB
					IA CC
					IA DD
					PIER 00011
					PIER 00021
					SITE 00001
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					UST 0000180B
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					WELL 00004/19-MW-03
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					WELL 00011-MW-03
					WELL 00011-MW-04

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					WELL 00012-MW-03 WELL 00020-MW-03 WELL 00024-MW-04 WELL 00025-MW-02 WELL 00025-MW-03
AR_N60028_000394 CORRESPONDENCE 29	**04-12-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 28 MARCH 1995 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 8 (W/ ENCLOSURE) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	SITE 00006 SITE 00012 SITE 00014 SITE 00022

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
AR_N60028_000403 REPORT 129	**05-01-1995**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FEBRUARY 1995 QUARTERLY GROUNDWATER SAMPLING REPORT (SEE RECORD # 402 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00020 SITE 00022 SITE 00024 SITE 00025 WELL 00001-MW-01 WELL 00004/19-MW-01 WELL 00004/19-MW-02 WELL 00004/19-MW-03 WELL 00006-MW-01 WELL 00006-MW-02 WELL 00006-MW-03 WELL 00006-MW-04 WELL 00006-MW-06 WELL 00006-MW-07

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					WELL 00012-MW-02
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					WELL 00012-MW-04
					WELL 00014-CW-01
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AR_N60028_000402 CORRESPONDENCE 3	**05-11-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FEBRUARY 1995 QUARTERLY GROUNDWATER SAMPLING REPORT (ENCLOSURE IS RECORD # 403)	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00020 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000409 CORRESPONDENCE 3	**06-07-1995**	NAVFAC - EFA WEST	PROPOSED DEVIATIONS FROM FINAL PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM (SEE RECORD # 393 - FINAL PHASE IIB REMEDIAL INVESTIGATION WORK PLAN ADDENDUM)	YES	SITE 00007 SITE 00010 SITE 00011 SITE 00012 SITE 00021 SITE 00024 WELL 00012-MW-03

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AR_N60028_000412 CORRESPONDENCE 26	**06-14-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 23 MAY 1995 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	AST 0000103 AST 0000104 BLDG 0000002 BLDG 0000180 SITE 00001 SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00019 SITE 00022 WELL 00006-MW-01 WELL 00006-MW-02 WELL 00006-MW-03 WELL 00006-MW-06 WELL 00006-MW-07 WELL 00006-MW-11 WELL 00006-MW-12 WELL 00006-MW-13 WELL 00011-MW-02

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					WELL 00011-MW-04
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AR_N60028_000506 CORRESPONDENCE 10	**06-15-1995**	RESTORATION ADVISORY BOARD MEMBER	TRANSMITTAL OF THE SUGGESTIONS AND RECOMMENDATIONS TO IMPROVE THE QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORTS (W/ ENCLOSURE)	YES	SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00017 SITE 00019 SITE 00020 SITE 00024 WELL 00006-MW-01 WELL 00006-MW-04 WELL 00011-MW-04 WELL 00012-MW-01 WELL 00017-MW-01 WELL 00020-MW-01 WELL 00024-MW-02 WELL 00024-MW-04 WELL AP-01 WELL AP-03 WELL AP-05 WELL AP-06 WELL AP-07 WELL MW-24 WELL MW-25

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AR_N60028_000421 CORRESPONDENCE 37	**07-13-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 27 JUNE 1995 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	AST 0000004 AST 0000004M AST 0000005 AST 0000005M AST 0000006A AST 0000006B AST 0000006C AST 0000006D AST 0000006E AST 0000006F AST 0000006G AST 0000006M AST 0000007 AST 0000012A AST 0000012B AST 0000012C AST 0000012D AST 0000012E AST 0000034 AST 0000066 AST 0000103 AST 0000104 AST 0000117 AST 0000133 AST 0000134 AST 0000169 AST 0000170 AST 0000181

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					UST 0000225A
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AR_N60028_000433 REPORT 149	**08-25-1995**	PRC ENVIRONMENTAL MANAGEMENT, INC.	MAY 1995 QUARTERLY GROUNDWATER SAMPLING REPORT (SEE RECORD # 432 - NAVFAC EFA WEST TRANSMITTAL LETTER)	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00020 SITE 00022 SITE 00024 SITE 00025 WELL 00001-MW-01 WELL 00004-MW-01 WELL 00004-MW-02 WELL 00004-MW-03 WELL 00006-MW-01 WELL 00006-MW-02 WELL 00006-MW-03 WELL 00006-MW-04 WELL 00006-MW-06 WELL 00006-MW-07

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					WELL 00006-MW-13
					WELL 00011-MW-02
					WELL 00011-MW-03
					WELL 00011-MW-04
					WELL 00012-MW-01
					WELL 00012-MW-02
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					WELL 00012-MW-04
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AR_N60028_000444 MINUTES 127	**09-26-1995**	MARY HILLABRAND, INC.	26 SEPTEMBER 1995 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPTS	YES	BLDG 0000002 BLDG 0000003 BLDG 0000180 DRY DOCK 0004 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00028 SITE 00029

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AR_N60028_000438 CORRESPONDENCE 4	**10-02-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE AUGUST 1995 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00006 SITE 00008 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00021 SITE 00022 SITE 00024

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AR_N60028_000443 CORRESPONDENCE 35	**10-17-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 26 SEPTEMBER 1995 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0000001 BLDG 0000002 BLDG 0000003 BLDG 0000041 BLDG 0000099 BLDG 0000180 BLDG 0000342 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00028 SITE 00029

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					UST 0000002C UST 0000180B UST 0000180C UST 0000330A UST 0000330B UST 0000330C UST 0000330E UST 0000330F UST FF-08 WELL 00012-MW-03 WELL 00020-MW-02 WELL 00020-MW-03 WELL 00025-MW-03
AR_N60028_000449 MINUTES 122	**10-24-1995**	MARY HILLABRAND, INC.	24 OCTOBER 1995 RESTORATION ADVISORY BOARD (RAB) MEETING NO. 15 TRANSCRIPT	YES	SITE 00012 SITE 00020 SITE 00021 SITE 00024
AR_N60028_001909 MINUTES 19	**10-24-1995**	NAVFAC - SOUTHWEST DIVISION	24 OCTOBER 1995 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (INCLUDES SIGN-IN SHEET, AGENDA, AND VARIOUS HANDOUTS) [SEE RECORD # 448 - NAVFAC EFA WEST TRANSMITTAL LETTER]	YES	SITE 00012 SITE 00020

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AR_N60028_000445 CORRESPONDENCE 18	**10-31-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE SEPTEMBER 1995 MONTHLY STATUS REPORT, AND RESTORATION ADVISORY BOARD (RAB) SITE TOUR SUMMARY OF KEY QUESTIONS AND ANSWERS (W/ ENCLOSURES)	YES	BLDG 0000062 BLDG 0000099 SITE 00001 SITE 00003 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00013A SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029 WELL W-03

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AR_N60028_000446 CORRESPONDENCE 3	**11-09-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT FINAL WORK PLAN AND FIELD SAMPLING PLAN, PHASE II ECOLOGICAL RISK ASSESSMENT (ENCLOSURE IS RECORD # 447)	YES	SITE 00004 SITE 00005 SITE 00007 SITE 00008 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00016 SITE 00017 SITE 00019 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00028
AR_N60028_000448 CORRESPONDENCE 3	**11-14-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) 24 OCTOBER 1995 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES; AND 2) 16 OCTOBER 1995 REMEDIAL PROJECT MANAGERS (RPM) AND BASE REALIGNMENT AND CLOSURE (BRAC) CLEANUP TEAM (BCT) MEETING MINUTES	YES	SITE 00012 SITE 00013 SITE 00015 SITE 00020 SITE 00021

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AR_N60028_000454 REPORT 41	**12-06-1995**	PRC ENVIRONMENTAL MANAGEMENT, INC.	TIDAL INFLUENCE STUDY, SUMMARY OF RESULTS (SEE RECORD # 453 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00019 SITE 00024 SITE 00025 WELL 00011-MW-03
AR_N60028_000453 CORRESPONDENCE 5	**12-08-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) OCTOBER 1995 MONTHLY STATUS REPORT; AND 2) TIDAL INFLUENCE STUDY, SUMMARY OF RESULTS (W/ ENCLOSURE 1; AND ENCLOSURE 2 IS RECORD # 454)	YES	SITE 00001 SITE 00005 SITE 00006 SITE 00007 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00016 SITE 00017 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 WELL W-03

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AR_N60028_000455 CORRESPONDENCE 4	**12-12-1995**	NAVFAC - EFA WEST	TRANSMITTAL OF THE NOVEMBER 1995 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00006 SITE 00009 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024 WELL W-03

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AR_N60028_000456 CORRESPONDENCE 9	**12-18-1995**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND COMMENTS ON THE DRAFT FINAL WORK PLAN AND FIELD SAMPLING PLAN, PHASE II ECOLOGICAL RISK ASSESSMENT (SEE RECORD # 447 - DRAFT FINAL WORK PLAN AND FIELD SAMPLING PLAN, PHASE II ECOLOGICAL RISK ASSESSMENT)	YES	SITE 00004 SITE 00005 SITE 00007 SITE 00008 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00016 SITE 00017 SITE 00019 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00028
AR_N60028_000464 REPORT 19	**01-15-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	APPROACH TO DEVELOPMENT OF PETROLEUM CLEANUP GOALS PROTECTIVE OF THE SAN FRANCISCO BAY (SEE RECORD # 465 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00020 SITE 00021 SITE 00022 SITE 00025

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AR_N60028_000465 CORRESPONDENCE 2	**01-17-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE APPROACH TO DEVELOPMENT OF PETROLEUM CLEANUP GOALS PROTECTIVE OF THE SAN FRANCISCO BAY (ENCLOSURE IS RECORD # 464)	YES	SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00020 SITE 00021 SITE 00022 SITE 00025

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AR_N60028_000475 REPORT 60	**02-06-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	REVISED SUMMARY OF RESULTS PHASE IIA REMEDIAL INVESTIGATION, AQUIFER TESTING (SEE RECORD # 474 - NAVFAC EFAW TRANSMITTAL LETTER; AND RECORD # 387 - SUMMARY OF RESULTS, PHASE IIA REMEDIAL INVESTIGATION, AQUIFER TESTING)	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00017 SITE 00019 SITE 00020 SITE 00022 SITE 00024 SITE 00025 WELL 00001-MW-01 WELL 00004/19-MW-01 WELL 00006-MW-02 WELL 00006-MW-03 WELL 00011-MW-03 WELL 00011-MW-04 WELL 00012-MW-01 WELL 00012-MW-03 WELL 00017-MW-01

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AR_N60028_000498 REPORT 245	**04-10-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL WORK PLAN AND FIELD SAMPLING PLAN, PHASE II ECOLOGICAL RISK ASSESSMENT (INCLUDES CORRECTION PAGE DATED 07 MAY 1996) [SEE RECORDS # 497 AND # 511 - NAVFAC EFAW TRANSMITTAL LETTERS]	YES	SITE 00004 SITE 00006 SITE 00012 SITE 00015 SITE 00025 SITE 00028
AR_N60028_000497 CORRESPONDENCE 3	**04-12-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL WORK PLAN AND FIELD SAMPLING PLAN, PHASE II ECOLOGICAL RISK ASSESSMENT (ENCLOSURE IS RECORD # 498)	YES	SITE 00004 SITE 00006 SITE 00012 SITE 00015 SITE 00025 SITE 00028

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AR_N60028_000511 CORRESPONDENCE 2	**05-07-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE REVISED COVER PAGE FOR THE FINAL WORK PLAN AND FIELD SAMPLING PLAN, PHASE II ECOLOGICAL RISK ASSESSMENT (ENCLOSURE IS RECORD # 498)	YES	SITE 00004 SITE 00006 SITE 00012 SITE 00015 SITE 00025 SITE 00028
AR_N60028_000523 REPORT 839	**05-30-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	REMEDIAL INVESTIGATION PHASE IIB SUMMARY OF VALIDATED DATA, VOLUMES I AND II OF II (SEE RECORD # 522 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00028 SITE 00029

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AR_N60028_000526 REPORT 370	**05-31-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING FROM NOVEMBER 1994 TO NOVEMBER 1995 (SEE RECORD # 525 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	AST 0000004 AST 0000005 AST 0000006A AST 0000006B AST 0000006C AST 0000006D AST 0000006E AST 0000006F AST 0000006G AST 0000456 AST 0000672 BLDG 0000002 BLDG 0000003 BLDG 0000085 BLDG 0000089 BLDG 0000099 BLDG 0000111 BLDG 0000194 BLDG 0000224 BLDG 0000225 BLDG 0000240 BLDG 0000241 BLDG 0000242 BLDG 0000243 BLDG 0000267 BLDG 0000289 BLDG 0000290 BLDG 0000325

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					BLDG 0000370
					BLDG 0000394
					BLDG 0001235
					SITE 00001
					SITE 00004
					SITE 00006
					SITE 00009
					SITE 00010
					SITE 00011
					SITE 00012
					SITE 00014
					SITE 00015
					SITE 00017
					SITE 00020
					SITE 00021
					SITE 00022
					SITE 00024
					SITE 00025
					UST 0000002A
					UST 0000002C
					UST 0000002D
					UST 0000180B
					UST 0000180C
					UST 0000225A
					UST 0000225B

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					UST 0000225C
					UST 0000225D
					UST 0000240A
					UST 0000240B
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					UST 0000330A
					UST 0000330B
					UST 0000330C
					UST 0000330D
					UST 0000330E
					UST 0000330F
					WELL 00001-MW-01
					WELL 00004/19-MW-01
					WELL 00004/19-MW-02
					WELL 00004/19-MW-03
					WELL 00006-MW-01
					WELL 00006-MW-02
					WELL 00006-MW-03
					WELL 00006-MW-04
					WELL 00006-MW-06

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					WELL 00006-MW-14
					WELL 00006-MW-15
					WELL 00006-MW-16
					WELL 00006-MW-17
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					WELL 00006-MW-19
					WELL 00006-MW-20
					WELL 00009-MW-01
					WELL 00010-MW-01
					WELL 00011-MW-01

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					WELL 00012-MW-01
					WELL 00012-MW-02
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					WELL 00012-MW-11

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					WELL 00014-CW-01
					WELL 00014-CW-02
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					WELL 00017-MW-01

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					WELL 00021-MW-03A
					WELL 00021-MW-03B
					WELL 00021-MW-04A
					WELL 00021-MW-04B
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					WELL 00022-MW-02

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					WELL 00024-MW-04
					WELL 00024-MW-05A
					WELL 00024-MW-05B
					WELL 00024-MW-05C
					WELL 00024-MW-06A
					WELL 00024-MW-06B
					WELL 00024-MW-06C
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					WELL 00024-MW-07C

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					WELL 00025-MW-01 WELL 00025-MW-02 WELL 00025-MW-03
AR_N60028_000522 CORRESPONDENCE 3	**06-03-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE REMEDIAL INVESTIGATION PHASE IIB SUMMARY OF VALIDATED DATA (ENCLOSURE IS RECORD # 523)	YES	SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00024 SITE 00028 SITE 00029

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AR_N60028_000525 CORRESPONDENCE 3	**06-03-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING FROM NOVEMBER 1994 TO NOVEMBER 1995 (ENCLOSURE IS RECORD # 526)	YES	SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000531 CORRESPONDENCE 2	**06-17-1996**	NAVFAC - EFA WEST	CLARIFICATION OF THE APPLICABILITY OF THE PLANNED BIOREMEDIATION TREATABILITY STUDY	YES	SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021

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AR_N60028_000536 CORRESPONDENCE 3	**07-02-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT INTERIM GROUNDWATER MONITORING WORK PLAN (ENCLOSURE IS RECORD # 537)	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00019 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000538 CORRESPONDENCE 46	**07-10-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 25 JUNE 1996 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00022 SITE 00025

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AR_N60028_000547 REPORT 156	**07-15-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FEBRUARY 1996 QUARTERLY GROUNDWATER SAMPLING REPORT (SEE RECORD # 546 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024 WELL 00006-MW-14 WELL 00006-MW-15 WELL 00006-MW-16 WELL 00006-MW-17 WELL 00006-MW-18 WELL 00006-MW-19 WELL 00006-MW-20 WELL 00007-MW-01 WELL 00009-MW-01

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					WELL 00012-MW-05
					WELL 00012-MW-06
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					WELL 00015-MW-03
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					WELL 00020-MW-05
					WELL 00021-MW-01
					WELL 00021-MW-02A
					WELL 00021-MW-02B
					WELL 00021-MW-03A
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					WELL 00022-MW-05 WELL 00024-MW-05A WELL 00024-MW-05B WELL 00024-MW-05C WELL 00024-MW-06A WELL 00024-MW-06B WELL 00024-MW-06C WELL 00024-MW-07A WELL 00024-MW-07B WELL 00024-MW-07C
AR_N60028_000546 CORRESPONDENCE 3	**07-17-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FEBRUARY 1996 QUARTERLY GROUNDWATER SAMPLING REPORT (ENCLOSURE IS RECORD # 547)	YES	SITE 00006 SITE 00009 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00024

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AR_N60028_000558 CORRESPONDENCE 2	**08-13-1996**	NAVFAC - EFA WEST	REQUEST FOR SCHEDULE EXTENSION ON THE DRAFT REMEDIAL INVESTIGATION REPORT	YES	SITE 00001 SITE 00003 SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00017 SITE 00021 SITE 00024
AR_N60028_000561 REPORT 22	**08-19-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	TECHNICAL MEMORANDUM: PHASE IIB REMEDIAL INVESTIGATION, ADDITIONAL CHARACTERIZATION (SEE RECORD # 560 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	AST 0000103 AST 0000104 SITE 00005 SITE 00012 SITE 00017 WELL 00012-MW-16 WELL 00017-MW-01
AR_N60028_000560 CORRESPONDENCE 3	**08-20-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE TECHNICAL MEMORANDUM: PHASE IIB REMEDIAL INVESTIGATION, ADDITIONAL CHARACTERIZATION (ENCLOSURE IS RECORD # 561)	YES	SITE 00012 SITE 00017

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AR_N60028_000563 CORRESPONDENCE 3	**08-23-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE ECOTOXICOLOGICAL TESTING SAMPLING AND ANALYSIS PLAN FOR DEVELOPMENT OF PETROLEUM CLEANUP GOALS (ENCLOSURE IS RECORD # 564)	YES	SITE 00006 SITE 00012 SITE 00015 SITE 00022
AR_N60028_000564 REPORT 80	**08-23-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	ECOTOXICOLOGICAL TESTING SAMPLING AND ANALYSIS PLAN FOR DEVELOPMENT OF PETROLEUM CLEANUP GOALS (SEE RECORD # 563 - NAVFAC EFAW TRANSMITTAL LETTER; AND RECORD # 595 - ECOTOXICOLOGICAL TESTING SAMPLING AND ANALYSIS PLAN ADDENDUM)	YES	SITE 00006 SITE 00012 SITE 00015 SITE 00022
AR_N60028_000565 CORRESPONDENCE 2	**08-28-1996**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND COMMENTS ON THE TECHNICAL MEMORANDUM: PHASE IIB REMEDIAL INVESTIGATION, ADDITIONAL CHARACTERIZATION (SEE RECORD # 561 - TECHNICAL MEMORANDUM; PHASE IIB REMEDIAL INVESTIGATION, ADDITIONAL CHARACTERIZATION)	YES	SITE 00012 SITE 00017 WELL 00017-MW-01
AR_N60028_000568 CORRESPONDENCE 3	**09-06-1996**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE ECOTOXICOLOGICAL TESTING SAMPLING AND ANALYSIS PLAN FOR DEVELOPMENT OF PETROLEUM CLEANUP GOALS (SEE RECORD # 564 - ECOTOXICOLOGICAL TESTING SAMPLING AND ANALYSIS PLAN FOR DEVELOPMENT OF PETROLEUM CLEANUP GOALS)	YES	SITE 00006 SITE 00012 SITE 00015 SITE 00022

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AR_N60028_000569 CORRESPONDENCE 8	**09-10-1996**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE 1) PHASE IIB REMEDIAL INVESTIGATION ADDITIONAL CHARACTERIZATION; AND 2) ECOTOXICOLOGICAL TESTING SAMPLING AND ANALYSIS PLAN FOR DEVELOPMENT OF PETROLEUM CLEANUP GOALS	YES	BLDG 0000240 BLDG 0000241 BLDG 0000242 BLDG 0000243 BLDG 0000244 BLDG 0000246 BLDG 0000248 BLDG 0000464 SITE 00006 SITE 00012 SITE 00017 SITE 00024 UST 0000240A UST 0000240B UST 0000240C UST 0000240D WELL 00017-MW-01
AR_N60028_000571 CORRESPONDENCE 49	**09-11-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 27 AUGUST 1996 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0000041 SITE 00012 SITE 00017 UST 0000234
AR_N60028_000572 CORRESPONDENCE 4	**09-17-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE RESPONSES TO COMMENTS ON THE TECHNICAL MEMORANDUM: PHASE IIB REMEDIAL INVESTIGATION ADDITIONAL CHARACTERIZATION (W/ ENCLOSURE) [SEE RECORD # 565 - COMMENTS BY U.S. EPA]	YES	SITE 00005 SITE 00012 SITE 00017 WELL 00017-MW-01

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AR_N60028_000574 CORRESPONDENCE 3	**09-24-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE JUNE 1996 QUARTERLY GROUNDWATER SAMPLING REPORT (ENCLOSURE IS RECORD # 575)	YES	SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024

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AR_N60028_000575 REPORT 153	**09-24-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	JUNE 1996 QUARTERLY GROUNDWATER SAMPLING REPORT (SEE RECORD # 574 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024 WELL 00006-MW-14 WELL 00006-MW-15 WELL 00006-MW-16 WELL 00006-MW-17 WELL 00006-MW-18 WELL 00006-MW-19 WELL 00006-MW-20 WELL 00007-MW-01 WELL 00009-MW-01

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					WELL 00010-MW-01
					WELL 00011-MW-05
					WELL 00011-MW-06
					WELL 00011-MW-07
					WELL 00012-MW-05
					WELL 00012-MW-06
					WELL 00012-MW-07
					WELL 00012-MW-08
					WELL 00012-MW-09
					WELL 00012-MW-10
					WELL 00012-MW-11
					WELL 00012-MW-12
					WELL 00012-MW-13
					WELL 00012-MW-14
					WELL 00012-MW-15
					WELL 00012-MW-16

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					WELL 00014-MW-03
					WELL 00014-MW-04
					WELL 00015-MW-01
					WELL 00015-MW-02
					WELL 00015-MW-03
					WELL 00020-MW-04
					WELL 00020-MW-05
					WELL 00021-MW-01
					WELL 00021-MW-02A
					WELL 00021-MW-02B
					WELL 00021-MW-03A
					WELL 00021-MW-03B
					WELL 00021-MW-04A
					WELL 00021-MW-04B
					WELL 00021-MW-06
					WELL 00022-MW-04

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
					WELL 00022-MW-05 WELL 00024-MW-05A WELL 00024-MW-05B WELL 00024-MW-05C WELL 00024-MW-06A WELL 00024-MW-06B WELL 00024-MW-06C WELL 00024-MW-07A WELL 00024-MW-07B WELL 00024-MW-07C
AR_N60028_000577 MINUTES 101	**09-24-1996**	MARY HILLABRAND, INC.	24 SEPTEMBER 1996 RESTORATION ADVISORY BOARD (RAB) MEETING NO. 26 TRANSCRIPT	YES	BLDG 0000001 SITE 00006 SITE 00012 SITE 00019
AR_N60028_000587 CORRESPONDENCE 7	**10-11-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) AUGUST 1996 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT; AND 2) SEPTEMBER 1996 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURES 1 AND 2)	YES	SITE 00001 SITE 00003 SITE 00006 SITE 00012 SITE 00017 WELL W-03

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AR_N60028_000578 CORRESPONDENCE 32	**10-15-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 24 SEPTEMBER 1996 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00004 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00022 SITE 00025
AR_N60028_000580 CORRESPONDENCE 3	**10-22-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT REMEDIAL INVESTIGATION REPORT (ENCLOSURE IS RECORD # 581)	YES	SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024 SITE 00028 SITE 00029

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AR_N60028_000591 MINUTES 106	**10-22-1996**	MARY HILLABRAND, INC.	22 OCTOBER 1996 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT	YES	SITE 00001 SITE 00003 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00017 SITE 00021 SITE 00024 SITE 00027 SITE 00028 SITE 00029 UST 0000103 UST 0000104

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AR_N60028_000592 CORRESPONDENCE 47	**11-07-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 22 OCTOBER 1996 RESTORATION ADVISORY BOARD (RAB) REMEDIAL INVESTIGATION/FEASIBILITY STUDY MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00017 SITE 00021 SITE 00024 SITE 00027 SITE 00028 SITE 00029
AR_N60028_000595 REPORT 16	**11-18-1996**	PRC ENVIRONMENTAL MANAGEMENT, INC.	ADDENDUM TO ECOTOXICOLOGICAL TESTING SAMPLING AND ANALYSIS PLAN FOR DEVELOPMENT OF PETROLEUM CLEANUP GOALS (INCLUDES RESPONSES TO COMMENTS)	YES	SITE 00006 SITE 00012 SITE 00015 SITE 00022

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AR_N60028_000601 CORRESPONDENCE 126	**11-19-1996**	MARY HILLABRAND, INC.	19 NOVEMBER 1996 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT	YES	BLDG 0000461 BLDG 0000462 BLDG 0000463 PARCEL T-081 PARCEL T-082 PARCEL T-083 PARCEL T-109 PARCEL T-110 PARCEL T-111 SITE 00006 SITE 00012 SITE 00017
AR_N60028_002118 CORRESPONDENCE 1	**11-19-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE ADDENDUM TO ECOTOXICOLOGICAL TESTING SAMPLING AND ANALYSIS PLAN FOR DEVELOPMENT OF PETROLEUM CLEANUP GOALS (ENCLOSURE IS RECORD # 595)	NO	SITE 00006 SITE 00012 SITE 00015 SITE 00022

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AR_N60028_000598 CORRESPONDENCE 8	**11-20-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE CONSENSUS STATEMENT FOR THE DRAFT PHASE I REMEDIAL INVESTIGATION REPORT (W/ ENCLOSURE) [SEE RECORD # 279 - DRAFT PHASE 1 REMEDIAL INVESTIGATION REPORT]	YES	SITE 00004 SITE 00006 SITE 00007 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000599 CORRESPONDENCE 3	**11-20-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) APPENDIX D CHANGES TO THE DRAFT REMEDIAL INVESTIGATION REPORT; AND 2) APPENDIX F CHANGES TO THE DRAFT REMEDIAL INVESTIGATION REPORT (ENCLOSURES 1 AND 2 ARE RECORD # 581)	YES	SITE 00007 SITE 00009 SITE 00010 SITE 00012 SITE 00017

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AR_N60028_000602 CORRESPONDENCE 42	**12-09-1996**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 19 NOVEMBER 1996 RESTORATION ADVISORY BOARD (RAB) REMEDIAL INVESTIGATION/FEASIBILITY STUDY MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0000461 BLDG 0000462 BLDG 0000463 PARCEL T-109 PARCEL YB-019 SITE 00006 SITE 00007 SITE 00010 SITE 00012 SITE 00017 SITE 00029
AR_N60028_000612 CORRESPONDENCE 25	**01-15-1997**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT (SEE RECORD # 581 - DRAFT REMEDIAL INVESTIGATION REPORT)	YES	BLDG 0000003 BLDG 0000099 PARCEL T-007 PARCEL T-008 PARCEL T-010 PARCEL T-014 PARCEL T-116 SITE 00003 SITE 00008 SITE 00012 SITE 00017 SITE 00021 SITE 00024 SITE 00025 SITE 00028 WELL 00024-MW-07

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AR_N60028_000614 CORRESPONDENCE 11	**01-17-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT (SEE RECORD # 581 - DRAFT REMEDIAL INVESTIGATION REPORT)	YES	SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00011 SITE 00012 SITE 00015 SITE 00017 SITE 00019 SITE 00022 SITE 00024 SITE 00025 WELL 00012-MW-18 WELL 00017-MW-01
AR_N60028_000615 CORRESPONDENCE 3	**01-21-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT (SEE RECORD # 581 - DRAFT REMEDIAL INVESTIGATION REPORT)	YES	SITE 00012

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AR_N60028_000616 CORRESPONDENCE 17	**01-21-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT (SEE RECORD # 581 - DRAFT REMEDIAL INVESTIGATION REPORT)	YES	SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024 SITE 00028 SITE 00029 UST 0000103 UST 0000104 WELL 00009-MW-01 WELL 00011-MW-03
AR_N60028_000619 MINUTES 142	**01-21-1997**	MARY HILLABRAND, INC.	21 JANUARY 1997 RESTORATION ADVISORY BOARD (RAB) MEETING NO. 29 TRANSCRIPT	YES	SITE 00006 SITE 00011 SITE 00012 SITE 00013 SITE 00017 SITE 00027

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AR_N60028_000617 CORRESPONDENCE 30	**01-22-1997**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT (SEE RECORD # 581 - DRAFT REMEDIAL INVESTIGATION REPORT)	YES	BLDG 0000003 BLDG 0000041 BLDG 0000099 BLDG 0000325 SITE 00001 SITE 00003 SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024 SITE 00028 SITE 00029 WELL 00009-MW-01
AR_N60028_000620 CORRESPONDENCE 5	**01-22-1997**	ARC ECOLOGY	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT (SEE RECORD # 581 - DRAFT REMEDIAL INVESTIGATION REPORT)	YES	SITE 00003 SITE 00005 SITE 00006 SITE 00009 SITE 00012 SITE 00017 SITE 00021

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AR_N60028_000618 CORRESPONDENCE 4	**01-28-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DECEMBER 1996 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00006 SITE 00007 SITE 00012 SITE 00014 SITE 00015 SITE 00022 SITE 00024 WELL W-03
AR_N60028_000623 CORRESPONDENCE 5	**02-04-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE SCHEDULE AND FIELD SAMPLING PLAN CHANGES FOR PHASE II ECOLOGICAL RISK ASSESSMENT SAMPLING	YES	SITE 00012
AR_N60028_000630 CORRESPONDENCE 110	**02-10-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 21 JANUARY 1997 RESTORATION ADVISORY BOARD (RAB) REMEDIAL INVESTIGATION/FEASIBILITY STUDY MEETING MINUTES (W/ ENCLOSURE) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	SITE 00011 SITE 00012 SITE 00013 SITE 00017 SITE 00021 SITE 00027

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AR_N60028_000631 CORRESPONDENCE 4	**02-12-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE JANUARY 1997 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00002 SITE 00003 SITE 00006 SITE 00012 SITE 00017 SITE 00022 SITE 00024
AR_N60028_000639 MINUTES 90	**02-18-1997**	MARY HILLABRAND, INC.	18 FEBRUARY 1997 RESTORATION ADVISORY BOARD (RAB) MEETING NO. 30 TRANSCRIPT	YES	SITE 00006 SITE 00012 SITE 00017

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AR_N60028_000635 CORRESPONDENCE 42	**03-13-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 18 FEBRUARY 1997 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	AST 0000169 AST 0000170 BLDG 0000201 SITE 00004 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00020 SITE 00022 SITE 00025 UST 0000001A UST 0000001B UST 0000001C UST 0000001D UST 0000001E UST 0000001F UST 0000002A UST 0000002D UST 0000085 UST 0000180A UST 0000180B UST 0000180C UST 0000201 UST 0000227 UST 0000234

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					UST 0000368A UST 0000368B UST YBI-111 UST YBI-169 UST YBI-270
AR_N60028_000636 CORRESPONDENCE 4	**03-13-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FEBRUARY 1997 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00006 SITE 00012 SITE 00017 SITE 00022 SITE 00024
AR_N60028_000673 MINUTES 145	**03-18-1997**	MARY HILLABRAND, INC.	18 MARCH 1997 RESTORATION ADVISORY BOARD (RAB) MEETING NO. 31 TRANSCRIPT	YES	BLDG 0000001 BLDG 0000002 BLDG 0000003 BLDG 0000096 BLDG 0000099 BLDG 0000180 BLDG 0000217 BLDG 0000229 BLDG 0000260 BLDG 0000271 SITE 00012 SITE 00017 SITE 00020

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AR_N60028_000675 CORRESPONDENCE 3	**04-10-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT REMEDIAL INVESTIGATION REPORT, CONTAMINANT FATE AND TRANSPORT MODELING, ADDENDUM 1 (ENCLOSURE IS RECORD # 676)	YES	SITE 00005 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000678 CORRESPONDENCE 4	**04-14-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE MARCH 1997 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00012 SITE 00017
AR_N60028_000679 CORRESPONDENCE 4	**04-15-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT REMEDIAL INVESTIGATION REPORT ADDITIONAL CHARACTERIZATION, ADDENDUM NO. 2 (INCLUDES SYNOPSIS) [ENCLOSURE IS RECORD # 680]	YES	SITE 00005 SITE 00012 SITE 00017 WELL 00012-MW-16

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AR_N60028_000692 MINUTES 149	**04-15-1997**	MARY HILLABRAND, INC.	15 APRIL 1997 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT	YES	BLDG 0000096 BLDG 0000099 BLDG 0000162 BLDG 0000260 PARCEL 0001 PARCEL 0002 PARCEL 0003 PARCEL 0004 PARCEL 0007 PARCEL 0028 PARCEL 0029 PARCEL 0030 PARCEL 0031 PARCEL 0032 PARCEL 0033 PARCEL 0034 PARCEL 0035 PARCEL 0052 PARCEL 0053 PARCEL 0056 PARCEL 0059 PARCEL 0060 PARCEL 0063 PARCEL 0073 PARCEL 0118 PARCEL 0299 SITE 00005 SITE 00012

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					SITE 00017 SITE 00020 SITE 00022 SITE 00024 SITE 00029
AR_N60028_000681 CORRESPONDENCE 4	**04-17-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT REMEDIAL INVESTIGATION REPORT, ECOTOXICOLOGICAL TESTING FOR THE DEVELOPMENT OF PETROLEUM SCREENING LEVELS, ADDENDUM NO. 3 (INCLUDES SYNOPSIS)	YES	SITE 00006 SITE 00012 SITE 00015 SITE 00022
AR_N60028_000683 CORRESPONDENCE 4	**04-17-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT FINAL INTERIM GROUNDWATER MONITORING PLAN (INCLUDES SYNOPSIS) [ENCLOSURE IS RECORD # 684]	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00009 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00019 SITE 00021 SITE 00024 SITE 00025

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AR_N60028_000685 CORRESPONDENCE 3	**04-25-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT REMEDIAL INVESTIGATION REPORT, REVISED REMEDIAL INVESTIGATION CONCLUSIONS AND RECOMMENDATIONS, ADDENDUM NO. 4 (ENCLOSURE IS RECORD # 686)	YES	SITE 00005 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024
AR_N60028_000691 CORRESPONDENCE 4	**05-09-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE APRIL 1997 MONTHLY STATUS REPORT, INSTALLATION RESTORATION PROGRAM (W/ ENCLOSURE)	YES	SITE 00012 SITE 00017 SITE 00024
AR_N60028_000694 CORRESPONDENCE 1	**05-13-1997**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND NO COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM 2, ADDITIONAL CHARACTERIZATION (SEE RECORD # 680 - DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM 2)	YES	SITE 00012 SITE 00017

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AR_N60028_000695 CORRESPONDENCE 52	**05-14-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 15 APRIL 1997 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 32 (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS) [W/ ENCLOSURE]	YES	BLDG 0000096 BLDG 0000099 BLDG 0000152 BLDG 0000260 BLDG 0000414 PARCEL T-001 PARCEL T-002 PARCEL T-003 PARCEL T-004 PARCEL T-027 PARCEL T-028 PARCEL T-029 PARCEL T-030 PARCEL T-031 PARCEL T-032 PARCEL T-033 PARCEL T-034 PARCEL T-035 PARCEL T-052 PARCEL T-053 PARCEL T-054 PARCEL T-056 PARCEL T-059 PARCEL T-060 PARCEL T-063 PARCEL T-073 PARCEL T-097 PARCEL T-098

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					PARCEL T-099 PARCEL T-101 PARCEL T-118 SITE 00005 SITE 00012 SITE 00017 SITE 00020 SITE 00022 SITE 00024 UST 0000001A UST 0000001E UST 0000002 UST 0000225 UST 0000225A UST 0000230 UST 0000270
AR_N60028_000698 CORRESPONDENCE 3	**05-19-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT FINAL INTERIM GROUNDWATER MONITORING PLAN (SEE RECORD # 684 - DRAFT FINAL INTERIM GROUNDWATER MONITORING PLAN)	YES	SITE 00001 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00012 SITE 00014 SITE 00020 SITE 00021 SITE 00022

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AR_N60028_000699 CORRESPONDENCE 4	**05-19-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM 3, ECOTOXICOLOGICAL TESTING FOR THE DEVELOPMENT OF PETROLEUM SCREENING LEVELS (SEE RECORD # 681 - DRAFT ADDENDUM 3)	YES	SITE 00012 SITE 00017
AR_N60028_000700 CORRESPONDENCE 3	**05-19-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM 2, ADDITIONAL CHARACTERIZATION (SEE RECORD # 680 - DRAFT ADDENDUM 2)	YES	SITE 00012 SITE 00017 WELL 00012-MW-16
AR_N60028_000704 MINUTES 133	**05-20-1997**	MARY HILLABRAND, INC.	20 MAY 1997 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 33	YES	BLDG 0000001 BLDG 0000227 BLDG 0000335 BLDG 0000369 PARCEL T-009 PARCEL T-119 PIER 00001 SITE 00005 SITE 00011 SITE 00012 SITE 00015 SITE 00016 SITE 00017 SITE 00020 SITE 00021 SITE 00024 UST 0000270

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AR_N60028_000703 CORRESPONDENCE 2	**05-21-1997**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM 2, ADDITIONAL CHARACTERIZATION (SEE RECORD # 680 - DRAFT ADDENDUM 2)	YES	SITE 00012 SITE 00017
AR_N60028_000706 CORRESPONDENCE 4	**05-22-1997**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM 1, CONTAMINANT FATE AND TRANSPORT MODELING (SEE RECORD # 676 - DRAFT ADDENDUM 1)	YES	SITE 00005 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012
AR_N60028_000714 CORRESPONDENCE 3	**05-23-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING FROM NOVEMBER 1995 TO SEPTEMBER 1996 (ENCLOSURE IS RECORD # 715)	YES	SITE 00006 SITE 00009 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024

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AR_N60028_000715 REPORT 273	**05-23-1997**	PRC ENVIRONMENTAL MANAGEMENT, INC.	GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING FROM NOVEMBER 1995 TO SEPTEMBER 1996 (SEE RECORD # 714 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00006 SITE 00009 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024
AR_N60028_000741 CORRESPONDENCE 3	**05-23-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM 3, ECOTOXICOLOGICAL TESTING FOR THE DEVELOPMENT OF PETROLEUM SCREENING LEVELS (SEE RECORD # 682 - DRAFT ADDENDUM 3)	YES	SITE 00012 SITE 00015
AR_N60028_000742 CORRESPONDENCE 3	**05-23-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM NO. 2, ADDITIONAL CHARACTERIZATION (SEE RECORD # 680 - DRAFT ADDENDUM NO. 2)	YES	SITE 00012 SITE 00017
AR_N60028_000743 CORRESPONDENCE 3	**05-27-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM 4, REVISED REMEDIAL INVESTIGATION CONCLUSIONS AND RECOMMENDATIONS (SEE RECORD # 686 - DRAFT ADDENDUM 4)	YES	SITE 00005 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017

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AR_N60028_000744 CORRESPONDENCE 2	**05-27-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM 1, CONTAMINANT FATE AND TRANSPORT MODELING; AND ADDENDUM 4, REVISED REMEDIAL INVESTIGATION CONCLUSIONS AND RECOMMENDATIONS	YES	SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00019 SITE 00020 SITE 00024
AR_N60028_000712 CORRESPONDENCE 4	**06-10-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE MAY 1997 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00012 SITE 00024

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AR_N60028_000717 CORRESPONDENCE 42	**06-10-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 20 MAY 1997 RESTORATION ADVISORY BOARD (RAB) DRAFT MEETING MINUTES, MEETING NO. 33 (W/ ENCLOSURE)	YES	BLDG 0000001 BLDG 0000227 BLDG 0000335 BLDG 0000369 PARCEL T-009 PARCEL T-119 PIER 00001 SITE 00005 SITE 00011 SITE 00012 SITE 00015 SITE 00016 SITE 00017 SITE 00020 SITE 00021 SITE 00024 UST 0000270
AR_N60028_000721 CORRESPONDENCE 4	**07-02-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE JUNE 1997 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00012 SITE 00024

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AR_N60028_000726 CORRESPONDENCE 33	**07-21-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 17 JUNE 1997 RESTORATION ADVISORY BOARD (RAB) DRAFT MEETING MINUTES (W/ ENCLOSURE)	YES	PARCEL T-093 PARCEL T-096 PARCEL T-097 PARCEL T-104 PARCEL T-105 PARCEL T-106 PARCEL YB-001 PARCEL YB-002 PARCEL YB-003 PARCEL YB-004 PARCEL YB-005 PARCEL YB-006 PARCEL YB-007 PARCEL YB-008 PARCEL YB-009 PARCEL YB-010 PARCEL YB-011 PARCEL YB-012 PARCEL YB-013 PARCEL YB-015 PARCEL YB-016 PARCEL YB-017 PARCEL YB-019 PARCEL YB-020 PARCEL YB-021 PARCEL YB-022 PARCEL YB-023 SITE 00006

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AR_N60028_000728 MINUTES 47	**07-22-1997**	MARY HILLABRAND, INC.	22 JULY 1997 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 35	YES	AST 0000034A BLDG 0000001 BLDG 0000180 BLDG 0000201 BLDG 0000227 BLDG 0000368 BLDG 0000449 PARCEL T-002 PARCEL T-003 PARCEL T-018 PARCEL T-020 PARCEL T-029 PARCEL T-096 PARCEL T-097 PARCEL T-100 PARCEL T-101 PARCEL T-102 PARCEL T-103 PARCEL T-107 SITE 00001 SITE 00006 SITE 00012 SITE 00020 UST 0000270

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AR_N60028_000729 CORRESPONDENCE 3	**07-29-1997**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT FINAL INTERIM GROUNDWATER MONITORING PLAN (SEE RECORD # 684 - DRAFT FINAL INTERIM GROUNDWATER MONITORING PLAN)	YES	SITE 00004 SITE 00006 SITE 00011 SITE 00012 SITE 00019 SITE 00020 SITE 00024
AR_N60028_000730 CORRESPONDENCE 4	**08-04-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE JULY 1997 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00012 SITE 00024
AR_N60028_000733 CORRESPONDENCE 3	**08-12-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT ADDITIONAL CHARACTERIZATION WORK PLAN (SEE RECORD # 767 - FINAL WORK PLAN, ADDITIONAL CHARACTERIZATION)	YES	SITE 00012

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AR_N60028_000737 CORRESPONDENCE 34	**08-12-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 22 JULY 1997 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	AST 0000034A BLDG 0000001 BLDG 0000201 BLDG 0000368 PARCEL T-096 PARCEL T-097 PARCEL T-100 PARCEL T-101 PARCEL T-102 PARCEL T-103 PARCEL T-107 SITE 00006 SITE 00012 SITE 00020 UST 0000001A UST 0000001E UST 0000180C UST 0000201 UST 0000227 UST 0000270 UST 0000368A UST 0000368B
AR_N60028_000753 MINUTES 50	**08-19-1997**	MARY HILLABRAND, INC.	19 AUGUST 1997 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 36	YES	SITE 00012

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AR_N60028_000739 CORRESPONDENCE 2	**08-28-1997**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT ADDITIONAL CHARACTERIZATION WORK PLAN (SEE RECORD # 767 - FINAL ADDITIONAL CHARACTERIZATION WORK PLAN)	YES	SITE 00012
AR_N60028_000750 REPORT 199	**09-02-1997**	PRC ENVIRONMENTAL MANAGEMENT, INC.	FINAL INTERIM GROUNDWATER MONITORING PLAN (SEE RECORD # 748 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00019 SITE 00021 SITE 00022 SITE 00024 SITE 00025

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
AR_N60028_000746 CORRESPONDENCE 35	**09-04-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) 20 MAY 1997 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES; 2) 17 JUNE 1997 FINAL RAB MEETING MINUTES; AND 3) 22 JULY 1997 FINAL RAB MEETING MINUTES (W/ ENCLOSURES)	YES	AST 0000034A BLDG 0000099 BLDG 0000227 PARCEL T-011 PARCEL T-012 PARCEL T-013 PARCEL T-015 PARCEL T-017 PARCEL T-018 PARCEL T-023 PARCEL T-025 PARCEL T-026 PARCEL T-097 PARCEL T-105 PARCEL T-106 PARCEL T-119 PARCEL YB-001 PARCEL YB-002 PARCEL YB-010 PARCEL YB-017 PIER 00001 SITE 00005 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00012 SITE 00015

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					SITE 00016 SITE 00017 SITE 00020 SITE 00021 SITE 00024 SITE 00028 SITE 00029 UST 0000001A UST 0000001E UST 0000180C UST 0000201 UST 0000270 UST 0000368A UST 0000368B
AR_N60028_000748 CORRESPONDENCE 12	**09-04-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) FINAL INTERIM GROUNDWATER MONITORING PLAN; AND 2) RESPONSE TO COMMENTS ON THE DRAFT FINAL INTERIM GROUNDWATER MONITORING PLAN (W/ ENCLOSURE 2; AND ENCLOSURE 1 IS RECORD # 750)	YES	SITE 00004 SITE 00006 SITE 00007 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024

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AR_N60028_000751 CORRESPONDENCE 4	**09-08-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE AUGUST 1997 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00012 SITE 00024
AR_N60028_000755 CORRESPONDENCE 64	**09-08-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 19 AUGUST 1997 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0000461 SITE 00001 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00024

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AR_N60028_000769 MINUTES 53	**09-16-1997**	MARY HILLABRAND, INC.	16 SEPTEMBER 1997 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT	YES	SITE 00007 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024 SITE 00028 SITE 00029 UST 0000270
AR_N60028_000767 REPORT 18	**09-17-1997**	TETRA TECH EM, INC.	FINAL ADDITIONAL CHARACTERIZATION WORK PLAN (SEE RECORD # 766 - EFA WEST TRANSMITTAL LETTER)	YES	SITE 00012
AR_N60028_000766 CORRESPONDENCE 3	**09-18-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL ADDITIONAL CHARACTERIZATION WORK PLAN (ENCLOSURE IS RECORD # 767)	YES	SITE 00012
AR_N60028_000770 CORRESPONDENCE 31	**10-08-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 16 SEPTEMBER 1997 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00007 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024 SITE 00028 SITE 00029

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AR_N60028_000771 CORRESPONDENCE 4	**10-08-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE SEPTEMBER 1997 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00012 SITE 00017
AR_N60028_000774 CORRESPONDENCE 2	**10-15-1997**	NAVFAC - EFA WEST	REQUEST FOR REVIEW EXTENSION ON THE DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT	YES	SITE 00005 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00021 SITE 00024 SITE 00028 SITE 00029

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AR_N60028_000776 CORRESPONDENCE 3	**10-15-1997**	NAVFAC - EFA WEST	REQUEST FOR CONCURRENCE ON THE REVISED FEDERAL FACILITY SITE REMEDIATION AGREEMENT APPENDIX D (W/ ENCLOSURE)	YES	SITE 00005 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00021 SITE 00024 SITE 00027 SITE 00028 SITE 00029
AR_N60028_000781 MINUTES 46	**10-21-1997**	MARY HILLABRAND, INC.	21 OCTOBER 1997 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT	YES	BLDG 0000225 SITE 00006 SITE 00012 SITE 00020
AR_N60028_000777 CORRESPONDENCE 9	**10-22-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE RESPONSES TO COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, REVISED REMEDIAL INVESTIGATION CONCLUSIONS AND RECOMMENDATIONS, ADDENDUM NO. 4 (W/ ENCLOSURE) [SEE RECORD # 707 AND # 711 - COMMENTS]	YES	BLDG 0000062 BLDG 0000355 SITE 00005 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024

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AR_N60028_000778 CORRESPONDENCE 23	**10-27-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) 19 AUGUST 1997 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES; AND 2) 16 SEPTEMBER 1997 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00020 SITE 00021 SITE 00024 SITE 00028 SITE 00029
AR_N60028_000780 CORRESPONDENCE 4	**11-03-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE OCTOBER 1997 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00012
AR_N60028_000782 CORRESPONDENCE 36	**11-10-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 21 OCTOBER 1997 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE) [INCLUDES RESPONSE TO COMMENTS ON THE DRAFT SITE SPECIFIC ENVIRONMENTAL BASELINE SURVEY AND DRAFT FINDING OF SUITABILITY TO LEASE FOR REUSE ZONE 4]	YES	SITE 00004 SITE 00006 SITE 00012 SITE 00014 SITE 00019 SITE 00020 SITE 00022

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AR_N60028_000785 CORRESPONDENCE 52	**11-18-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE RESPONSES TO COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT; AND THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDA 1 THROUGH 4 (W/ ENCLOSURE)	YES	SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00024 SITE 00025 UST 0000270
AR_N60028_000790 MINUTES 47	**11-18-1997**	MARY HILLABRAND, INC.	18 NOVEMBER 1997 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT	YES	SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00011 SITE 00012 SITE 00017 SITE 00024 SITE 00028 SITE 00029

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AR_N60028_000801 CORRESPONDENCE 17	**11-30-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT FINAL PHASE IIB REMEDIAL INVESTIGATION REPORT (DRAFT FINAL WAS NOT RECEIVED IN THE RESTORATION RECORDS FILE)	YES	SITE 00001 SITE 00003 SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024 SITE 00028 SITE 00029
AR_N60028_000795 CORRESPONDENCE 4	**12-04-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE NOVEMBER 1997 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00012
AR_N60028_000796 CORRESPONDENCE 14	**12-04-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 21 OCTOBER 1997 RESTORATION ADVISORY BOARD (RAB) FINAL MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00006 SITE 00012 SITE 00020 SITE 00024

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AR_N60028_000797 CORRESPONDENCE 121	**12-10-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 18 NOVEMBER 1997 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00011 SITE 00012 SITE 00017 SITE 00024 SITE 00028 SITE 00029
AR_N60028_000802 CORRESPONDENCE 5	**12-12-1997**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT FINAL REMEDIAL INVESTIGATION REPORT (SEE RECORD # 757 - DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT)	YES	SITE 00005 SITE 00010 SITE 00012 SITE 00017 SITE 00024
AR_N60028_000803 MINUTES 39	**12-16-1997**	MARY HILLABRAND, INC.	16 DECEMBER 1997 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 40	YES	SITE 00011 SITE 00012 SITE 00028 SITE 00029 UST 0000270

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AR_N60028_000805 CORRESPONDENCE 9	**12-19-1997**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND COMMENTS ON THE DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT (SEE RECORD # 757 - DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT)	YES	SITE 00001 SITE 00003 SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024 SITE 00028 SITE 00029

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AR_N60028_000806 CORRESPONDENCE 49	**12-19-1997**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT (INCLUDES COMMENTS BY CRQCB, HERD, AND CALIFORNIA DEPARTMENT OF FISH AND GAME; AND POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS)	YES	BLDG 0000099 SITE 00001 SITE 00003 SITE 00005 SITE 00008 SITE 00009 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00024 SITE 00024A SITE 00024B SITE 00025 SITE 00028 SITE 00029
AR_N60028_000807 CORRESPONDENCE 2	**12-22-1997**	ARC ECOLOGY	REVIEW AND COMMENTS ON THE DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT (SEE RECORD # 757 - DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT)	YES	SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017

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AR_N60028_000800 CORRESPONDENCE 4	**12-30-1997**	NAVFAC - EFA WEST	TRANSMITTAL OF THE RESPONSES TO COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT, ADDENDUM NO. 2 (W/ ENCLOSURE) [DTSC REVIEW AND COMMENTS WERE NOT RECEIVED IN THE RESTORATION RECORDS FILE]	YES	SITE 00005 SITE 00006 SITE 00012 SITE 00017 SITE 00022 SITE 00024
AR_N60028_000808 CORRESPONDENCE 4	**01-05-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DECEMBER 1997 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00007 SITE 00008 SITE 00012
AR_N60028_000812 CORRESPONDENCE 61	**01-13-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 16 DECEMBER 1997 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00011 SITE 00012 SITE 00028 SITE 00029 UST 0000270

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AR_N60028_000817 CORRESPONDENCE 7	**01-20-1998**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT CORRECTIVE ACTION PLAN REPORT (SEE RECORD # 787 - DRAFT CORRECTIVE ACTION PLAN)	YES	SITE 00004 SITE 00005 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000828 MINUTES 47	**01-20-1998**	MARY HILLABRAND, INC.	20 JANUARY 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT	YES	BLDG 0000208 BLDG 0000230 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00019 SITE 00024 SITE 00028 SITE 00029
AR_N60028_000822 CORRESPONDENCE 6	**01-28-1998**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON APPENDIX N OF THE DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT (SEE RECORD # 757 - DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION)	YES	SITE 00006 SITE 00012 SITE 00015 SITE 00022

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AR_N60028_000825 CORRESPONDENCE 5	**02-02-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE JANUARY 1998 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00028 SITE 00029
AR_N60028_000826 CORRESPONDENCE 27	**02-05-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) 18 NOVEMBER 1997 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES; AND 2) 16 DECEMBER 1997 FINAL RAB MEETING MINUTES (W/ ENCLOSURES)	YES	SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00011 SITE 00012 SITE 00017 SITE 00024 SITE 00028 SITE 00029 UST 0000270
AR_N60028_000827 CORRESPONDENCE 62	**02-09-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 20 JANUARY 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0000230 SITE 00006 SITE 00008 SITE 00011 SITE 00012 SITE 00027 SITE 00028 SITE 00029

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AR_N60028_000832 MINUTES 47	**02-17-1998**	MARY HILLABRAND, INC.	17 FEBRUARY 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 42	YES	BLDG 0000330 SITE 00006 SITE 00007 SITE 00010 SITE 00012 SITE 00014 SITE 00022 SITE 00024 SITE 00027
AR_N60028_000834 CORRESPONDENCE 5	**03-04-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FEBRUARY 1998 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00028 SITE 00029
AR_N60028_000833 CORRESPONDENCE 15	**03-06-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL 20 JANUARY 1998 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0000230 SITE 00011 SITE 00012 SITE 00027 SITE 00028 SITE 00029
AR_N60028_000835 CORRESPONDENCE 36	**03-10-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 17 FEBRUARY 1998 RESTORATION ADVISORY BOARD (RAB) DRAFT MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00006 SITE 00012 SITE 00027

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AR_N60028_000838 MINUTES 48	**03-17-1998**	MARY HILLABRAND, INC.	17 MARCH 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 43	YES	BLDG 0000083 BLDG 0000205 SITE 00006 SITE 00008 SITE 00011 SITE 00012 SITE 00029
AR_N60028_000840 CORRESPONDENCE 4	**04-02-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE MARCH 1998 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00028 SITE 00029
AR_N60028_000842 CORRESPONDENCE 50	**04-13-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 17 MARCH 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS) [W/ ENCLOSURE]	YES	BLDG 0000083 BLDG 0000205 SITE 00006 SITE 00012
AR_N60028_000848 MINUTES 54	**04-21-1998**	MARY HILLABRAND, INC.	21 APRIL 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 44	YES	SITE 00006 SITE 00012 SITE 00014 SITE 00020 SITE 00022 SITE 00025 UST 0000270

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AR_N60028_000844 CORRESPONDENCE 17	**04-23-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 17 MARCH 1998 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES REMEDIAL INVESTIGATION/FEASIBILITY STUDY (W/ ENCLOSURE)	YES	BLDG 0000083 BLDG 0000205 SITE 00006 SITE 00008 SITE 00011 SITE 00012 SITE 00029
AR_N60028_000847 REPORT 55	**05-06-1998**	TETRA TECH EM, INC.	QUARTERLY GROUNDWATER SAMPLING REPORT, JANUARY 1998 (SEE RECORD # 846 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00011 SITE 00012 SITE 00017 SITE 00024
AR_N60028_000846 CORRESPONDENCE 3	**05-07-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE QUARTERLY GROUNDWATER SAMPLING REPORT, JANUARY 1998 (ENCLOSURE IS RECORD # 847)	YES	SITE 00012 SITE 00017 SITE 00024
AR_N60028_000849 CORRESPONDENCE 28	**05-12-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 21 APRIL 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 44 (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS) [W/ ENCLOSURE]	YES	SITE 00008 SITE 00011 SITE 00012 UST 0000027
AR_N60028_000850 MINUTES 44	**05-19-1998**	MARY HILLABRAND, INC.	19 MAY 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 45	YES	SITE 00008 SITE 00012
AR_N60028_000851 CORRESPONDENCE 15	**05-22-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 21 APRIL 1998 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 44 (W/ ENCLOSURE)	YES	SITE 00012

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AR_N60028_000856 CORRESPONDENCE 46	**06-09-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 19 MAY 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 45 (W/ ENCLOSURE) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	AREA A AREA B AREA C AREA D AREA E AREA G SITE 00008 SITE 00012 SITE 00028 SITE 00029
AR_N60028_000858 MINUTES 45	**06-16-1998**	MARY HILLABRAND, INC.	16 JUNE 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 46	YES	AREA A AREA B AREA C AREA D AREA E AREA F AREA G SITE 00012
AR_N60028_000861 CORRESPONDENCE 3	**07-13-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) DRAFT FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS; AND 2) DRAFT FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF DIOXINS	YES	SITE 00012

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AR_N60028_000864 CORRESPONDENCE 54	**07-13-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 16 JUNE 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 46 (W/ ENCLOSURE) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	AREA A AREA B AREA C AREA D AREA E AREA G SITE 00001 SITE 00003 SITE 00012 SITE 00028
AR_N60028_000893 MINUTES 46	**07-21-1998**	MARY HILLABRAND, INC.	21 JULY 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 47	YES	BLDG 0000001 BLDG 0000002 BLDG 0000108 SITE 00012
AR_N60028_000890 CORRESPONDENCE 2	**07-27-1998**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT DIOXINS FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION (SEE RECORD # 863 - DRAFT FIELD SAMPLING PLAN ADDENDUM)	YES	SITE 00012
AR_N60028_000891 CORRESPONDENCE 3	**07-27-1998**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS AT OLD BUNKER AREA (SEE RECORD # 862 - DRAFT FIELD SAMPLING PLAN ADDENDUM)	YES	SITE 00012

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AR_N60028_000892 CORRESPONDENCE 7	**07-28-1998**	OFFICE OF THE MAYOR - SAN FRANCISCO, CA	REVIEW AND COMMENTS ON THE DRAFT FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF DIOXINS AT OLD BUNKER AREA; AND THE DRAFT FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS AT OLD BUNKER AREA	YES	BLDG 0000307 SITE 00012
AR_N60028_000907 CORRESPONDENCE 3	**08-04-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE JULY 1998 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00011 SITE 00012 SITE 00028 SITE 00029
AR_N60028_000900 REPORT 37	**08-11-1998**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS AT OLD BUNKER AREA	YES	AREA A AREA B AREA C BLDG 0001112 BLDG 0001202 BLDG 0001209 BLDG 0001211 BLDG 0001213 BLDG 0001217 BLDG 0001232 BLDG 0001233 BLDG 0001310 BLDG 0001311 BLDG 0001313 BLDG 0001319 SITE 00012

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AR_N60028_000901 REPORT 24	**08-11-1998**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF DIOXINS AT OLD BUNKER AREA	YES	SITE 00012
AR_N60028_000897 CORRESPONDENCE 40	**08-12-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 21 JULY 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 47 (W/ ENCLOSURE)	YES	AREA C AREA F SITE 00001 SITE 00003 SITE 00012
AR_N60028_000899 CORRESPONDENCE 3	**08-12-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) FINAL FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS AT OLD BUNKER AREA; AND 2) FINAL FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF DIOXINS AT OLD BUNKER AREA	YES	SITE 00012
AR_N60028_000909 CORRESPONDENCE 26	**08-12-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) 19 MAY 1998 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 45; AND 2) 16 JUNE 1998 FINAL RAB MEETING MINUTES, MEETING NO. 46 (W/ ENCLOSURES)	YES	AREA A AREA B AREA C AREA D AREA E AREA G PIER 00021 SITE 00008 SITE 00012 SITE 00028 SITE 00029

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AR_N60028_000902 MINUTES 36	**08-18-1998**	MARY HILLABRAND, INC.	18 AUGUST 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 48	YES	SITE 00001 SITE 00003 SITE 00012

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AR_N60028_000903 CORRESPONDENCE 86	**09-10-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 19 AUGUST 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 48 (W/ ENCLOSURE) [INCLUDES 15 SEPTEMBER 1998 RAB MEETING AGENDA]	YES	PARCEL T-001 PARCEL T-013 PARCEL T-014 PARCEL T-024 PARCEL T-025 PARCEL T-026 PARCEL T-027 PARCEL T-028 PARCEL T-029 PARCEL T-030 PARCEL T-032 PARCEL T-033 PARCEL T-034 PARCEL T-035 PARCEL T-036 PARCEL T-037 PARCEL T-040 PARCEL T-050 PARCEL T-051 PARCEL T-061 PARCEL T-062 PARCEL T-063 PARCEL T-064 PARCEL T-071 PARCEL T-072 PARCEL T-078 PARCEL T-079 PARCEL T-080

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					PARCEL T-106
					PARCEL T-115
					SITE 00001
					SITE 00003
					SITE 00012
					SITE 00028
					SITE 00029

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AR_N60028_000910 CORRESPONDENCE 3	**09-10-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE AUGUST 1998 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00011 SITE 00012 SITE 00028 SITE 00029
AR_N60028_000908 MINUTES 37	**09-15-1998**	MARY HILLABRAND, INC.	15 SEPTEMBER 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 49	YES	BLDG 0000001 BLDG 0000002 BLDG 0000003 SITE 00005 SITE 00012 SITE 00013
AR_N60028_000911 CORRESPONDENCE 3	**10-02-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE SEPTEMBER 1998 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00011 SITE 00012 SITE 00028 SITE 00029
AR_N60028_000914 CORRESPONDENCE 2	**10-09-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE QUARTERLY GROUNDWATER SAMPLING REPORT - MAY 1998 (ENCLOSURE IS RECORD # 915)	YES	SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_000915 REPORT 315	**10-09-1998**	TETRA TECH EM, INC.	QUARTERLY GROUNDWATER SAMPLING REPORT - MAY 1998 (SEE RECORD # 914 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000916 CORRESPONDENCE 38	**10-13-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 15 SEPTEMBER 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS) [W/ ENCLOSURE] {INCLUDES 20 OCTOBER 1998 RAB MEETING AGENDA AND LOCATION MAP}	YES	BLDG 0001207 BLDG 0001209 SITE 00009 SITE 00012
AR_N60028_000917 MINUTES 40	**10-20-1998**	MARY HILLABRAND, INC.	20 OCTOBER 1998 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 50	YES	BLDG 0000001 BLDG 0000221 SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00028 SITE 00029 UST 0000234 UST 0000270

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AR_N60028_000920 MINUTES 46	**11-03-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) 21 JULY 1998 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES; 2) 18 AUGUST 1998 FINAL RAB MEETING MINUTES; AND 3) 15 SEPTEMBER 1998 FINAL RAB MEETING MINUTES (W/ ENCLOSURES)	YES	BLDG 0000227 BLDG 0000257 SITE 00001 SITE 00003 SITE 00009 SITE 00012 SITE 00013 SITE 00028 SITE 00029
AR_N60028_000921 CORRESPONDENCE 3	**11-06-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE OCTOBER 1998 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00011 SITE 00012 SITE 00028 SITE 00029
AR_N60028_000922 CORRESPONDENCE 2	**11-10-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF LEAD IN SOIL IN THE VICINITY OF BUILDINGS, OLD BUNKER AREA (ENCLOSURE IS RECORD # 923)	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_000924 MINUTES 39	**11-10-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 20 OCTOBER 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0000221 SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00028 SITE 00029 UST 0000234 UST 0000270

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AR_N60028_000925 CORRESPONDENCE 41	**11-17-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) TOTAL PETROLEUM HYDROCARBON AND DIOXIN DATA, INITIAL STATISTICAL SUMMARIES AND NOTES; AND 2) TOTAL PETROLEUM HYDROCARBON DATA, ESTIMATED MEAN CONCENTRATIONS (W/ ENCLOSURE)	YES	SITE 00012
AR_N60028_000928 MINUTES 39	**11-17-1998**	MARY HILLABRAND, INC.	17 NOVEMBER 1998 RESTORATION ADVISORY BOARD (RAB) MEETING NO. 51 TRANSCRIPT	YES	BLDG 0000003 BLDG 0000029 BLDG 0000143 BLDG 0000180 BLDG 0000270 BLDG 0001207 BLDG 0001209 BLDG 0001244 SITE 00001 SITE 00003 SITE 00006 SITE 00012 SITE 00024 SITE 00025
AR_N60028_000929 CORRESPONDENCE 3	**12-08-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE NOVEMBER 1998 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00012

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AR_N60028_000930 CORRESPONDENCE 14	**12-14-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 20 OCTOBER 1998 FINAL RESTORATION ADVISORY BOARD (RAB) FINAL MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0000221 SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00028 SITE 00029 UST 0000270
AR_N60028_000942 CORRESPONDENCE 38	**12-21-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 17 NOVEMBER 1998 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	BLDG 0000003 BLDG 0000180 BLDG 0000183 BLDG 0001207 BLDG 0001209 SITE 00001 SITE 00003 SITE 00006 SITE 00012
AR_N60028_000931 CORRESPONDENCE 38	**12-22-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 19 NOVEMBER 1998 TREASURE ISLAND ISSUES RESOLUTION MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00028 SITE 00029

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AR_N60028_000935 REPORT 77	**12-29-1998**	TETRA TECH EM, INC.	QUARTERLY GROUNDWATER SAMPLING REPORT - AUGUST 1998 (SEE RECORD # 934 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00011 SITE 00012 SITE 00017 SITE 00024
AR_N60028_000932 CORRESPONDENCE 3	**12-31-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DECEMBER 1998 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00012
AR_N60028_000934 CORRESPONDENCE 2	**12-31-1998**	NAVFAC - EFA WEST	TRANSMITTAL OF THE QUARTERLY GROUNDWATER SAMPLING REPORT - AUGUST 1998 (ENCLOSURE IS RECORD # 935)	YES	SITE 00012 SITE 00017 SITE 00024
AR_N60028_000937 CORRESPONDENCE 2	**01-12-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) DRAFT SOIL AND GROUNDWATER SAMPLING RESULTS TECHNICAL MEMORANDUM, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS, OLD BUNKER AREA; AND 2) DRAFT TECHNICAL MEMORANDUM, ADDITIONAL DIOXIN CHARACTERIZATION, OLD BUNKER AREA	YES	SITE 00012
AR_N60028_000943 MINUTES 38	**01-19-1999**	MARY HILLABRAND, INC.	19 JANUARY 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 52	YES	BLDG 0000257 SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00014 SITE 00022 SITE 00028 SITE 00029 UST 0000270

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AR_N60028_000944 CORRESPONDENCE 3	**02-03-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE JANUARY 1999 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00012
AR_N60028_000945 CORRESPONDENCE 41	**02-03-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) DRAFT TECHNICAL MEMORANDUM FOR SAMPLING, ANALYSIS, AND DELINEATION OF TOTAL PETROLEUM HYDROCARBON CONTAMINATED SOIL; AND 2) DRAFT HEALTH AND SAFETY PLAN FOR SAMPLING, ANALYSES, AND DELINEATION OF TOTAL PETROLEUM **SEE COMMENTS**	YES	BLDG 0000570 BLDG 0001311 SITE 00012
AR_N60028_000946 CORRESPONDENCE 41	**02-03-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) DRAFT TECHNICAL MEMORANDUM FOR SAMPLING, ANALYSES, AND DELINEATION OF LEAD CONTAMINATED SOIL; AND 2) DRAFT HEALTH AND SAFETY PLAN FOR SAMPLING, ANALYSES, AND DELINEATION OF LEAD CONTAMINATED SOIL (W/ ENCLOSURE 1)	YES	BLDG 0000570 BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_000948 CORRESPONDENCE 2	**02-08-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT SOIL AND GROUNDWATER SAMPLING RESULTS TECHNICAL MEMORANDUM, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS, OLD BUNKER AREA	YES	SITE 00012
AR_N60028_000949 CORRESPONDENCE 40	**02-10-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 19 JANUARY 1999 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE) [INCLUDES 16 FEBRUARY 1999 RAB MEETING SCHEDULE]	YES	SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00028 SITE 00029 UST 0000270

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AR_N60028_000958 MINUTES 37	**02-16-1999**	MARY HILLABRAND, INC.	16 FEBRUARY 1999 RESTORATION ADVISORY BOARD (RAB) MEETING NO. 53 TRANSCRIPT	YES	BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00006 SITE 00011 SITE 00012 SITE 00015 SITE 00021 SITE 00024 SITE 00025 UST 0000227 UST 0000270
AR_N60028_000950 CORRESPONDENCE 3	**02-18-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) DRAFT CORRECTIVE ACTION PLAN FOR TIME-CRITICAL REMOVAL ACTION OF PETROLEUM HYDROCARBON-CONTAMINATED SOIL; AND 2) DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL	YES	SITE 00012
AR_N60028_000968 REPORT 111	**03-01-1999**	IT CORPORATION	FINAL TECHNICAL MEMORANDUM SAMPLING PLAN AND HEALTH AND SAFETY PLAN, DELINEATION SAMPLING, TOTAL PETROLEUM HYDROCARBONS CONTAMINATED SOIL REMOVAL ACTION	YES	BLDG 0001311 SITE 00012
AR_N60028_000969 REPORT 97	**03-01-1999**	IT CORPORATION	FINAL TECHNICAL MEMORANDUM SAMPLING PLAN AND HEALTH AND SAFETY PLAN, DELINEATION SAMPLING, LEAD CONTAMINATED SOIL REMOVAL ACTION (SEE RECORD # 967 - NAVFAC EFAW TRANSMITTAL LETTER; AND RECORD # 1008 - TECHNICAL MEMORANDUM SAMPLING PLAN, ADDENDUM 1)	YES	BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00012

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AR_N60028_000964 CORRESPONDENCE 3	**03-04-1999**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM, TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (SEE RECORD # 951 - DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM)	YES	SITE 00012
AR_N60028_000965 CORRESPONDENCE 3	**03-04-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FEBRUARY 1999 REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00012
AR_N60028_000967 CORRESPONDENCE 3	**03-05-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) FINAL TECHNICAL MEMORANDUM SAMPLING PLAN AND HEALTH AND SAFETY PLAN, DELINEATION SAMPLING, TOTAL PETROLEUM HYDROCARBON CONTAMINATED SOIL REMOVAL ACTION; AND **SEE COMMENTS**	YES	BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00012
AR_N60028_000970 CORRESPONDENCE 48	**03-10-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 16 FEBRUARY 1999 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 53 (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS) [W/ ENCLOSURE]	YES	BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00006 SITE 00012 SITE 00024
AR_N60028_000971 CORRESPONDENCE 2	**03-10-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE FINAL TECHNICAL MEMORANDUM SAMPLING PLAN AND HEALTH AND SAFETY PLAN, DELINEATION SAMPLING, TOTAL PETROLEUM HYDROCARBON CONTAMINATED SOIL REMOVAL ACTION	YES	SITE 00012
AR_N60028_000972 CORRESPONDENCE 2	**03-15-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE REVISED TECHNICAL MEMORANDUM SAMPLING PLAN AND HEALTH AND SAFETY PLAN, DELINEATION SAMPLING, TOTAL PETROLEUM HYDROCARBON CONTAMINATED SOIL	YES	SITE 00012

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AR_N60028_000973 CORRESPONDENCE 4	**03-15-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT CORRECTIVE ACTION PLAN FOR TIME-CRITICAL REMOVAL OF PETROLEUM HYDROCARBON-CONTAMINATED SOIL (INCLUDES COMMENTS BY DTSC)	YES	SITE 00012
AR_N60028_000974 CORRESPONDENCE 2	**03-16-1999**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (SEE RECORD # 951 - DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM)	YES	SITE 00012
AR_N60028_000975 CORRESPONDENCE 2	**03-16-1999**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT CORRECTIVE ACTION PLAN FOR TIME-CRITICAL REMOVAL OF PETROLEUM HYDROCARBON-CONTAMINATED SOIL (SEE RECORD # 952 - DRAFT CORRECTIVE ACTION PLAN)	YES	SITE 00012
AR_N60028_000983 MINUTES 45	**03-16-1999**	MARY HILLABRAND, INC.	16 MARCH 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 54	YES	BLDG 0001207 BLDG 0001209 SITE 00004 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00022 SITE 00025

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AR_N60028_000977 CORRESPONDENCE 6	**03-18-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE REVISED FINAL TECHNICAL MEMORANDUM FOR SAMPLING, ANALYSES, AND DELINEATION OF TOTAL PETROLEUM HYDROCARBON CONTAMINATED SOIL (W/ ENCLOSURE)	YES	BLDG 0001311 SITE 00012
AR_N60028_000980 CORRESPONDENCE 2	**03-19-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE SAN FRANCISCO REDEVELOPMENT AGENCY, OF THE DRAFT CORRECTIVE ACTION PLAN, TIME-CRITICAL REMOVAL OF PETROLEUM HYDROCARBON-CONTAMINATED SOIL (SEE RECORD # 952 - DRAFT CORRECTIVE ACTION PLAN)	YES	BLDG 0001311 SITE 00012
AR_N60028_000984 CORRESPONDENCE 3	**03-29-1999**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT TECHNICAL MEMORANDUM ADDITIONAL DIOXIN CHARACTERIZATION, OLD BUNKER AREA (SEE RECORD # 938 - DRAFT TECHNICAL MEMORANDUM, ADDITIONAL DIOXIN CHARACTERIZATION)	YES	SITE 00012
AR_N60028_000987 CORRESPONDENCE 3	**04-07-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE MARCH 1999 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00004 SITE 00006 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00022 SITE 00025 SITE 00027

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AR_N60028_000988 CORRESPONDENCE 3	**04-08-1999**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DIOXIN CONTAMINATION AT THE FORMER DEBRIS DISPOSAL AREA (DIOXIN CONTAMINATION AT THE FORMER DEBRIS DISPOSAL AREA WAS NOT RECEIVED IN THE RESTORATION RECORDS FILE)	YES	SITE 00012
AR_N60028_000990 CORRESPONDENCE 63	**04-14-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 16 MARCH 1999 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	BLDG 0000062 BLDG 0001207 BLDG 0001209 SITE 00004 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00022 SITE 00024 SITE 00025 UST 0000225A UST 0000225B UST 0000225C UST 0000225D
AR_N60028_000996 CORRESPONDENCE 3	**04-14-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT FINAL CONSTRUCTION OVERSIGHT WORK PLAN FOR TIME-CRITICAL REMOVAL OF LEAD CONTAMINATED SOIL (ENCLOSURE IS RECORD # 997)	YES	SITE 00012

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AR_N60028_002159 CORRESPONDENCE 1	**04-14-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT WORK PLAN; CONTRACTOR QUALITY CONTROL PLAN; HEALTH AND SAFETY PLAN; REMOVAL ACTION OF LEAD CONTAMINATED SOIL, REVISION B (ENCLOSURE IS RECORD # 985)	NO	SITE 00012
AR_N60028_000991 CORRESPONDENCE 2	**04-19-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) FINAL TECHNICAL MEMORANDUM, SOIL AND GROUNDWATER SAMPLING RESULTS, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS, OLD BUNKER AREA; AND 2) FINAL TECHNICAL MEMORANDUM, ADDITIONAL DIOXIN CHARACTERIZATION, OLD BUNKER AREA	YES	SITE 00012
AR_N60028_000992 REPORT 57	**04-19-1999**	TETRA TECH EM, INC.	FINAL TECHNICAL MEMORANDUM, SOIL AND GROUNDWATER SAMPLING RESULTS, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS, OLD BUNKER AREA (SEE RECORD # 991 - NAVFAC EFAW TRANSMITTAL LETTER) [SENSITIVE INFORMATION: STREET LEVEL MAP(S)]	YES	BLDG 0001202 BLDG 0001211 BLDG 0001213 BLDG 0001217 BLDG 0001232 BLDG 0001233 BLDG 0001311 BLDG 0001313 BLDG 0001319 SITE 00012
AR_N60028_000993 REPORT 35	**04-19-1999**	TETRA TECH EM, INC.	FINAL TECHNICAL MEMORANDUM, ADDITIONAL DIOXIN CHARACTERIZATION, OLD BUNKER AREA (SEE RECORD # 991 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00012
AR_N60028_000999 REPORT 27	**04-20-1999**	TETRA TECH EM, INC.	FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (SEE RECORD # 998 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	BLDG 0001207 BLDG 0001209 SITE 00012

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AR_N60028_001000 MINUTES 40	**04-20-1999**	MARY HILLABRAND, INC.	20 APRIL 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 55	YES	BLDG 0000001 BLDG 0001207 BLDG 0001209 SITE 00012 SITE 00013 SITE 00015
AR_N60028_000994 CORRESPONDENCE 3	**04-21-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, MAYOR'S OFFICE, TREASURE ISLAND PROJECT OF THE DRAFT FINAL CONSTRUCTION OVERSIGHT WORK PLAN; AND WORK PLAN, CONTRACTOR QUALITY CONTROL PLAN, HEALTH AND SAFETY PLAN, ** SEE COMMENTS **	YES	SITE 00012
AR_N60028_000998 CORRESPONDENCE 2	**04-26-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (ENCLOSURE IS RECORD # 999)	YES	SITE 00012
AR_N60028_001013 REPORT 33	**05-01-1999**	IT CORPORATION	WORK PLAN, REMOVAL ACTION OF LEAD CONTAMINATED SOIL (SEE RECORD # 1010 - NAVFAC EFAW TRANSMITTAL LETTER; AND RECORD # 1029 - WORK PLAN, REVISION 1)	YES	BLDG 0001207 BLDG 0001209 SITE 00012

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AR_N60028_002160 CORRESPONDENCE 1	**05-07-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT GROUNDWATER STATUS REPORT, SUMMARY OF GROUNDWATER MONITORING FROM JANUARY TO NOVEMBER 1998 (ENCLOSURE IS RECORD # 1005)	NO	SITE 00001 SITE 00004 SITE 00006 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_001002 CORRESPONDENCE 3	**05-11-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE APRIL 1999 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	BLDG 0001207 BLDG 0001209 OU 0000012 SITE 00004 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00022 SITE 00025
AR_N60028_001007 CORRESPONDENCE 34	**05-12-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 20 APRIL 1999 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURES) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	BLDG 0000452 BLDG 0000453 BLDG 0001207 BLDG 0001209 BLDG 0001311 OU 0000012 SITE 00005 SITE 00009 SITE 00012 SITE 00015 SITE 00024B SITE 00025

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AR_N60028_001008 CORRESPONDENCE 6	**05-14-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE ADDENDUM 1 TO THE FINAL TECHNICAL MEMORANDUM SAMPLING PLAN, DELINEATION SAMPLING, LEAD CONTAMINATED SOIL REMOVAL ACTION (W/ ENCLOSURE)	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_001009 CORRESPONDENCE 6	**05-14-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE TECHNICAL MEMORANDUM SAMPLING PLAN, DELINEATION SAMPLING, TOTAL PETROLEUM HYDROCARBON CONTAMINATED SOIL REMOVAL ACTION, ADDENDUM 1 (W/ ENCLOSURE)	YES	BLDG 0001311 SITE 00012
AR_N60028_001010 CORRESPONDENCE 4	**05-14-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL; 2) WORK PLAN, FOR REMOVAL ACTION OF LEAD-CONTAMINATED SOIL; AND ** SEE COMMENTS **	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_001011 REPORT 22	**05-14-1999**	TETRA TECH EM, INC.	FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (SEE RECORD # 1010 - NAVFAC EFAW TRANSMITTAL LETTER; AND RECORD # 1023 - REVISED FINAL, REMOVAL SITE EVALUATION AND ACTION MEMORANDUM)	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_001012 REPORT 28	**05-14-1999**	TETRA TECH EM, INC.	FINAL CONSTRUCTION OVERSIGHT WORK PLAN FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (SEE RECORD # 1010 - NAVFAC EFAW TRANSMITTAL LETTER; AND RECORD # 1024 - FINAL CONSTRUCTION OVERSIGHT WORK PLAN)	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_001014 CORRESPONDENCE 5	**05-17-1999**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM, FINAL CONSTRUCTION OVERSIGHT WORK PLAN, AND REMOVAL ACTION WORK PLAN FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL	YES	BLDG 0001207 BLDG 0001209 SITE 00012

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AR_N60028_001028 MINUTES 46	**05-18-1999**	MARY HILLABRAND, INC.	18 MAY 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 56	YES	BLDG 0000570 BLDG 0001311 SITE 00006 SITE 00011 SITE 00012 SITE 00020 SITE 00025
AR_N60028_001015 CORRESPONDENCE 31	**05-21-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, MAYOR'S OFFICE, TREASURE ISLAND PROJECT ON THE FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM, FINAL CONSTRUCTION OVERSIGHT WORK PLAN, AND FINAL REMOVAL ACTION WORK PLAN FOR**	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_001016 CORRESPONDENCE 2	**05-24-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE ADDENDUM 1 TO THE TECHNICAL MEMORANDUM SAMPLING PLAN, DELINEATION SAMPLING, TOTAL PETROLEUM HYDROCARBON CONTAMINATED SOIL (SEE RECORD # 1009 - ADDENDUM 1 TO THE TECHNICAL MEMORANDUM SAMPLING PLAN)	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_001018 CORRESPONDENCE 2	**05-24-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, MAYOR'S OFFICE, TREASURE ISLAND PROJECT,**	YES	SITE 00012
AR_N60028_001019 CORRESPONDENCE 4	**05-24-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, MAYOR'S OFFICE, TREASURE ISLAND PROJECT, ON THE ADDENDUM 1 TO THE FINAL TECHNICAL MEMORANDUM SAMPLING PLAN, DELINEATION SAMPLING, LEAD-CONTAMINATED SOIL REMOVAL ACTION	YES	BLDG 0001207 BLDG 0001209 SITE 00012

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AR_N60028_001020 CORRESPONDENCE 2	**05-24-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL SAMPLING OF DIOXINS, METALS, AND LANDFILL GAS AT DEBRIS DISPOSAL AREA 'A' (ENCLOSURE IS RECORD # 1021)	YES	AREA A SITE 00012
AR_N60028_001022 CORRESPONDENCE 4	**05-28-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) REVISED FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL; 2) WORK PLAN, CONTRACTOR QUALITY CONTROL PLAN, HEALTH AND SAFETY PLAN, REMOVAL ACTION OF **SEE COMMENTS**	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_001023 REPORT 32	**05-28-1999**	TETRA TECH EM, INC.	REVISED FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_001024 REPORT 40	**05-28-1999**	TETRA TECH EM, INC.	REVISED FINAL CONSTRUCTION OVERSIGHT WORK PLAN FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (SEE RECORD # 1022 - NAVFAC EFAW TRANSMITTAL LETTER; AND RECORD # 1012 - FINAL CONSTRUCTION OVERSIGHT WORK PLAN)	YES	BLDG 0001207 BLDG 0001209 SITE 00012
AR_N60028_002161 CORRESPONDENCE 2	**06-01-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT REMEDIAL INVESTIGATION REPORT (ENCLOSURE IS RECORD # 1026)	NO	SITE 00012
AR_N60028_001029 REPORT 271	**06-02-1999**	IT CORPORATION	FINAL WORK PLAN, REVISION 1; CONTRACTOR QUALITY CONTROL PLAN; SITE HEALTH AND SAFETY PLAN, REMOVAL ACTION OF LEAD CONTAMINATED SOIL	YES	BLDG 0000570 BLDG 0001207 BLDG 0001209 SITE 00012

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AR_N60028_002162 CORRESPONDENCE 1	**06-04-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL WORK PLAN, REVISION 1; CONTRACTOR QUALITY CONTROL PLAN; HEALTH AND SAFETY PLAN; REMOVAL ACTION OF LEAD CONTAMINATED SOIL (ENCLOSURE IS RECORD # 1029)	NO	SITE 00012
AR_N60028_001031 CORRESPONDENCE 2	**06-07-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT FINAL CORRECTIVE ACTION PLAN FOR TIME-CRITICAL REMOVAL OF PETROLEUM HYDROCARBON-CONTAMINATED SOIL AND GROUNDWATER REMEDIATION (ENCLOSURE IS RECORD # 1032)	YES	SITE 00012
AR_N60028_001033 CORRESPONDENCE 2	**06-07-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL SAMPLING OF DIOXINS, METALS, AND LANDFILL GAS AT DEBRIS DISPOSAL AREA 'A' (ENCLOSURE IS RECORD # 1034)	YES	AREA A SITE 00012
AR_N60028_001034 REPORT 36	**06-07-1999**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL SAMPLING OF DIOXINS, METALS, AND LANDFILL GAS AT DEBRIS DISPOSAL AREA 'A'	YES	AREA A SITE 00012
AR_N60028_001035 CORRESPONDENCE 2	**06-08-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT FINAL CORRECTIVE ACTION PLAN FOR TIME-CRITICAL REMOVAL OF PETROLEUM HYDROCARBON-CONTAMINATED SOIL AND GROUNDWATER REMEDIATION (SEE RECORD # 1032 - DRAFT FINAL CORRECTIVE ACTION PLAN)	YES	SITE 00012
AR_N60028_001037 CORRESPONDENCE 3	**06-09-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE MAY 1999 MONTHLY STATUS REPORT, INSTALLATION RESTORATION PROGRAM (W/ ENCLOSURE)	YES	BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00006 SITE 00012

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AR_N60028_001038 CORRESPONDENCE 4	**06-10-1999**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT FINAL CORRECTIVE ACTION PLAN FOR TIME-CRITICAL REMOVAL OF PETROLEUM HYDROCARBON-CONTAMINATED SOIL AND GROUNDWATER REMEDIATION (SEE RECORD # 1032 - DRAFT FINAL CORRECTIVE ACTION PLAN)	YES	SITE 00012
AR_N60028_001039 CORRESPONDENCE 67	**06-11-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 18 MAY 1999 RESTORATION ADVISORY BOARD (RAB) DRAFT MEETING MINUTES (W/ ENCLOSURE) [INCLUDES 15 JUNE 1999 RAB MEETING AGENDA] {DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAP(S)}	YES	BLDG 0000001 SITE 00012
AR_N60028_001040 CORRESPONDENCE 3	**06-14-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, MAYOR'S OFFICE, TREASURE ISLAND PROJECT OF THE DRAFT FINAL CORRECTIVE ACTION PLAN FOR TIME-CRITICAL REMOVAL OF PETROLEUM HYDROCARBON-CONTAMINATED SOIL AND GROUNDWATER REMEDIATION	YES	BLDG 0001311 SITE 00012
AR_N60028_001041 CORRESPONDENCE 2	**06-14-1999**	DTSC - SACRAMENTO, CA	REVIEW AND COMMENTS ON THE FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM; FINAL CONSTRUCTION OVERSIGHT WORK PLAN; AND FINAL REMOVAL ACTION WORK PLAN	YES	BLDG 0001207 BLDG 0001209 SITE 00012

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AR_N60028_001042 MINUTES 28	**06-15-1999**	MARY HILLABRAND, INC.	15 JUNE 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 57	YES	BLDG 0001207 BLDG 0001209 BLDG 0001214 BLDG 0001216 BLDG 0001218 BLDG 0001311 SITE 00001 SITE 00003 SITE 00011 SITE 00012 SITE 00028 SITE 00029

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AR_N60028_001043 CORRESPONDENCE 44	**06-28-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) 16 FEBRUARY 1999 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES; 2) 16 MARCH 1999 FINAL RAB MEETING MINUTES; AND 3) 20 APRIL 1999 FINAL RAB MEETING MINUTES (W/ ENCLOSURES)	YES	BLDG 0000062 BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00004 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 UST 0000180 UST 0000225A UST 0000225B UST 0000225C UST 0000225D UST 0000227 UST 0000270

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AR_N60028_001044 CORRESPONDENCE 2	**06-28-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) DRAFT ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS, LEACHATE FIELD STUDIES TECHNICAL MEMORANDUM, OLD BUNKER AREA; AND ** SEE COMMENTS **	YES	SITE 00012
AR_N60028_001048 CORRESPONDENCE 13	**07-02-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 18 MAY 1999 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00006 SITE 00012 SITE 00020 SITE 00025
AR_N60028_001049 CORRESPONDENCE 3	**07-02-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE JUNE 1999 MONTHLY STATUS REPORT, INSTALLATION RESTORATION PROGRAM (W/ ENCLOSURE)	YES	SITE 00004 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00022 SITE 00025
AR_N60028_001047 CORRESPONDENCE 8	**07-19-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, MAYOR'S OFFICE, TREASURE ISLAND PROJECT OF THE DRAFT REMEDIAL INVESTIGATION REPORT, OPERABLE UNIT (SEE RECORD # 1026 - DRAFT REMEDIAL INVESTIGATION REPORT)	YES	SITE 00012

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AR_N60028_001050 CORRESPONDENCE 2	**07-27-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS, LEACHATE FIELD STUDIES, TECHNICAL MEMORANDUM, OLD BUNKER AREA	YES	SITE 00012
AR_N60028_001053 CORRESPONDENCE 2	**07-30-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, MAYOR'S OFFICE, TREASURE ISLAND PROJECT OF THE DRAFT ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS, FATE AND TRANSPORT MODELING OF TOTAL PETROLEUM ** SEE COMMENTS **	YES	SITE 00012
AR_N60028_001054 CORRESPONDENCE 2	**07-30-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE RESPONSES TO COMMENTS ON THE DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT (ENCLOSURE IS RECORD # 1055)	YES	SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00016 SITE 00017 SITE 00024 SITE 00028 SITE 00029

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AR_N60028_001055 CORRESPONDENCE 111	**07-30-1999**	TETRA TECH EM, INC.	RESPONSES TO COMMENTS ON THE DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT (SEE RECORD # 1054 - NAVFAC EFAW TRANSMITTAL LETTER; AND RECORDS # 805, # 806, # 811, AND # 818 - REVIEW AND COMMENTS ON THE DRAFT FINAL ONSHORE REMEDIAL INVESTIGATION REPORT)	YES	BLDG 0000003 BLDG 0000099 SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00016 SITE 00017 SITE 00024 SITE 00028 SITE 00029 UST 0000270
AR_N60028_001056 CORRESPONDENCE 3	**08-04-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE JULY 1999 MONTHLY STATUS REPORT, INSTALLATION RESTORATION PROGRAM (W/ ENCLOSURE)	YES	SITE 00006 SITE 00012
AR_N60028_001058 CORRESPONDENCE 14	**08-04-1999**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT OPERABLE UNIT (SEE RECORD # 1026 - DRAFT REMEDIAL INVESTIGATION REPORT OPERABLE UNIT)	YES	SITE 00012

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AR_N60028_001066 MINUTES 49	**08-04-1999**	MARY HILLABRAND, INC.	04 AUGUST 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 58	YES	BLDG 0000003 BLDG 0001207 BLDG 0001209 BLDG 0001311 BLDG 0001313 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002163 CORRESPONDENCE 1	**08-04-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS, OLD BUNKER AREA (ENCLOSURE IS RECORD # 1057)	NO	SITE 00012
AR_N60028_001059 CORRESPONDENCE 2	**08-10-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, MAYOR'S OFFICE, TREASURE ISLAND PROJECT OF THE FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS	YES	BLDG 0001311 BLDG 0001313 SITE 00012
AR_N60028_001060 CORRESPONDENCE 2	**08-10-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS (SEE RECORD # 1057 - FIELD SAMPLING PLAN ADDENDUM)	YES	BLDG 0001311 BLDG 0001313 SITE 00012
AR_N60028_001067 CORRESPONDENCE 6	**09-01-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT OPERABLE UNIT REMEDIAL INVESTIGATION (SEE RECORD # 1026 - DRAFT OPERABLE UNIT REMEDIAL INVESTIGATION)	YES	BLDG 0001311 BLDG 0001313 SITE 00012

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AR_N60028_001072 CORRESPONDENCE 38	**09-17-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 04 AUGUST 1999 DRAFT RESTORATION ADVISORY BOARD (RAB) DRAFT MEETING NO. 58 MINUTES (W/ ENCLOSURE) [INCLUDES COMMENTS BY TREASURE ISLAND RESTORATION ADVISORY BOARD ON THE DRAFT REMEDIAL INVESTIGATION REPORT FOR SITE 12]	YES	BLDG 0001133 BLDG 0001207 BLDG 0001209 BLDG 0001311 BLDG 0001313 OU 0000012 SITE 00012 SITE 00021 SITE 00024
AR_N60028_001073 CORRESPONDENCE 4	**09-21-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT TECHNICAL MEMORANDUM ON THE FATE AND TRANSPORT MODELING OF TOTAL PETROLEUM HYDROCARBONS (SEE RECORD # 1046 - DRAFT TECHNICAL MEMORANDUM ON THE FATE AND TRANSPORT MODELING OF TOTAL PETROLEUM HYDROCARBONS)	YES	SITE 00012
AR_N60028_001074 MINUTES 30	**09-21-1999**	MARY HILLABRAND, INC.	21 SEPTEMBER 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 59	YES	BLDG 0001133 BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00012
AR_N60028_001075 CORRESPONDENCE 3	**10-01-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (ENCLOSURE IS RECORD # 1076)	YES	BLDG 0001133 SITE 00012

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AR_N60028_000018 CORRESPONDENCE 10	**10-05-1999**	DTSC - BERKELEY, CA	AREAS AND/OR ISSUES IN NEED OF FURTHER EVALUATION	YES	BLDG 0001133 BLDG 0001202 BLDG 0001205 BLDG 0001207 BLDG 0001209 BLDG 0001217 BLDG 0001218 BLDG 0001219 BLDG 0001228 BLDG 0001231 BLDG 0001232 BLDG 0001233 BLDG 0001244 SITE 00012
AR_N60028_001077 CORRESPONDENCE 2	**10-06-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) DRAFT FIELD SAMPLING PLAN ADDENDUM, SITE INVESTIGATION OF THE FORMER STORAGE YARD; AND 2) DRAFT FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL INVESTIGATIONS IN THE VICINITY OF BUILDINGS	YES	BLDG 0001202 BLDG 0001217 BLDG 0001228 BLDG 0001230 SITE 00012
AR_N60028_001080 CORRESPONDENCE 14	**10-07-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 1) SEPTEMBER 1999 MONTHLY STATUS REPORT; AND 2) 04 AUGUST 1999 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING NO. 58 MINUTES (W/ ENCLOSURES)	YES	BLDG 0001207 BLDG 0001209 BLDG 0001311 BLDG 0001313 OU 0000012 SITE 00012 SITE 00021 SITE 00024

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AR_N60028_001081 CORRESPONDENCE 5	**10-08-1999**	NAVFAC - EFA WEST	RECOMMENDATION FOR THE USE OF MONITORED NATURAL ATTENUATION FOR TOTAL PETROLEUM HYDROCARBON	YES	BLDG 0001311 BLDG 0001313 SITE 00012
AR_N60028_001082 CORRESPONDENCE 2	**10-08-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FIGURE 2 REPLACEMENT FOR THE DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (ENCLOSURE WAS INSERTED IN RECORD # 1076 - DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM)	YES	BLDG 0001133 SITE 00012
AR_N60028_001083 CORRESPONDENCE 3	**10-12-1999**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (SEE RECORD # 1076 - DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM)	YES	BLDG 0001133 SITE 00012
AR_N60028_001084 CORRESPONDENCE 3	**10-13-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT FIELD SAMPLING PLAN ADDENDUM, SITE INVESTIGATION OF THE FORMER STORAGE YARD; AND THE DRAFT FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL INVESTIGATION IN THE VICINITY OF BUILDINGS	YES	BLDG 0001202 BLDG 0001217 BLDG 0001228 BLDG 0001230 SITE 00012
AR_N60028_001085 CORRESPONDENCE 35	**10-14-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT 21 SEPTEMBER 1999 RESTORATION ADVISORY BOARD (RAB) DRAFT MEETING MINUTES, MEETING NO. 60 (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS) [W/ ENCLOSURE]	YES	BLDG 0001133 BLDG 0001207 BLDG 0001209 BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 SITE 00021 SITE 00024

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AR_N60028_001087 REPORT 36	**10-15-1999**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN ADDENDUM, SITE INVESTIGATION OF THE FORMER STORAGE YARD	YES	SITE 00012
AR_N60028_000019 MINUTES 38	**10-19-1999**	MARY HILLABRAND, INC..	19 OCTOBER 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 60	YES	SITE 00001 SITE 00003 SITE 00006 SITE 00012
AR_N60028_001086 CORRESPONDENCE 2	**10-19-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL FIELD SAMPLING PLAN ADDENDUM, SITE INVESTIGATION OF THE FORMER STORAGE YARD (ENCLOSURE IS RECORD # 1087)	YES	SITE 00012
AR_N60028_001092 CORRESPONDENCE 3	**10-19-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, MAYOR'S OFFICE, TREASURE ISLAND PROJECT, OF THE APPENDIX A OF THE DRAFT FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL INVESTIGATION	YES	BLDG 0001202 BLDG 0001217 BLDG 0001228 BLDG 0001230 SITE 00012
AR_N60028_001090 REPORT 53	**10-21-1999**	TETRA TECH EM, INC.	FINAL TECHNICAL MEMORANDUM ON FATE AND TRANSPORT MODELING FOR ADDITIONAL CHARACTERIZATION OF PETROLEUM HYDROCARBONS (SEE RECORD # 1089 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	BLDG 0001211 BLDG 0001213 BLDG 0001311 SITE 00012
AR_N60028_001091 REPORT 28	**10-21-1999**	TETRA TECH EM, INC.	FINAL TECHNICAL MEMORANDUM ON LEACHATE SAMPLING RESULTS FOR ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS (SEE RECORD # 1089 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	SITE 00012

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AR_N60028_001089 CORRESPONDENCE 2	**10-22-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL TECHNICAL MEMORANDA ON 1) LEACHATE SAMPLING RESULTS FOR ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS AND 2) FATE AND TRANSPORT MODELING OF TOTAL PETROLEUM HYDROCARBONS TECHNICAL MEMORANDUM	YES	SITE 00012
AR_N60028_001095 CORRESPONDENCE 3	**10-22-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE PROPOSED MONITORED NATURAL ATTENUATION FOR TOTAL PETROLEUM HYDROCARBON (SEE RECORD # 1081 - RECOMMENDATION FOR THE USE OF MONITORED NATURAL ATTENUATION FOR TOTAL PETROLEUM HYDROCARBON)	YES	BLDG 0001310 BLDG 0001311 BLDG 0001313 SITE 00012
AR_N60028_000025 CORRESPONDENCE 7	**10-27-1999**	CRWQCB - SAN FRANCISCO, CA	REVIEW AND COMMENTS ON THE 1) DRAFT FINAL FIELD SAMPLING AND ANALYSIS PLAN FOR ADDITIONAL SAMPLING AT CORRECTIVE ACTION PLAN SITES; AND	YES	SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00020 SITE 00022 SITE 00025 UST 0000227
AR_N60028_002084 CORRESPONDENCE 2	**10-28-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT FIELD SAMPLING PLAN ADDENDUM FOR INVESTIGATION OF THE ELEMENTARY SCHOOL AREA (ENCLOSURE IS RECORD # 26)	YES	SITE 00012
AR_N60028_000056 CORRESPONDENCE 4	**10-29-1999**	CRWQCB - OAKLAND, CA	DEVELOPMENT OF REMEDIAL DECISIONS FOR AREAS OF DEGRADED GROUNDWATER	YES	SITE 00012

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AR_N60028_000028 REPORT 32	**11-02-1999**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL INVESTIGATION IN THE VICINITY OF BUILDINGS	YES	BLDG 0001202 BLDG 0001217 BLDG 0001228 BLDG 0001230 SITE 00012
AR_N60028_000030 CORRESPONDENCE 2	**11-02-1999**	AMEC GEOMATRIX, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO OF THE DRAFT REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL ACTION OF LEAD-CONTAMINATED SOIL	YES	BLDG 0001125 BLDG 0001133 SITE 00012
AR_N60028_002085 CORRESPONDENCE 2	**11-02-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL INVESTIGATION IN THE VICINITY OF BUILDINGS (ENCLOSURE IS RECORD # 28)	YES	BLDG 0001202 BLDG 0001217 BLDG 0001228 BLDG 0001230 SITE 00012
AR_N60028_000032 CORRESPONDENCE 3	**11-04-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE OCTOBER 1999 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00006 SITE 00012
AR_N60028_000038 CORRESPONDENCE 13	**11-04-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL 21 SEPTEMBER 1999 RESTORATION ADVISORY BOARD (RAB) MEETING NO. 59 MINUTES (W/ ENCLOSURE)	YES	SITE 00012
AR_N60028_000039 CORRESPONDENCE 3	**11-04-1999**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS ON BEHALF OF THE CITY AND COUNTY OF SAN FRANCISCO, ON THE DRAFT FIELD SAMPLING PLAN ADDENDUM FOR INVESTIGATION OF THE ELEMENTARY SCHOOL AREA (SEE RECORD # 26 - DRAFT FIELD SAMPLING PLAN ADDENDUM)	YES	BLDG 0001202 BLDG 0001217 BLDG 0001228 BLDG 0001230 SITE 00012

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AR_N60028_000041 REPORT 20	**11-09-1999**	TETRA TECH EM, INC.	FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (SEE RECORD # 2065 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	BLDG 0001125 BLDG 0001131 BLDG 0001133 BLDG 0001135 SITE 00012
AR_N60028_002065 CORRESPONDENCE 2	**11-09-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL REMOVAL SITE EVALUATION AND ACTION MEMORANDUM FOR TIME-CRITICAL REMOVAL OF LEAD-CONTAMINATED SOIL (ENCLOSURE IS RECORD # 41)	YES	BLDG 0001133 SITE 00012
AR_N60028_000043 REPORT 10	**11-15-1999**	NAVFAC - EFA WEST	FIELD SAMPLING PLAN ADDENDUM 2, ADDITIONAL SAMPLING LOCATIONS FOR THE FORMER STORAGE YARD (SEE RECORD # 1087 - FINAL FIELD SAMPLING PLAN ADDENDUM, SITE INVESTIGATION OF THE FORMER STORAGE YARD)	YES	SITE 00012
AR_N60028_000044 CORRESPONDENCE 2	**11-16-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE FINAL TECHNICAL MEMORANDUM FOR ADDITIONAL CHARACTERIZATION OF TOTAL PETROLEUM HYDROCARBONS (SEE RECORD # 1091 - FINAL TECHNICAL MEMORANDUM)	YES	SITE 00012

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AR_N60028_000055 MINUTES 24	**11-16-1999**	MARY HILLABRAND, INC.	16 NOVEMBER 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT (MEETING NO. 61)	YES	BLDG 0000003 BLDG 0000221 BLDG 0000469 BLDG 0001101 BLDG 0001102 BLDG 0001202 BLDG 0001217 BLDG 0001219 BLDG 0001228 BLDG 0001228A BLDG 0001230 BLDG 0001231 BLDG 0001233 BLDG 0001311 SITE 00012
AR_N60028_000051 REPORT 40	**11-19-1999**	TETRA TECH EM, INC.	TECHNICAL MEMORANDUM, SOIL SAMPLING RESULTS, ADDITIONAL CHARACTERIZATION OF METALS, DIOXINS AND LANDFILL GAS AT DEBRIS DISPOSAL AREA (SEE RECORD # 2066 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	AREA A SITE 00012
AR_N60028_002086 CORRESPONDENCE 2	**11-19-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE DRAFT FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL INVESTIGATION IN THE VICINITY OF BUILDINGS, AND DEBRIS DISPOSAL AREAS (ENCLOSURE IS RECORD # 52)	YES	AREA C AREA D BLDG 0001205 BLDG 0001207 BLDG 0001244 BLDG 0001251 BLDG 0001253 SITE 00012

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AR_N60028_002066 CORRESPONDENCE 2	**11-22-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE TECHNICAL MEMORANDUM, SOIL SAMPLING RESULTS, ADDITIONAL CHARACTERIZATION OF METALS, DIOXINS AND LANDFILL GAS AT DEBRIS DISPOSAL AREA (ENCLOSURE IS RECORD # 51)	YES	SITE 00012
AR_N60028_000057 CORRESPONDENCE 5	**11-23-1999**	CRWQCB - OAKLAND, CA	LETTER DISCUSSING WATER QUALITY ISSUES	YES	SITE 00012
AR_N60028_000072 CORRESPONDENCE 3	**12-01-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL INVESTIGATION DEBRIS DISPOSAL AREA (SEE RECORD # 52 - DRAFT FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL INVESTIGATION DEBRIS DISPOSAL AREA)	YES	BLDG 0001205 BLDG 0001207 BLDG 0001244 BLDG 0001251 BLDG 0001253 SITE 00012
AR_N60028_000063 CORRESPONDENCE 3	**12-08-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE NOVEMBER 1999 MONTHLY STATUS REPORT (W/ ENCLOSURE)	YES	SITE 00006 SITE 00012
AR_N60028_000064 CORRESPONDENCE 11	**12-08-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 19 OCTOBER 1999 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	SITE 00006 SITE 00012 SITE 00021 SITE 00024 WELL 00023 WELL 00024

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AR_N60028_000077 MINUTES 33	**12-10-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE 16 NOVEMBER 1999 DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (W/ ENCLOSURE)	YES	BLDG 0000001 BLDG 0000003 BLDG 0000221 BLDG 0000469 BLDG 0001101 BLDG 0001102 BLDG 0001202 BLDG 0001217 BLDG 0001219 BLDG 0001228 BLDG 0001228A BLDG 0001230 BLDG 0001231 BLDG 0001233 BLDG 0001311 BLDG 0001313 PIER 00011 PIER 00012 SITE 00012 SITE 00021 UST 0000270

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AR_N60028_001101 MINUTES 18	**12-14-1999**	MARY HILLABRAND, INC.	14 DECEMBER 1999 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT, MEETING NO. 62	YES	BLDG 0000001 BLDG 0001205 BLDG 0001207 BLDG 0001209 BLDG 0001231 BLDG 0001233 BLDG 0001244 BLDG 0001251 BLDG 0001253 BLDG 0001307 BLDG 0001309 BLDG 0001311 SITE 00012 UST 0000001G
AR_N60028_000068 CORRESPONDENCE 9	**12-15-1999**	NAVFAC - EFA WEST	FIELD SAMPLING PLAN ADDENDUM 3, ADDITIONAL SAMPLING LOCATIONS FOR THE FORMER STORAGE YARD (SEE RECORD # 1087 - FINAL FIELD SAMPLING PLAN ADDENDUM, SITE INVESTIGATION OF THE FORMER STORAGE YARD)	YES	SITE 00012
AR_N60028_000069 REPORT 33	**12-15-1999**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN ADDENDUM FOR INVESTIGATION OF THE ELEMENTARY SCHOOL AREA	YES	SITE 00012
AR_N60028_002087 CORRESPONDENCE 2	**12-15-1999**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL FIELD SAMPLING PLAN ADDENDUM FOR INVESTIGATION OF THE ELEMENTARY SCHOOL AREA (ENCLOSURE IS RECORD # 69)	YES	SITE 00012

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AR_N60028_001099 CORRESPONDENCE 2	**12-20-1999**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE SCOPE OF WORK - REGARDING FIELD SAMPLING PLAN ADDENDUM 3, ADDITIONAL SAMPLING LOCATIONS FOR THE FORMER STORAGE YARD (SEE RECORD # 68 - ADDENDUM 3)	YES	SITE 00012
AR_N60028_001115 REPORT 33	**01-14-2000**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN ADDENDUM FOR ADDITIONAL INVESTIGATION, DEBRIS DISPOSAL AREAS A AND B	YES	BLDG 0001121 BLDG 0001123 BLDG 0001125 BLDG 0001131 BLDG 0001133 BLDG 0001321 OU 0000012 SITE 00012
AR_N60028_001097 CORRESPONDENCE 3	**01-20-2000**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS REGARDING THE PILOT PHASE FIELD SAMPLING PLAN FOR POTENTIAL DEBRIS DISPOSAL AREAS, DATED NOVEMBER 19, 1999 (THE PILOT PHASE FIELD SAMPLING PLAN FOR POTENTIAL DEBRIS DISPOSAL AREAS WAS NOT RECEIVED IN THE RESTORATION RECORDS FILE)	YES	SITE 00012
AR_N60028_002167 CORRESPONDENCE 1	**02-03-2000**	NAVFAC - EFA WEST	TRANSMITTAL OF THE FINAL FIELD SAMPLING PLAN ADDENDUM, ADDITIONAL INVESTIGATION OF DEBRIS DISPOSAL AREAS A AND B (ENCLOSURE IS RECORD # 1115)	NO	SITE 00012

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AR_N60028_001111 CORRESPONDENCE 15	**02-08-2000**	NAVFAC - SOUTHWEST	SUMMARY OF RESULTS FROM THE INVESTIGATION OF FIVE AREAS OF CONCERN	YES	BLDG 0001205 BLDG 0001207 BLDG 0001244 BLDG 0001246 BLDG 0001251 BLDG 0001253 OU 0000012 SITE 00012
AR_N60028_001112 CORRESPONDENCE 16	**02-08-2000**	NAVFAC - SOUTHWEST	SUMMARY OF RESULTS FROM THE INVESTIGATION OF THE AREA OF CONCERN	YES	BLDG 0001202 BLDG 0001217 BLDG 0001228 BLDG 0001230 SITE 00012

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AR_N60028_002166 CORRESPONDENCE 1	**02-11-2000**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE 1) DRAFT FIELD SAMPLING PLAN FOR FACILITYWIDE GROUNDWATER MONITORING; AND 2) DRAFT QUALITY ASSURANCE PROJECT PLAN FOR FACILITYWIDE GROUNDWATER MONITORING (ENCLOSURE 1 IS RECORD # 1113 AND ENCLOSURE 2 IS RECORD # 1114)	NO	SITE 00001 SITE 00004 SITE 00006 SITE 00007 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_001103 CORRESPONDENCE 6	**03-10-2000**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT FIELD SAMPLING PLAN AND DRAFT QUALITY ASSURANCE PROJECT PLAN FOR FACILITY-WIDE GROUNDWATER MONITORING (SEE RECORD # 1113 - DRAFT FIELD SAMPLING AND ANALYSIS PLAN; AND RECORD # 1114 - DRAFT QUALITY ASSURANCE PROJECT PLAN)	YES	SITE 00001 SITE 00005 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00022 SITE 00025 WELL 00017-MW-01 WELL 00024-MW-03 WELL MW-03 WELL MW-05 WELL MW-06 WELL MW-07 WELL MW-20 WELL MW-21 WELL MW-22 WELL MW-23 WELL MW-24

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AR_N60028_001117 CORRESPONDENCE 34	**03-28-2000**	TETRA TECH EM, INC.	RESPONSES TO COMMENTS ON THE DRAFT FIELD SAMPLING PLAN AND DRAFT QUALITY ASSURANCE PROJECT PLAN FOR THE FACILITYWIDE GROUNDWATER MONITORING PROGRAM	YES	SITE 00001 SITE 00005 SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00022 SITE 00024 SITE 00025 WELL 00001-MW-01 WELL 00017-MW-01 WELL 00024-MW-03 WELL MW-03 WELL MW-05 WELL MW-06 WELL MW-07 WELL MW-20 WELL MW-21 WELL MW-22 WELL MW-23 WELL MW-24

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AR_N60028_001118 REPORT 138	**04-10-2000**	TETRA TECH EM, INC.	SOIL SAMPLING RESULTS TECHNICAL MEMORANDUM, ADDITIONAL INVESTIGATION OF NORTH POINT AND MASON COURT AREAS AND DEBRIS DISPOSAL (SEE RECORD # 2168 - NAVFAC EFAW TRANSMITTAL LETTER)	YES	AREA B BLDG 0001133 BLDG 0001143 BLDG 0001145 BLDG 0001231 BLDG 0001233 SITE 00012
AR_N60028_002168 CORRESPONDENCE 1	**04-10-2000**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE SOIL SAMPLING RESULTS TECHNICAL MEMORANDUM, ADDITIONAL INVESTIGATION OF NORTH POINT AND MASON COURT AREAS AND DEBRIS DISPOSAL (ENCLOSURE IS RECORD # 1118)	NO	SITE 00012
AR_N60028_000088 MINUTES 11	**04-18-2000**	NAVFAC - SOUTHWEST DIVISION	18 APRIL 2000 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 66	YES	SITE 00012 SITE 00013 SITE 00027

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AR_N60028_001116 MINUTES 41	**04-18-2000**	NAVFAC - SOUTHWEST	18 APRIL 2000 RESTORATION ADVISORY BOARD (RAB) MEETING MATERIALS (INCLUDES AGENDA, 21 MARCH 2000 MEETING MINUTES, AND VARIOUS HANDOUTS)	YES	AREA A AREA B BLDG 0001205 BLDG 0001207 BLDG 0001209 BLDG 0001211 BLDG 0001213 BLDG 0001215 BLDG 0001222 BLDG 0001224 BLDG 0001225 BLDG 0001227 BLDG 0001228 BLDG 0001229 BLDG 0001230 BLDG 0001231 BLDG 0001232 BLDG 0001233 BLDG 0001234 BLDG 0001246 BLDG 0001248 BLDG 0001313 BLDG 0001315 BLDG 0001317 BLDG 0001325 SITE 00011 SITE 00012 UST 0000270

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AR_N60028_000109 MINUTES 74	**05-16-2000**	MARY HILLABRAND, INC.	16 MAY 2000 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT	YES	SITE 00011 SITE 00012 SITE 00013 SITE 00021 SITE 00027
AR_N60028_001122 MINUTES 35	**05-16-2000**	NAVFAC - EFA WEST	16 MAY 2000 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 67 (INCLUDES AGENDA, SIGN-IN SHEET, VARIOUS HANDOUTS, AND 20 JUNE 2000 RAB MEETING AGENDA)	YES	BLDG 0001133 BLDG 0001207 BLDG 0001209 SITE 00011 SITE 00012 SITE 00013 SITE 00021 SITE 00027

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AR_N60028_000650 REPORT 277	**06-01-2000**	IT CORPORATION	FINAL PROJECT PLANS FOR REMOVAL ACTION OF POLYCHLORINATED BIPHENYL (PCB) CONTAMINATED SOIL FOR FORMER STORAGE YARD AND HALYBURTON COURT AREA	YES	BLDG 0000033C BLDG 0000033D BLDG 0000033E BLDG 0000033F BLDG 0001100 BLDG 0001101 BLDG 0001102 BLDG 0001104 BLDG 0001105 BLDG 0001106 BLDG 0001107 BLDG 0001108 BLDG 0001110 BLDG 0001413 SITE 00012
AR_N60028_001120 REPORT 53	**06-02-2000**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN, SOIL GAS INVESTIGATION (SEE RECORD # 2169 - NAVFAC SWDIV TRANSMITTAL LETTER)	YES	BLDG 0001207 BLDG 0001209 BLDG 0001311 SITE 00012
AR_N60028_001121 REPORT 38	**06-02-2000**	TETRA TECH EM, INC.	FINAL QUALITY ASSURANCE PROJECT PLAN ADDENDUM, SOIL GAS INVESTIGATION (SEE RECORD # 2169 - NAVFAC SWDIV TRANSMITTAL LETTER) [THE DRAFT QUALITY ASSURANCE PROJECT PLAN, ADDITIONAL CHARACTERIZATION WAS NOT RECEIVED IN THE RESTORATION RECORD FILE]	YES	SITE 00012

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AR_N60028_002169 CORRESPONDENCE 1	**06-02-2000**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE 1) FINAL FIELD SAMPLING PLAN, SOIL GAS INVESTIGATION; AND 2) FINAL QUALITY ASSURANCE PROJECT PLAN ADDENDUM, SOIL GAS INVESTIGATION (ENCLOSURE 1 IS RECORD # 1120 AND ENCLOSURE 2 IS RECORD # 1121)	NO	SITE 00012
AR_N60028_000105 MINUTES 84	**06-20-2000**	MARY HILLABRAND, INC.	20 JUNE 2000 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT	YES	BLDG 0001107 BLDG 0001108 BLDG 0001109 BLDG 0001110 BLDG 0001111 BLDG 0001124 BLDG 0001133 BLDG 0001207 BLDG 0001209 SITE 00012

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AR_N60028_001123 CORRESPONDENCE 19	**06-30-2000**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE RESPONSES TO COMMENTS ON THE PHASE 2 SAMPLING FOR CORRECTIVE ACTION PLAN SITES (W/ ENCLOSURE)	YES	BLDG 0000225 BLDG 0000461 SITE 00004 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00022 SITE 00025 WELL 00006-MW-01 WELL 00006-MW-03 WELL 00006-MW-05 WELL 00006-MW-08 WELL 00006-MW-11 WELL 00006-MW-17 WELL 00006-MW-18 WELL 00006-MW-21 WELL 00006-MW-22

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					WELL 00012-MW-07 WELL 00014-MW-05 WELL 00022-MW-06 WELL 00022-MW-07 WELL 00143-MW-02
AR_N60028_000078 REPORT 66	**07-05-2000**	TETRA TECH EM, INC.	FINAL CONSTRUCTION OVERSIGHT WORK PLAN FOR THE REMOVAL OF POLYCHLORINATED BIPHENYL (PCB) CONTAMINATED SOIL AT THE FORMER STORAGE YARD AREA OF CONCERN	YES	BLDG 0001100 BLDG 0001101 BLDG 0001102 BLDG 0001104 BLDG 0001106 BLDG 0001107 BLDG 0001108 BLDG 0001110 BLDG 0001413 SITE 00012 SITE 00021

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AR_N60028_000106 MINUTES 94	**07-18-2000**	MARY HILLABRAND, INC.	18 JULY 2000 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES TRANSCRIPT (INCLUDES DISKETTE)	YES	BLDG 0001104 BLDG 0001106 BLDG 0001108 BLDG 0001110 BLDG 0001207 BLDG 0001209 BLDG 0001231 BLDG 0001233 BLDG 0001319 BLDG 0001321 BLDG 0001323 SITE 00012
AR_N60028_002067 CORRESPONDENCE 3	**07-26-2000**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL CONSTRUCTION OVERSIGHT WORK PLAN FOR THE REMOVAL OF POLYCHLORINATED BIPHENYL (PCB) CONTAMINATED SOIL AT THE FORMER STORAGE YARD AREA OF CONCERN (ENCLOSURE IS RECORD # 78)	YES	SITE 00012 SITE 00021
AR_N60028_001140 CORRESPONDENCE 8	**09-18-2000**	NAVFAC - SOUTHWEST	RESPONSES TO WATER BOARD LETTER OF 3 NOVEMBER 1999 REGARDING PROTECTION OF THE SALTWATER AQUATIC BENEFICIAL USES OF SAN FRANCISCO BAY (SEE RECORD # 31 - LETTER)	YES	SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00021 SITE 00022 SITE 00025 UST 0000227

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AR_N60028_000097 REPORT 63	**10-04-2000**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN ADDENDUM INDOOR AMBIENT AIR INVESTIGATION OF THE FORMER STORAGE YARD	YES	BLDG 0001100 BLDG 0001101 BLDG 0001102 BLDG 0001103 BLDG 0001104 BLDG 0001106 BLDG 0001107 BLDG 0001108 BLDG 0001110 BLDG 0001119 BLDG 0001121 BLDG 0001123 BLDG 0001207 BLDG 0001209 BLDG 0001231 BLDG 0001233 BLDG 0001321 BLDG 0001323 SITE 00012
AR_N60028_000098 REPORT 38	**10-04-2000**	TETRA TECH EM, INC.	FINAL QUALITY ASSURANCE PROJECT PLAN ADDENDUM INDOOR AMBIENT AIR INVESTIGATION OF THE FORMER STORAGE YARD	YES	BLDG 0001100 SITE 00012

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AR_N60028_000110 MINUTES 122	**10-17-2000**	MARY HILLABRAND, INC.	17 OCTOBER 2000 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES TRANSCRIPT	YES	BLDG 0000006 BLDG 0000007 BLDG 0000240 BLDG 0001207 BLDG 0001209 BLDG 0001211 SITE 00001 SITE 00003 SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00017 SITE 00021 SITE 00029
AR_N60028_002068 CORRESPONDENCE 2	**10-30-2000**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT SOIL GAS INVESTIGATION RESULTS AND PROPOSED STEP-OUT SAMPLING (ENCLOSURE IS RECORD # 99)	YES	SITE 00012
AR_N60028_002070 CORRESPONDENCE 2	**11-08-2000**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT WORK PLAN, ADDITIONAL OFFSHORE INVESTIGATION (ENCLOSURE IS RECORD # 112)	YES	SITE 00012

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AR_N60028_000114 MINUTES 71	**11-21-2000**	MARY HILLABRAND, INC.	21 NOVEMBER 2000 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES TRANSCRIPT	YES	SITE 00012
AR_N60028_000120 MINUTES 84	**12-19-2000**	MARY HILLABRAND, INC.	19 DECEMBER 2000 RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES TRANSCRIPT	YES	BLDG 0000002 BLDG 0001133 BLDG 0001207 BLDG 0001209 BLDG 0001211 BLDG 0001231 BLDG 0001233 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00022 SITE 00025
AR_N60028_000126 CORRESPONDENCE 41	**01-17-2001**	TETRA TECH EM, INC.	RESPONSES TO COMMENTS ON THE DRAFT WORK PLAN, ADDITIONAL OFFSHORE INVESTIGATION (SEE RECORD # 2102 - NAVFAC SWDIV TRANSMITTAL LETTER, AND RECORD # 112 - DRAFT WORK PLAN, ADDITIONAL OFFSHORE INVESTIGATION)	YES	BLDG 0001231 BLDG 0001233 SITE 00012
AR_N60028_002102 CORRESPONDENCE 1	**01-17-2001**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE RESPONSES TO COMMENTS ON THE DRAFT WORK PLAN, ADDITIONAL OFFSHORE INVESTIGATION (ENCLOSURE IS RECORD # 126)	NO	BLDG 0001231 BLDG 0001233 SITE 00012

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AR_N60028_002079 CORRESPONDENCE 2	**03-02-2001**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT FINAL WORK PLAN AND FIELD SAMPLING PLAN, ADDITIONAL OFFSHORE INVESTIGATION (ENCLOSURE IS RECORD # 133)	YES	SITE 00012
AR_N60028_001227 REPORT 247	**03-15-2001**	IT CORPORATION	FINAL WORK PLAN AREA INTERIM MEASURES TRENCH EXPLORATION AND INSTALLING INTERIM COVER OLD BUNKER STORAGE AREA (INCLUDES FINAL SAMPLING AND ANALYSIS PLAN, FINAL CONTRACTOR QUALITY CONTROL PLAN, AND FINAL SITE HEALTH AND SAFETY PLAN)	YES	BLDG 0001207 BLDG 0001213 BLDG 0001229 BLDG 0001235 BLDG 0001236 BLDG 0001237 BLDG 0001317 BLDG 0001321 BLDG 0001323 SITE 00012
AR_N60028_000142 REPORT 91	**04-13-2001**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN INSTALLATION AND SAMPLING OF ADDITIONAL GROUNDWATER MONITORING WELLS	YES	BLDG 0001133 SITE 00012

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AR_N60028_000167 REPORT 76	**05-29-2001**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN FOR FACILITYWIDE GROUNDWATER MONITORING	YES	BLDG 0000570 SITE 00001 SITE 00004 SITE 00006 SITE 00009 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 UST 0000180C UST 0000201 UST 0000227 UST 0000368B

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AR_N60028_000168 REPORT 86	**05-29-2001**	TETRA TECH EM, INC.	FINAL QUALITY ASSURANCE PROJECT PLAN ADDENDUM FOR FACILITYWIDE GROUNDWATER MONITORING	YES	BLDG 0000014 BLDG 0000020 BLDG 0000029 BLDG 0000040 BLDG 0000047 BLDG 0000057 BLDG 0000070A BLDG 0000092 BLDG 0000096 BLDG 0000099 BLDG 0000213 BLDG 0000230 BLDG 0000238 BLDG 0000270 SITE 00004 SITE 00005 SITE 00006 SITE 00009 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024

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AR_N60028_002092 CORRESPONDENCE 2	**05-29-2001**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE 1) FINAL FIELD SAMPLING PLAN FOR FACILITYWIDE GROUNDWATER MONITORING, AND 2) FINAL QUALITY ASSURANCE PROJECT PLAN ADDENDUM FOR FACILITYWIDE GROUNDWATER MONITORING (ENCLOSURE 1 IS RECORD # 167 AND ENCLOSURE 2 IS RECORD # 168)	YES	SITE 00001 SITE 00004 SITE 00005 SITE 00006 SITE 00009 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025
AR_N60028_000492 REPORT 97	**05-31-2001**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN FOR ADDITIONAL POLYCHLORINATED BIPHENYL (PCB) INVESTIGATION OF THE FORMER STORAGE YARD (CD COPY ENCLOSED)	YES	BLDG 0001100 BLDG 0001101 BLDG 0001102 BLDG 0001103 BLDG 0001104 BLDG 0001105 BLDG 0001106 BLDG 0001107 BLDG 0001110 SITE 00012

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AR_N60028_002094 CORRESPONDENCE 2	**06-07-2001**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN ADDENDUM, INTERIM MEASURES, TRENCH EXPLORATION AND INSTALLING INTERIM COVER, OLD BUNKER STORAGE AREA (ENCLOSURE IS RECORD # 176)	YES	SITE 00012
AR_N60028_000215 REPORT 37	**06-15-2001**	IT CORPORATION	FINAL FIELD SAMPLING PLAN ADDENDUM INTERIM MEASURES, TRENCH EXPLORATION AND INSTALLING INTERIM COVER, OLD BUNKER STORAGE AREA	YES	BLDG 0001101 BLDG 0001103 BLDG 0001105 BLDG 0001107 BLDG 0001117 BLDG 0001246 BLDG 0001248 BLDG 0001252 BLDG 0001254 BLDG 0001401 BLDG 0001408 BLDG 0001410 BLDG 0001411 BLDG 0001412 BLDG 0001413 SITE 00012
AR_N60028_000255 REPORT 184	**07-17-2001**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN, INVESTIGATION OF VERTICAL EXTENT OF POLYCHLORINATED BIPHENYLS (PCB) AT THE FORMER STORAGE YARD	YES	SITE 00012
AR_N60028_002113 CORRESPONDENCE 1	**09-14-2001**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT TECHNICAL MEMORANDUM, REMEDIAL INVESTIGATION OF OFFSHORE SEDIMENTS, FIELD INVESTIGATION RESULTS (ENCLOSURE IS RECORD # 268)	NO	SITE 00012

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AR_N60028_000647 REPORT 24	**10-16-2001**	TETRA TECH EM, INC.	FINAL TOTAL DISSOLVED AND SUSPENDED SOLIDS ADDENDUM TO THE FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN FOR FACILITYWIDE GROUNDWATER MONITORING	YES	AST 0000103 AST 0000104 SITE 00004 SITE 00006 SITE 00009 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 UST 0000001A UST 0000001E UST 0000180C UST 0000201 UST 0000227 UST 0000368A UST 0000368B

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AR_N60028_000439 REPORT 105	**10-25-2001**	TETRA TECH EM, INC.	ACTION MEMORANDUM TIME-CRITICAL REMOVAL ACTION (SEE RECORD # 2117 - NAVFAC SWDIV TRANSMITTAL LETTER)	YES	BLDG 0001246 BLDG 0001248 BLDG 0001252 BLDG 0001254 BLDG 0001413 SITE 00012
AR_N60028_002117 CORRESPONDENCE 1	**10-25-2001**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE ACTION MEMORANDUM TIME-CRITICAL REMOVAL ACTION (ENCLOSURE IS RECORD # 439)	NO	BLDG 0001246 BLDG 0001248 BLDG 0001252 BLDG 0001254 BLDG 0001413 SITE 00012
AR_N60028_002122 CORRESPONDENCE 1	**11-13-2001**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN ADDENDUM, ADDITIONAL POLYCHLORINATED BIPHENYL (PCB) INVESTIGATION OF THE FORMER STORAGE YARD (ENCLOSURE IS RECORD # 643)	NO	SITE 00012
AR_N60028_000643 REPORT 33	**11-14-2001**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN ADDENDUM, ADDITIONAL POLYCHLORINATED BIPHENYL (PCB) INVESTIGATION OF THE FORMER STORAGE YARD	YES	BLDG 0001100 BLDG 0001103 BLDG 0001105 BLDG 0001107 BLDG 0001123 SITE 00012
AR_N60028_002134 CORRESPONDENCE 1	**02-12-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) SOUTH STORAGE YARD INVESTIGATION (ENCLOSURE IS RECORD # 663)	NO	SITE 00012

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AR_N60028_002137 CORRESPONDENCE 1	**02-13-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN ADDENDUM 2, ADDITIONAL POLYCHLORINATED BIPHENYL (PCB) INVESTIGATION OF THE FORMER STORAGE YARD (ENCLOSURE IS RECORD # 665)	NO	SITE 00012
AR_N60028_000870 REPORT 99	**02-19-2002**	TETRA TECH EM, INC.	FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) SOUTH STORAGE YARD INVESTIGATION	YES	SITE 00012
AR_N60028_002139 CORRESPONDENCE 1	**03-01-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT COMMUNITY RELATIONS PLAN (ENCLOSURE IS RECORD # 667)	NO	SITE 00001 SITE 00003 SITE 00005 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00017 SITE 00021 SITE 00024 SITE 00027 SITE 00029

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AR_N60028_000669 REPORT 32	**03-07-2002**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN ADDENDUM 2, ADDITIONAL POLYCHLORINATED BIPHENYL (PCB) INVESTIGATION OF THE FORMER STORAGE YARD	YES	BLDG 0001100 BLDG 0001101 BLDG 0001102 BLDG 0001103 BLDG 0001104 BLDG 0001105 BLDG 0001107 BLDG 0001110 SITE 00012
AR_N60028_002141 CORRESPONDENCE 1	**03-07-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN ADDENDUM 2, ADDITIONAL POLYCHLORINATED BIPHENYL (PCB) INVESTIGATION OF THE FORMER STORAGE YARD (ENCLOSURE IS RECORD # 669)	NO	SITE 00012
AR_N60028_000874 REPORT 487	**03-27-2002**	TETRA TECH EM, INC.	FINAL INTERIM GROUNDWATER MONITORING REPORT - GROUNDWATER MONITORING FROM MAY TO AUGUST 2001	YES	SITE 00006 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 UST 0000180C UST 0000201 UST 0000227 UST 0000368B

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AR_N60028_000651 REPORT 253	**04-11-2002**	TETRA TECH EM, INC.	FINAL TIDAL MIXING ZONE STUDY TECHNICAL MEMORANDUM, REVISION 2 (INCLUDES REPLACEMENT PAGES CONVERTING THE DRAFT, DATED 02 NOVEMBER 2001, TO FINAL)	YES	SITE 00012 SITE 00021 SITE 00024 WELL 00012-MW-25A-01 WELL 00012-MW-25A-02 WELL 00012-MW-25A-03 WELL 00012-MW-26A-01 WELL 00012-MW-26A-02 WELL 00012-MW-26A-03 WELL 00012-MW-27A-01 WELL 00012-MW-27A-02 WELL 00012-MW-27A-03 WELL 00021-MW-03A WELL 00021-MW-03B WELL 00021-MW-04A WELL 00021-MW-04B WELL 00021-MW-07A-01 WELL 00021-MW-07A-02

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					WELL 00021-MW-07A-03 WELL 00024-MW-01 WELL 00024-MW-09A-01 WELL 00024-MW-09A-02 WELL 00024-MW-09A-03 WELL 00024-MW-10A-01 WELL 00024-MW-10A-02 WELL 00024-MW-10A-03 WELL 00024-MW-11A-01 WELL 00024-MW-11A-02 WELL 00024-MW-11A-03
AR_N60028_002147 CORRESPONDENCE 1	**04-25-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT FIELD ACTIVITY REPORT, TRENCH EXPLORATION AND INSTALLATION OF INTERIM MEASURES, RESIDENTIAL HOUSING AREA (ENCLOSURE IS RECORD # 877)	NO	SITE 00012
AR_N60028_002091 CORRESPONDENCE 4	**04-30-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN), INVESTIGATION OF ELEVATED CONCENTRATIONS OF ARSENIC IN GROUNDWATER (ENCLOSURE IS RECORD # 166)	YES	SITE 00012

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AR_N60028_002148 CORRESPONDENCE 1	**05-01-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE 1) DRAFT FIELD ACTIVITY REPORT, AREA INTERIM MEASURES, TRENCH EXPLORATION, HOMELESS DEVELOPMENT INITIATIVE BUILDINGS; AND ** SEE COMMENTS **	NO	SITE 00012
AR_N60028_000881 REPORT 52	**05-13-2002**	IT CORPORATION	FINAL PROJECT PLAN ADDENDUM, AREA INTERIM MEASURES EXPLORATION (INCLUDES THE QUALITY CONTROL PLAN ADDENDUM, THE SAMPLING AND ANALYSIS PLAN ADDENDUM II, AND THE SITE HEALTH AND SAFETY PLAN ADDENDUM)	YES	PARCEL T-093 PARCEL T-094 SITE 00012

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AR_N60028_000885 REPORT 148	**05-14-2002**	TETRA TECH EM, INC.	FINAL FIELD SAMPLING PLAN FOR THE FACILITYWIDE GROUNDWATER MONITORING PROGRAM (INCLUDES FINAL QUALITY ASSURANCE PROJECT PLAN ADDENDUM FOR THE FACILITYWIDE GROUNDWATER MONITORING PROGRAM)	YES	SITE 00001 SITE 00001A SITE 00001E SITE 00004 SITE 00006 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00180C SITE 00201 SITE 00227 SITE 00368A SITE 00368B SITE D-1B SITE D-4B SITE F-2A SITE F-2B SITE USCG UST 0000001A

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					UST 0000001E UST 0000180C UST 0000201 UST 0000227 UST 0000368A UST 0000368B
AR_N60028_000887 REPORT 318	**06-19-2002**	IT CORPORATION	FINAL FIELD ACTIVITY REPORT, AREA INTERIM MEASURES, TRENCH EXPLORATION AND INSTALLATION OF INTERIM MEASURES, RESIDENTIAL HOUSING AREA (INCLUDES RESPONSE TO COMMENTS ON THE DRAFT)	YES	AREA 01207 AREA 01209 AREA 01231 AREA 01233 AREA A AREA B BLDG 0001205 BLDG 0001207 BLDG 0001213 BLDG 0001222 BLDG 0001224 BLDG 0001229 BLDG 0001235 BLDG 0001236 BLDG 0001237 BLDG 0001317 BLDG 0001321 BLDG 0001323 BLDG 0001325 SITE 00012

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AR_N60028_002155 CORRESPONDENCE 1	**06-19-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL FIELD ACTIVITY REPORT, AREA INTERIM MEASURES, TRENCH EXPLORATION AND INSTALLATION OF INTERIM MEASURES, RESIDENTIAL HOUSING AREA (ENCLOSURE IS RECORD # 887)	NO	SITE 00012
AR_N60028_000888 REPORT 459	**06-20-2002**	IT CORPORATION	FINAL FIELD ACTIVITY REPORT AREA INTERIM MEASURES TRENCH EXPLORATION, HOMELESS DEVELOPMENT INITIATIVE BUILDINGS (INCLUDES RESPONSE TO COMMENTS ON THE DRAFT)	YES	BLDG 0001101 BLDG 0001103 BLDG 0001105 BLDG 0001107 BLDG 0001117 BLDG 0001246 BLDG 0001248 BLDG 0001252 BLDG 0001254 BLDG 0001401 BLDG 0001408 BLDG 0001410 BLDG 0001411 BLDG 0001412 BLDG 0001413 SITE 00012
AR_N60028_002156 CORRESPONDENCE 1	**06-20-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL FIELD ACTIVITY REPORT, AREA INTERIM MEASURES, TRENCH EXPLORATION, HOMELESS DEVELOPMENT INITIATIVE BUILDINGS (ENCLOSURE IS RECORD # 888)	NO	SITE 00012

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AR_N60028_001124 REPORT 210	**07-03-2002**	IT CORPORATION	FINAL PROJECT PLANS FOR TIME-CRITICAL REMOVAL ACTION (INCLUDES THE WORK PLAN; QUALITY CONTROL PLAN; SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN); AND THE SITE HEALTH AND SAFETY PLAN)	YES	PARCEL T-094 SITE 00012
AR_N60028_000166 REPORT 252	**07-11-2002**	TETRA TECH EM, INC.	FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) INVESTIGATION OF ELEVATED CONCENTRATIONS OF ARSENIC IN GROUNDWATER (INCLUDES REPLACEMENT PAGES CONVERTING THE DRAFT, DATED 22 APRIL 2002, TO FINAL)	YES	BLDG 0001311 BLDG 0001313 SITE 00012 WELL 00012-MW-05 WELL 00012-MW-06 WELL 00012-MW-07 WELL 00012-MW-20 WELL 00012-MW-21 WELL 00012-MW-22 WELL 00012-MW-23 WELL 00012-MW-24
AR_N60028_001125 CORRESPONDENCE 4	**07-17-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE REPLACEMENT PAGES CONVERTING THE DRAFT SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) INVESTIGATION OF ELEVATED CONCENTRATIONS OF ARSENIC IN GROUNDWATER TO FINAL	YES	BLDG 0001311 BLDG 0001313 SITE 00012

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AR_N60028_001127 REPORT 24	**07-25-2002**	IT CORPORATION	FINAL SAMPLING AND ANALYSIS PLAN ADDENDUM, TIME-CRITICAL REMOVAL ACTION (INCLUDES FINAL SAMPLING AND ANALYSIS PLAN) [SEE RECORD # 2172 - NAVFAC SWDIV TRANSMITTAL LETTER; AND RECORD # 1124 - FINAL PROJECT PLANS]	YES	PARCEL T-094 SITE 00012
AR_N60028_002175 CORRESPONDENCE 2	**08-29-2002**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT ENVIRONMENTAL CLOSEOUT STRATEGY/SCHEDULES (ENCLOSURE IS RECORD # 1131)	NO	SITE 00001 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_002183 CORRESPONDENCE 1	**02-19-2003**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT GROUNDWATER STATUS REPORT SUMMARY OF GROUNDWATER MONITORING MAY 2001 THROUGH AUGUST 2002 (ENCLOSURE IS RECORD # 1148)	NO	SITE 00001 SITE 00001A SITE 00001E SITE 00004 SITE 00006 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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AR_N60028_001155 REPORT 204	**06-10-2003**	TETRA TECH EM, INC.	FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) FACILITYWIDE GROUNDWATER MONITORING PROGRAM	YES	SITE 00004 SITE 00006 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 UST 0000180C UST 0000201 UST 0000227 UST 0000368B
AR_N60028_002189 CORRESPONDENCE 1	**06-30-2003**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT PROJECT PLANS, HOUSING AREA, SITEWIDE INVESTIGATION (ENCLOSURE IS RECORD # 1157)	NO	SITE 00012
AR_N60028_001163 REPORT 194	**07-28-2003**	SHAW ENVIRONMENTAL, INC.	FINAL PROJECT PLANS FOR HOUSING AREA, SITEWIDE INVESTIGATION (INCLUDES RESPONSE TO COMMENTS ON THE DRAFT PROJECT PLANS) [SEE RECORD # 2194 - NAVFAC SWDIV TRANSMITTAL LETTER]	YES	SITE 00012

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AR_N60028_002194 CORRESPONDENCE 1	**08-01-2003**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL PROJECT PLANS FOR HOUSING AREA, SITEWIDE INVESTIGATION (ENCLOSURE IS RECORD # 1163)	NO	SITE 00012
AR_N60028_001164 REPORT 2062	**08-18-2003**	TETRA TECH EM, INC.	FINAL GROUNDWATER STATUS REPORT SUMMARY OF GROUNDWATER MONITORING MAY 2001 THROUGH AUGUST 2002 (CD COPY OF APPENDICES ENCLOSED)	YES	SITE 00001 SITE 00004 SITE 00006 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 UST 0000001A UST 0000001E UST 0000180C UST 0000201 UST 0000227 UST 0000368B

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AR_N60028_001170 REPORT 18	**09-12-2003**	TETRA TECH EM, INC.	TECHNICAL MEMORANDUM POLYCHLORINATED BIPHENYL (PCB) (SEE RECORD # 2199 - NAVFAC SWDIV TRANSMITTAL LETTER)	YES	BLDG 0000069 BLDG 0000157 BLDG 0001100 BLDG 0001102 BLDG 0001104 BLDG 0001106 BLDG 0001254 SITE 00011 SITE 00012 SITE 00021 SITE 00031
AR_N60028_002199 CORRESPONDENCE 1	**09-12-2003**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE TECHNICAL MEMORANDUM POLYCHLORINATED BIPHENYL (PCB) [ENCLOSURE IS RECORD # 1170]	NO	SITE 00011 SITE 00012 SITE 00021 SITE 00031

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AR_N60028_001175 REPORT 263	**12-01-2003**	TETRA TECH EM, INC.	FINAL INTERIM GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING MAY THROUGH AUGUST 2003 (CD COPY ENCLOSED) [SEE RECORD # 2202 - NAVFAC SWDIV TRANSMITTAL LETTER]	YES	BLDG 0000099 BLDG 0000570 BLDG 0001133 BLDG 0001246 BLDG 0001311 BLDG 0001313 SITE 00011 SITE 00012 SITE 00021 SITE 00024 UST 0000204A UST 0000204B UST 0000204C UST 0000204D UST 0000267
AR_N60028_002202 CORRESPONDENCE 1	**12-19-2003**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL INTERIM GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING MAY THROUGH AUGUST 2003 (ENCLOSURE IS RECORD # 1175)	NO	SITE 00011 SITE 00012 SITE 00021 SITE 00024
AR_N60028_001199 REPORT 184	**05-01-2004**	SULLIVAN CONSULTING GROUP, INC.	FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) FACILITYWIDE GROUNDWATER MONITORING PROGRAM	YES	SITE 00011 SITE 00012 SITE 00021 SITE 00024

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AR_N60028_001212 REPORT 1000	**05-01-2004**	SULLIVAN INTERNATIONAL GROUP, INC.	FINAL GROUNDWATER STATUS REPORT SUMMARY OF GROUNDWATER MONITORING FOR MAY THROUGH DECEMBER 2003 (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS) [CD COPY ENCLOSED] {SEE RECORD # 2224 - NAVFAC SWDIV TRANSMITTAL LETTER}	YES	BLDG 0000099 BLDG 0001231 BLDG 0001233 BLDG 0001254 BLDG 0001311 BLDG 0001313 SITE 00011 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002215 CORRESPONDENCE 3	**05-14-2004**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) FACILITYWIDE GROUNDWATER MONITORING PROGRAM (ENCLOSURE IS RECORD # 1199)	NO	SITE 00011 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002224 CORRESPONDENCE 3	**05-14-2004**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL GROUNDWATER STATUS REPORT SUMMARY OF GROUNDWATER MONITORING FOR MAY THROUGH DECEMBER 2003 (ENCLOSURE IS RECORD # 1212)	NO	SITE 00011 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002223 CORRESPONDENCE 1	**06-29-2004**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT DATA SUMMARY REPORT, HOUSING AREA, SITEWIDE INVESTIGATION (ENCLOSURE IS RECORD # 1211)	NO	SITE 00012

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AR_N60028_001219 REPORT 3925	**09-09-2004**	SHAW ENVIRONMENTAL, INC.	FINAL DATA SUMMARY REPORT SITEWIDE INVESTIGATION (CD COPY ENCLOSED) [SEE RECORD # 2230 - NAVFAC SWDIV TRANSMITTAL LETTER]	YES	BLDG 0001126 BLDG 0001133 BLDG 0001203 BLDG 0001207 BLDG 0001209 BLDG 0001219 BLDG 0001222 BLDG 0001311 BLDG 0001313 BLDG 0001436 SITE 00012
AR_N60028_002230 CORRESPONDENCE 2	**09-09-2004**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE FINAL DATA SUMMARY REPORT, HOUSING AREA, SITEWIDE INVESTIGATION (ENCLOSURE IS RECORD # 1219)	NO	SITE 00012
AR_N60028_002239 CORRESPONDENCE 2	**10-26-2004**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT TECHNICAL MEMORANDUM INVESTIGATION OF ARSENIC IN GROUNDWATER (ENCLOSURE IS RECORD # 1236)	NO	SITE 00012
AR_N60028_001253 REPORT 181	**01-01-2005**	SULTECH	FINAL TECHNICAL MEMORANDUM INVESTIGATION OF ARSENIC IN GROUNDWATER (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS) [SEE RECORD # 2251 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	BLDG 0001311 BLDG 0001313 SITE 00012
AR_N60028_001538 CORRESPONDENCE 24	**01-05-2005**	BRAC PMO WEST	TRANSMITTAL OF THE RESPONSE TO COMMENTS ON THE FINAL TECHNICAL MEMORANDUM SUMMARY OF SOIL GAS INVESTIGATION (W/ ENCLOSURE)	YES	SITE 00012

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AR_N60028_002251 CORRESPONDENCE 3	**01-11-2005**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL TECHNICAL MEMORANDUM INVESTIGATION OF ARSENIC IN GROUNDWATER (ENCLOSURE IS RECORD # 1253)	NO	SITE 00012
AR_N60028_002254 CORRESPONDENCE 1	**02-10-2005**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT SUMMARY AND RECOMMENDATIONS FOR GROUNDWATER MONITORING (ENCLOSURE IS RECORD # 1259)	NO	SITE 00012 SITE 00021 SITE 00024
AR_N60028_002258 CORRESPONDENCE 2	**03-24-2005**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL GROUNDWATER STATUS REPORT SUMMARY OF GROUNDWATER MONITORING FOR MAY AND OCTOBER 2004 (ENCLOSURE IS RECORD # 1269)	NO	SITE 00012 SITE 00021 SITE 00024
AR_N60028_001269 REPORT 822	**03-31-2005**	SULTECH	FINAL GROUNDWATER STATUS REPORT SUMMARY OF GROUNDWATER MONITORING FOR MAY AND OCTOBER 2004 (CD COPY ENCLOSED) [SEE RECORD # 2258 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	BLDG 0000099 BLDG 0001254 BLDG 0001311 BLDG 0001313 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002260 CORRESPONDENCE 1	**05-09-2005**	NAVFAC - SOUTHWEST DIVISION	TRANSMITTAL OF THE DRAFT REMEDIAL INVESTIGATION REPORT WORK PLAN (ENCLOSURE IS RECORD # 1272)	NO	SITE 00012
AR_N60028_001299 REPORT 64	**08-16-2005**	SULTECH	FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) ADDENDUM 3, ADDITIONAL POLYCHLORINATED BIPHENYL (PCB) INVESTIGATION OF THE FORMER STORAGE YARD (CD COPY OF ATTACHMENT 1 ENCLOSED)	YES	BLDG 0001100 BLDG 0001102 BLDG 0001104 BLDG 0001106 SITE 00012

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AR_N60028_002274 CORRESPONDENCE 2	**08-22-2005**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) ADDENDUM 3, ADDITIONAL POLYCHLORINATED BIPHENYL (PCB) INVESTIGATION OF THE FORMER STORAGE YARD (ENCLOSURE IS RECORD # 1299)	NO	SITE 00012
AR_N60028_001300 REPORT 6	**11-02-2005**	SHAW ENVIRONMENTAL, INC.	FINAL TECHNICAL MEMORANDUM FOR RADIOLOGICAL FIELD SCREENING	YES	SITE 00012
AR_N60028_001320 REPORT 3121	**02-01-2006**	WESTON SOLUTIONS, INC.	FINAL HISTORICAL RADIOLOGICAL ASSESSMENT (INCLUDES CD COPY) [SEE RECORD # 1321 - BRAC PMO WEST TRANSMITTAL LETTER; AND RECORD # 2017 - INTERNAL FINAL HISTORICAL RADIOLOGICAL ASSESSMENT SUPPLEMENTAL TECHNICAL MEMORANDUM]	YES	BLDG 0000003 BLDG 0000007 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 PIER 00013 PIER 00021 SITE 00012
AR_N60028_001363 CORRESPONDENCE 2	**03-15-2006**	DTSC - BERKELEY, CA	REVIEW AND CONCURRENCE ON THE FINAL HISTORICAL RADIOLOGICAL ASSESSMENT (SEE RECORD # 1320 - FINAL HISTORICAL RADIOLOGICAL ASSESSMENT)	YES	SITE 00012

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AR_N60028_001343 REPORT 377	**04-11-2006**	SULTECH	FINAL REMEDIAL INVESTIGATION REPORT WORK PLAN, OLD BUNKER AREA [CD COPY ENCLOSED] (SEE RECORD # 1344 - BRAC PMO WEST TRANSMITTAL LETTER)	YES	BLDG 0001100 BLDG 0001102 BLDG 0001104 BLDG 0001106 SITE 00012
AR_N60028_001344 CORRESPONDENCE 3	**04-11-2006**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL REMEDIAL INVESTIGATION REPORT WORK PLAN, OLD BUNKER AREA (ENCLOSURE IS RECORD #1343)	YES	SITE 00012
AR_N60028_001360 CORRESPONDENCE 4	**05-12-2006**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT SAMPLING AND ANALYSIS PLAN ADDENDUM 02 (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) FACILITYWIDE GROUNDWATER MONITORING PROGRAM (ENCLOSURE IS RECORD # 1359)	YES	SITE 00012
AR_N60028_002282 CORRESPONDENCE 10	**05-22-2006**	TETRA TECH EM, INC.	TRANSMITTAL OF THE COMPARISON OF HABITAT ON TREASURE ISLAND AND YERBA BUENA ISLAND (W/ ENCLOSURE)	NO	SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001361 REPORT 33	**06-06-2006**	PACIFIC TREATMENT ENVIORNMENTAL SERVICES, INC.	FINAL SAMPLING AND ANALYSIS PLAN ADDENDUM 02 (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) FACILITYWIDE GROUNDWATER MONITORING PROGRAM (CD COPY ENCLOSED)	YES	SITE 00006 SITE 00012 SITE 00025

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AR_N60028_001362 CORRESPONDENCE 4	**06-09-2006**	BRAC PMO WEST	TRANSMITTAL OF FINAL SAMPLING AND ANALYSIS PLAN ADDENDUM 02 (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) FACILITYWIDE GROUNDWATER MONITORING PROGRAM (ENCLOSURE IS RECORD # 1361)	YES	SITE 00006 SITE 00012 SITE 00025
AR_N60028_001537 CORRESPONDENCE 4	**06-09-2006**	DTSC - GLENDALE, CA	REVIEW AND COMMENTS ON THE COMPARISON OF HABITAT ON TREASURE ISLAND AND YERBA BUENA ISLAND (SEE RECORD # 2282 - COMPARISON OF HABITAT ON TREASURE ISLAND AND YERBA BUENA ISLAND)	YES	SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001379 CORRESPONDENCE 4	**06-12-2006**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT REVISED ENGINEERING EVALUATION AND COST ANALYSIS SOLID WASTE DISPOSAL AREAS, OLD BUNKER AREA (ENCLOSURE IS RECORD # 1380)	YES	SITE 00012
AR_N60028_001381 CORRESPONDENCE 3	**07-12-2006**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT REVISED ENGINEERING EVALUATION AND COST ANALYSIS, SOLID WASTE DISPOSAL AREAS (SEE RECORD # 1380 - DRAFT REVISED ENGINEERING EVALUATION AND COST ANALYSIS, SOLID WASTE DISPOSAL AREAS)	YES	SITE 00012
AR_N60028_001415 CORRESPONDENCE 13	**07-17-2006**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE REVISED ENGINEERING EVALUATION AND COST ANALYSIS SOLID WASTE DISPOSAL AREAS, OLD BUNKER AREA (SEE RECORD # 1380 - DRAFT REVISED ENGINEERING EVALUATION AND COST ANALYSIS SOLID WASTE DISPOSAL AREAS, OLD BUNKER AREA)	YES	SITE 00012

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AR_N60028_001382 CORRESPONDENCE 3	**07-21-2006**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT REVISED ENGINEERING EVALUATION AND COST ANALYSIS, SOLID WASTE DISPOSAL AREAS, OLD BUNKER STORAGE AREA (SEE RECORD # 1380 - DRAFT REVISED ENGINEERING EVALUATION AND COST ANALYSIS, SOLID WASTE DISPOSAL AREAS)	YES	SITE 00012
AR_N60028_001377 CORRESPONDENCE 2	**08-14-2006**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT (ENCLOSURE IS RECORD # 1378)	YES	SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001860 CORRESPONDENCE 6	**09-22-2006**	DTSC - GLENDALE, CA	REVIEW AND COMMENTS ON THE DRAFT SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT (SEE RECORD # 1378 - DRAFT SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT)	YES	SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001390 CORRESPONDENCE 2	**10-12-2006**	BRAC PMO WEST	TRANSMITTAL OF THE REVISED ENGINEERING EVALUATION AND COST ANALYSIS SOLID WASTE DISPOSAL AREAS, OLD BUNKER STORAGE AREA (ENCLOSURE IS RECORD # 1391)	YES	SITE 00012

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AR_N60028_001391 REPORT 184	**10-12-2006**	SULTECH	REVISED ENGINEERING EVALUATION AND COST ANALYSIS SOLID WASTE DISPOSAL AREAS, OLD BUNKER STORAGE AREA (SEE RECORD # 1390 - BRAC PMO WEST TRANSMITTAL LETTER AND # 1130 - DRAFT ENGINEERING EVALUATION AND COST ANALYSIS)	YES	SITE 00012
AR_N60028_001594 MINUTES 61	**10-17-2006**	TETRA TECH EM, INC.	17 OCTOBER 2006 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 126) [INCLUDES VARIOUS HANDOUTS AND CD COPY]	YES	BLDG 0000099 BLDG 0000271 BLDG 0000445 BLDG 0000462 BLDG 0000463 BLDG 0001311 PARCEL T-111 PARCEL T-115 SITE 00009 SITE 00010 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001394 CORRESPONDENCE 3	**11-08-2006**	BRAC PMO WEST	TRANSMITTAL OF THE PRE-DRAFT ACTION MEMORANDUM/ INTERIM REMEDIAL ACTION PLAN: NON-TIME CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREAS, OLD BUNKER AREA (ENCLOSURE IS RECORD # 1395)	YES	SITE 00012

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AR_N60028_001861 CORRESPONDENCE 2	**11-27-2006**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE PRE-DRAFT ACTION MEMORANDUM/ INTERIM REMEDIAL ACTION PLAN: NON-TIME CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREAS, OLD BUNKER AREA	YES	BLDG 0001211 BLDG 0001213 BLDG 0001235 BLDG 0001237 BLDG 0001325 SITE 00012
AR_N60028_001402 REPORT 123	**11-30-2006**	SHAW ENVIRONMENTAL, INC.	FINAL SITE HEALTH AND SAFETY PLAN, DISSOLVED ARSENIC TREATABILITY STUDY	YES	BLDG 0001311 BLDG 0001313 SITE 00012
AR_N60028_001862 CORRESPONDENCE 1	**12-01-2006**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND COMMENTS ON THE PRE-DRAFT ACTION MEMORANDUM/ INTERIM REMEDIAL ACTION PLAN: NON-TIME CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREAS, OLD BUNKER AREA	YES	SITE 00012
AR_N60028_001863 CORRESPONDENCE 7	**12-07-2006**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE PRE-DRAFT ACTION MEMORANDUM/ INTERIM REMEDIAL ACTION PLAN: NON-TIME CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREAS, OLD BUNKER AREA	YES	SITE 00012

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AR_N60028_001595 MINUTES 35	**12-19-2006**	TETRA TECH EM, INC.	19 DECEMBER 2006 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 127) [INCLUDES VARIOUS HANDOUTS AND CD COPY]	YES	BLDG 0000001 BLDG 0000040 BLDG 0000061 BLDG 0000083 BLDG 0000099 BLDG 0000107 BLDG 0000233 BLDG 0000240 BLDG 0000271 BLDG 0000293 BLDG 0000355 BLDG 0000425 BLDG 0000530 BLDG 0000570 BLDG 0001229 BLDG 0001231 BLDG 0001311 BLDG 0001313 BLDG 0001325 SITE 00006 SITE 00008 SITE 00009 SITE 00010 SITE 00012 SITE 00021 SITE 00024 SITE 00025 SITE 00027

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					SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001461 CORRESPONDENCE 3	**12-27-2006**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT ACTION MEMORANDUM / INTERIM REMEDIAL ACTION PLAN: NON -TIME CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREAS OLD BUNKER AREA (ENCLOSURE IS RECORD # 1462)	YES	SITE 00006 SITE 00012 SITE 00025
AR_N60028_001420 CORRESPONDENCE 4	**02-15-2007**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL ACTION MEMORANDUM/INTERIM REMOVAL ACTION PLAN): NON-TIME CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREAS, OLD BUNKER AREA (ENCLOSURE IS RECORD # 1421)	YES	SITE 00012
AR_N60028_001421 REPORT 555	**02-15-2007**	SULTECH	FINAL ACTION MEMORANDUM/INTERIM REMOVAL ACTION PLAN: NON-TIME CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREAS, OLD BUNKER AREA (CD COPY ENCLOSED) [SEE RECORD # 1420 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	SITE 00012

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AR_N60028_001596 MINUTES 42	**02-20-2007**	TETRA TECH EM, INC.	20 FEBRUARY 2007 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 128) [INCLUDES VARIOUS HANDOUTS AND CD COPY]	YES	SITE 00008 SITE 00009 SITE 00010 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031
AR_N60028_001588 REPORT 162	**02-26-2007**	NEW WORLD TECHNOLOGY	FINAL RADIOLOGICAL SAMPLING AND ANALYSIS PLAN FINAL REMEDY REMOVAL ACTION, REVISION 1 (INCLUDES REPLACEMENT PAGES CONVERTING THE DRAFT TO FINAL) [SEE RECORD # 1589 - REVISION 2, AND # 1590 - REVISION 3]	YES	SITE 00012
AR_N60028_001591 REPORT 159	**02-26-2007**	SHAW ENVIRONMENTAL, INC.	FINAL SITE HEALTH AND SAFETY PLAN, FINAL REMEDY REMOVAL ACTION [SEE RECORD # 1592 - RADIATION PROTECTION PLAN (ADDENDUM TO THE HEALTH AND SAFETY PLAN)]	YES	BLDG 0001205 BLDG 0001211 BLDG 0001213 BLDG 0001224 BLDG 0001233 BLDG 0001235 BLDG 0001237 BLDG 0001325 SITE 00012

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AR_N60028_001434 CORRESPONDENCE 3	**03-23-2007**	BRAC PMO WEST	TRANSMITTAL OF FINAL SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT (ENCLOSURE IS RECORD # 1435)	YES	SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001435 REPORT 840	**03-23-2007**	SULTECH	FINAL SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT (SEE RECORD # 1434 - BRAC PMO WEST TRANSMITTAL LETTER)	YES	BLDG 0000040 BLDG 0000092 BLDG 0000107 BLDG 0000502 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001449 CORRESPONDENCE 4	**03-23-2007**	BRAC PMO WEST	TRANSMITTAL OF DRAFT ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING JULY AND NOVEMBER 2006 (ENCLOSURE IS RECORD # 1450)	YES	SITE 00012
AR_N60028_001589 REPORT 69	**04-05-2007**	NEW WORLD TECHNOLOGY	FINAL RADIOLOGICAL SAMPLING AND ANALYSIS PLAN FINAL REMEDY REMOVAL ACTION, REVISION 2 [SEE RECORD # 1588 - REVISION 1, AND # 1590 - REVISION 3]	YES	SITE 00012

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AR_N60028_001866 CORRESPONDENCE 7	**04-05-2007**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE FINAL SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT (INCLUDES HUMAN AND ECOLOGICAL RISK DIVISION COMMENTS, DATED 21 MARCH 2007) [SEE RECORD # 1435 - FINAL SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT]	YES	SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001597 MINUTES 65	**04-17-2007**	TETRA TECH EM, INC.	17 APRIL 2007 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 129) [INCLUDES AGENDA, VARIOUS HANDOUTS AND CD COPY]	YES	BLDG 0000096 BLDG 0000099 BLDG 0000271 BLDG 0001207 BLDG 0001235 BLDG 0001311 BLDG 0001313 SITE 00009 SITE 00010 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00030 SITE 00031

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AR_N60028_001873 CORRESPONDENCE 11	**04-19-2007**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE POINT PAPER FOR REDEFINING SITE BOUNDARIES FOR FORMER FIRE TRAINING SCHOOL(INCLUDES GEOLOGIC SERVICES UNIT COMMENTS, DATED 19 APRIL 2007)	YES	AST 0000248 AST 0000446 BLDG 0000292 BLDG 0000446 BLDG 0000461 BLDG 0000462 BLDG 0000463 SITE 00006 SITE 00006A SITE 00012 SITE 00032 UST 0000240A UST 0000240B UST 0000240C UST 0000240D UST 0000248A UST 0000248B UST 0000248C UST 0000248D UST 0000446 UST M
AR_N60028_001869 CORRESPONDENCE 3	**04-26-2007**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING JULY AND NOVEMBER 2006 (SEE RECORD # 1450 - DRAFT ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING JULY AND NOVEMBER 2006)	YES	SITE 00012

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AR_N60028_001598 MINUTES 32	**06-19-2007**	TETRA TECH EM, INC.	19 JUNE 2007 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 130) [INCLUDES AGENDA, VARIOUS HANDOUTS AND CD COPY]	YES	BLDG 0000001 BLDG 0000003 BLDG 0000180 BLDG 0000233 BLDG 0000240 BLDG 0000271 BLDG 0000343 BLDG 0000344 SITE 00006 SITE 00006A SITE 00008 SITE 00009 SITE 00010 SITE 00012 SITE 00021 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029
AR_N60028_001457 CORRESPONDENCE 14	**06-21-2007**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON DRAFT ANNUAL GROUNDWATER STATUS REPORT FOR JULY AND NOVEMBER 2006	YES	SITE 00012
AR_N60028_001870 CORRESPONDENCE 14	**06-22-2007**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING JULY AND NOVEMBER 2006 (INCLUDES GEOLOGIC SERVICES UNIT COMMENTS, DATED 21 JUNE 2007)	YES	SITE 00012

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AR_N60028_001590 REPORT 260	**07-04-2007**	NEW WORLD TECHNOLOGY	FINAL RADIOLOGICAL SAMPLING AND ANALYSIS PLAN FINAL REMEDY REMOVAL ACTION, REVISION 3 (INCLUDES OPERATING PROCEDURE TM-001-01-20) [SEE RECORD # 1588 - REVISION 1, AND # 1589 - REVISION 2]	YES	SITE 00012
AR_N60028_001465 CORRESPONDENCE 3	**07-09-2007**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL TECHNICAL MEMORANDUM FOR POLYCHLORINATED BIPHENYLS INDOOR AIR AT HALYBURTON COURT (ENCLOSURE IS RECORD # 1466)	YES	BLDG 0001100 BLDG 0001102 BLDG 0001104 BLDG 0001106 SITE 00012
AR_N60028_001466 REPORT 163	**07-10-2007**	SULTECH	FINAL TECHNICAL MEMORANDUM FOR POLYCHLORINATED BIPHENYLS INDOOR AIR AT HALYBURTON COURT INSTALLATION RESTORATION (CD COPY ENCLOSED) [SEE RECORD # 1465 - SWDIV TRANSMITTAL LETTER]	YES	BLDG 0001100 BLDG 0001102 BLDG 0001104 BLDG 0001106 SITE 00012
AR_N60028_001592 REPORT 61	**08-01-2007**	SHAW ENVIRONMENTAL, INC.	RADIATION PROTECTION PLAN (ADDENDUM TO THE HEALTH AND SAFETY PLAN), REMEDIAL ACTION, FINAL REMEDY REMOVAL ACTION (CD COPY ENCLOSED)	YES	SITE 00012
AR_N60028_001871 CORRESPONDENCE 2	**08-10-2007**	GEOMATRIX CONSULTANTS, INC.	REVIEW AND COMMENTS, ON BEHALF OF THE TREASURE ISLAND DEVELOPMENT AUTHORITY, ON THE DRAFT SITE MANAGEMENT PLAN (SEE RECORD # 1452 - DRAFT SITE MANAGEMENT PLAN)	YES	SITE 00005 SITE 00012 SITE 00017 SITE 00024

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AR_N60028_001599 MINUTES 34	**08-21-2007**	TETRA TECH EM, INC.	21 AUGUST 2007 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 131) [INCLUDES AGENDA, VARIOUS HANDOUTS AND CD COPY]	YES	BLDG 0000096 BLDG 0000099 BLDG 0000260 BLDG 0000271 BLDG 0000570 BLDG 0001205 SITE 00006 SITE 00008 SITE 00009 SITE 00010 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00033

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AR_N60028_001600 MINUTES 21	**10-16-2007**	TETRA TECH EM, INC.	16 OCTOBER 2007 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 132) [INCLUDES AGENDA, VARIOUS HANDOUTS AND CD COPY]	YES	BLDG 0000001 BLDG 0000003 BLDG 0000180 BLDG 0000240 BLDG 0000271 BLDG 0001205 BLDG 0001211 BLDG 0001325 SITE 00008 SITE 00012 SITE 00027 SITE 00028 SITE 00029
AR_N60028_001539 CORRESPONDENCE 29	**12-11-2007**	BRAC PMO WEST	TRANSMITTAL OF THE RESPONSE TO COMMENTS ON THE DRAFT ANNUAL GROUNDWATER STATUS REPORT, SUMMARY OF GROUNDWATER MONITORING JULY AND NOVEMBER 2006 (W/ ENCLOSURE) [CD COPY ENCLOSED] {SEE RECORD # 1450 - DRAFT ANNUAL GROUNDWATER STATUS REPORT}	YES	SITE 00012

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AR_N60028_001601 MINUTES 34	**12-18-2007**	TETRA TECH EM, INC.	18 DECEMBER 2007 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 133) [INCLUDES AGENDA, VARIOUS HANDOUTS AND CD COPY]	YES	BLDG 0000099 BLDG 0000233 BLDG 0000343 BLDG 0000344 BLDG 0001311 BLDG 0001313 BLDG 0001325 SITE 00008 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00028 SITE 00029
AR_N60028_001481 CORRESPONDENCE 3	**01-15-2008**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING, JULY AND NOVEMBER 2006 (ENCLOSURE IS RECORD # 1482)	YES	SITE 00012
AR_N60028_001482 REPORT 323	**01-22-2008**	SULLIVAN INTERNATIONAL GROUP, INC.	FINAL ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING, JULY AND NOVEMBER 2006 (CD COPY ENCLOSED) [SEE RECORD # 1481 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	BLDG 0001254 BLDG 0001311 BLDG 0001313 SITE 00012

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AR_N60028_001602 MINUTES 61	**02-05-2008**	TETRA TECH EM, INC.	05 FEBRUARY 2008 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 134) [INCLUDES AGENDA, VARIOUS HANDOUTS AND CD COPY]	YES	BLDG 0000003 BLDG 00000271 BLDG 0000180 BLDG 0000233 BLDG 0000240 BLDG 0000343 BLDG 0000344 SITE 00006A SITE 00008 SITE 00011 SITE 00012 SITE 00021 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029

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AR_N60028_001603 MINUTES 47	**04-15-2008**	TETRA TECH EM, INC.	15 APRIL 2008 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 135) [INCLUDES AGENDA, VARIOUS HANDOUTS AND CD COPY]	YES	BLDG 0000001 BLDG 0000003 BLDG 0000180 BLDG 0000233 BLDG 0000240 BLDG 0000271 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0001211 BLDG 0001213 BLDG 0001319 BLDG 0001321 BLDG 0001323 BLDG 0001325 SITE 00012 SITE 00027 SITE 00031
AR_N60028_001593 REPORT 31	**05-01-2008**	SHAW ENVIRONMENTAL, INC.	RADIATION PROTECTION PLAN (ADDENDUM TO THE HEALTH AND SAFETY PLAN), REMEDIAL ACTION, FINAL REMEDY REMOVAL ACTION, REVISION 1 (CD COPY ENCLOSED) [SEE RECORD # 1592 - RADIATION PROTECTION PLAN (ADDENDUM TO THE HEALTH AND SAFETY PLAN)]	YES	SITE 00012
AR_N60028_001521 CORRESPONDENCE 3	**06-03-2008**	BRAC PMO WEST	TRANSMITTAL OF THE 1) DRAFT SAMPLING ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) TARGETED SOIL GAS INVESTIGATION, 2) FINAL HEALTH AND SAFETY PLAN AND ACCIDENT PREVENTION PLAN, SOIL GAS SAMPLING,	YES	SITE 00012

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AR_N60028_001522 REPORT 131	**06-03-2008**	SULTECH	FINAL HEALTH AND SAFETY PLAN, SOIL GAS SAMPLING (CD COPY ENCLOSED) [SEE RECORD # 1521 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	SITE 00012
AR_N60028_001523 REPORT 178	**06-03-2008**	SULTECH	FINAL ACCIDENT PREVENTION PLAN, SOIL GAS SAMPLING (CD COPY ENCLOSED) [SEE RECORD # 1521 - BRAC PMO WEST TRANSMITTAL LETTER] {DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS}	YES	SITE 00012
AR_N60028_001604 MINUTES 28	**06-17-2008**	TETRA TECH EM, INC.	17 JUNE 2008 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 136) (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	YES	BLDG 0000001 BLDG 0000233 BLDG 0000271 BLDG 0000461 BLDG 0001211 BLDG 0001213 BLDG 0001237 BLDG 0001319 BLDG 0001321 BLDG 0001325 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00025 SITE 00030 SITE 00031 SITE 00032 SITE 00033

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AR_N60028_001846 CORRESPONDENCE 24	**06-19-2008**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN), TARGETED SOIL GAS INVESTIGATION (INCLUDES REVIEW AND COMMENTS BY HUGHES, E. FROM DTSC - BERKELEY, CA)	YES	SITE 00012 SITE 00020
AR_N60028_001526 CORRESPONDENCE 3	**07-03-2008**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING, AUGUST AND NOVEMBER 2007 (ENCLOSURE IS RECORD # 1527)	YES	SITE 00012
AR_N60028_001847 CORRESPONDENCE 3	**08-05-2008**	AMEC GEOMATRIX, INC.	REVIEW AND COMMENTS, ON BEHALF OF THE TREASURE ISLAND DEVELOPMENT AUTHORITY, ON THE DRAFT ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING, AUGUST AND NOVEMBER 2007	YES	SITE 00012 WELL 00012-MW-01 WELL 00012-MW-08 WELL 00012-MW-11 WELL 00012-MW-13 WELL 00012-MW-17 WELL 00012-MW-18 WELL 00012-MW-19 WELL 00012-MW-28 WELL 00012-MW-30 WELL 00012-MW-33

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AR_N60028_001767 MINUTES 31	**08-19-2008**	TETRA TECH EM, INC.	19 AUGUST 2008 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NUMBER 137 [INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY]	YES	BLDG 0000099 BLDG 0001123 BLDG 0001133 SITE 00006 SITE 00008 SITE 00011 SITE 00012 SITE 00021 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001878 CORRESPONDENCE 4	**09-15-2008**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING, AUGUST AND NOVEMBER 2007 (SEE RECORD # 1527 - DRAFT ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING, AUGUST AND NOVEMBER 2007)	YES	SITE 00012
AR_N60028_001546 CORRESPONDENCE 3	**10-03-2008**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) GROUNDWATER MONITORING PROGRAM (ENCLOSURE IS RECORD # 1547)	YES	SITE 00006 SITE 00012

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AR_N60028_001547 REPORT 121	**10-03-2008**	TREVET, INC.	FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) GROUNDWATER MONITORING PROGRAM (CD COPY ENCLOSED) [SEE RECORD # 1546 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012
AR_N60028_001841 CORRESPONDENCE 3	**10-15-2008**	DTSC - BERKELEY, CA	REVIEW AND NO COMMENTS ON THE FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) GROUNDWATER MONITORING PROGRAM	YES	SITE 00006 SITE 00012

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AR_N60028_001888 REPORT 2370	**10-15-2008**	SULTECH	FINAL REMEDIAL INVESTIGATION REPORT FOR FORMER TRAINING AND STORAGE AREA, VOLUMES I THROUGH III OF III (CD COPY ENCLOSED)	YES	BLDG 0000042 BLDG 0000056 BLDG 0000057 BLDG 0000058 BLDG 0000059 BLDG 0000060 BLDG 0000327 BLDG 0000337 BLDG 0000371 BLDG 0000403 BLDG 0000404 BLDG 0000445 BLDG 0000462 BLDG 0000463 PARCEL T-115 SITE 00001 SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00017 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00030 SITE 00031

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					SITE 00032 SITE 00033 SITE 00180C SITE 00201 SITE 00227 SITE 00368A SITE 00368B
AR_N60028_001768 MINUTES 120	**10-21-2008**	TETRA TECH EM, INC.	21 OCTOBER 2008 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING #138 [INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY]	YES	BLDG 0000001 BLDG 0000003 BLDG 0000099 BLDG 0001321 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00025 SITE 00030 SITE 00031 SITE 00033
AR_N60028_001571 REPORT 476	**10-31-2008**	SHAW ENVIRONMENTAL, INC.	FINAL WORK PLAN, STUDY OF THE TREATABILITY OF DISSOLVED ARSENIC AND TOTAL PETROLEUM HYDROCARBONS USING AIR SPARGING AND ENHANCED BIOREMEDIATION TECHNOLOGIES (CD COPY ENCLOSED)	YES	BLDG 0001311 BLDG 0001313 SITE 00012

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AR_N60028_001849 CORRESPONDENCE 3	**11-06-2008**	DTSC - BERKELEY, CA	REVIEW AND NO COMMENTS ON THE FINAL WORK PLAN, STUDY OF THE TREATABILITY OF DISSOLVED ARSENIC AND TOTAL PETROLEUM HYDROCARBONS USING AIR SPARGING AND ENHANCED BIOREMEDIATION TECHNOLOGIES	YES	BLDG 0001311 BLDG 0001313 SITE 00012
AR_N60028_001562 REPORT 354	**11-12-2008**	SULTECH	FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN/QUALITY ASSURANCE PROJECT PLAN) TARGETED SOIL GAS INVESTIGATION (INCLUDES REPLACEMENT PAGES AND CD COPY) [SEE RECORD # 1561 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	SITE 00012
AR_N60028_001573 REPORT 295	**12-01-2008**	SULLIVAN INTERNATIONAL GROUP, INC.	FINAL ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING, AUGUST AND NOVEMBER 2007 (CD COPY ENCLOSED) [SEE RECORD # 1572 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	SITE 00012
AR_N60028_001572 CORRESPONDENCE 3	**12-08-2008**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL ANNUAL GROUNDWATER STATUS REPORT: SUMMARY OF GROUNDWATER MONITORING, AUGUST AND NOVEMBER 2007 (ENCLOSURE IS RECORD # 1573)	YES	SITE 00012

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AR_N60028_001769 MINUTES 46	**12-16-2008**	TETRA TECH EM, INC.	16 DECEMBER 2008 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NUMBER 139 [INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY]	YES	BLDG 0000461 BLDG 0001123 BLDG 0001228 BLDG 0001311 BLDG 0001413 SITE 00006 SITE 00008 SITE 00012 SITE 00024 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00032 SITE 00033

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AR_N60028_001689 MINUTES 40	**02-17-2009**	TETRA TECH EM, INC.	17 FEBRUARY 2009 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 140) [INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY] {DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS}	YES	BLDG 0000003 BLDG 0000233 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000463 BLDG 0001319 BLDG 0001321 BLDG 0001325 SITE 00006 SITE 00008 SITE 00011 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00028 SITE 00029 SITE 00031 SITE 00032 SITE 00033

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AR_N60028_001690 MINUTES 37	**04-21-2009**	TETRA TECH EM, INC.	21 APRIL 2009 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 141) [INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY]	YES	BLDG 0000099 BLDG 0000371 BLDG 0000461 BLDG 0000570 BLDG 0001321 SITE 00006 SITE 00008 SITE 00011 SITE 00012 SITE 00021 SITE 00024 SITE 00029 SITE 00032
AR_N60028_001652 REPORT 112	**05-21-2009**	SHAW ENVIRONMENTAL, INC.	RADIATION PROTECTION PLAN, FINAL REMOVAL ACTION WORK PLAN/REMEDIAL DESIGN (ADDENDUM TO HEALTH AND SAFETY PLAN), REVISION 3 (CD COPY ENCLOSED)	YES	BLDG 0001321A SITE 00006 SITE 00012
AR_N60028_001651 CORRESPONDENCE 3	**06-09-2009**	BRAC PMO WEST	TRANSMITTAL OF THE RADIATION PROTECTION PLAN FINAL REMOVAL ACTION WORK PLAN/REMEDIAL DESIGN (ENCLOSURE IS RECORD #1652)	YES	SITE 00012
AR_N60028_001833 CORRESPONDENCE 3	**06-09-2009**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL TECHNICAL MEMORANDUM FOR SOIL GAS SAMPLING (ENCLOSURE IS RECORD # 1834)	YES	SITE 00012

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AR_N60028_001834 REPORT 79	**06-10-2009**	SULTECH	FINAL TECHNICAL MEMORANDUM FOR SOIL GAS SAMPLING (CD COPY ENCLOSED)	YES	BLDG 0001319 BLDG 0001321 BLDG 0001323 SITE 00012
AR_N60028_001691 MINUTES 45	**06-16-2009**	TETRA TECH EM, INC.	16 JUNE 2009 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 142 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	YES	BLDG 0000099 BLDG 0000461 BLDG 0000463 BLDG 0001235 BLDG 0001237 BLDG 0001311 BLDG 0001313 BLDG 0001319 BLDG 0001321 BLDG 0001323 BLDG 0001325 SITE 00012 SITE 00021 SITE 00024 SITE 00030 SITE 00031 SITE 00032

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AR_N60028_001692 MINUTES 52	**08-18-2009**	TETRA TECH EM, INC.	18 AUGUST 2009 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 143 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	YES	BLDG 0000096 BLDG 0000099 BLDG 0000502 BLDG 0001319 BLDG 0001321 SITE 00006 SITE 00009 SITE 00010 SITE 00012 SITE 00013 SITE 00021 SITE 00024 SITE 00030 SITE 00031 SITE 00032 SITE 00033 UST 0000240 UST 0000248

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AR_N60028_001683 CORRESPONDENCE 3	**09-28-2009**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 1684)	YES	SITE 00001 SITE 00003 SITE 00004 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00026 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033

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AR_N60028_001684 REPORT 149	**09-28-2009**	TETRA TECH EM, INC.	FINAL 2009 SITE MANAGEMENT PLAN (CD COPY ENCLOSED) [SEE RECORD # 1683 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	AST 0000240 AST 0000248 BLDG 0000066 BLDG 0000180 BLDG 0000201 BLDG 0000227 BLDG 0000530 PARCEL T-086 SITE 00001 SITE 00003 SITE 00004 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025

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					UST 0000143A
					UST 0000143B
					UST 0000143C
					UST 0000143D
					UST 0000143E
					UST 0000143F
					UST 0000143G
					UST 0000143H
					UST 0000143I
					UST 0000169
					UST 0000180A
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					UST 0000180C
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					UST 0000248C
					UST 0000248D
					UST 0000270
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AR_N60028_001706 CORRESPONDENCE 5	**10-05-2009**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT WORK PLAN FOR DATA GAPS INVESTIGATION, FORMER FIRE TRAINING SCHOOL (CD COPY ENCLOSED) [SEE RECORD # 1654 - DRAFT WORK PLAN FOR DATA GAPS INVESTIGATION, FORMER FIRE TRAINING SCHOOL]	YES	BLDG 0000236 BLDG 0000238 SITE 00006 SITE 00012 UST 0000248 WELL 00006-MW-18
AR_N60028_001693 MINUTES 47	**10-20-2009**	TETRA TECH EM, INC.	20 OCTOBER 2009 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NO. 144 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	YES	BLDG 0000099 BLDG 0000260 BLDG 0000271 BLDG 0001311 BLDG 0001313 BLDG 0001325 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00028 SITE 00032
AR_N60028_001653 CORRESPONDENCE 3	**10-22-2009**	NAVAL STATION TREASURE ISLAND - SAN FRANCISCO, CA	RESPONSE TO COMMENTS ON THE DRAFT FIELD SAMPLING PLAN ADDENDUM FOR INVESTIGATION OF THE ELEMENTARY SCHOOL AREA (SEE RECORD # 26 - DRAFT FIELD SAMPLING PLAN ADDENDUM FOR INVESTIGATION OF THE ELEMENTARY SCHOOL AREA)	YES	SITE 00012

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AR_N60028_001694 MINUTES 40	**12-15-2009**	TETRA TECH EM, INC.	15 DECEMBER 2009 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES (MEETING NO. 145) [INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY]	YES	BLDG 0000099 BLDG 0000201 BLDG 0000260 BLDG 0000269 BLDG 0000273 BLDG 0000445 BLDG 0001123 BLDG 0001205 BLDG 0001215 BLDG 0001224 BLDG 0001226 BLDG 0001227 BLDG 0001237 BLDG 0001238 BLDG 0001239 BLDG 0001240 BLDG 0001244 BLDG 0001246 BLDG 0001312 BLDG 0001313 SITE 00006 SITE 00008 SITE 00011 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00028

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					SITE 00029 SITE 00030 SITE 00031 SITE 00032 WELL MW-38
AR_N60028_001764 MINUTES 51	**02-16-2010**	TETRA TECH EM, INC.	16 FEBRUARY 2010 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING # 146 [INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY]	YES	BLDG 0000233 BLDG 0001313 BLDG 0001321 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 WELL MW-38
AR_N60028_001670 CORRESPONDENCE 3	**03-01-2010**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2008 ANNUAL GROUNDWATER MONITORING REPORT (ENCLOSURE IS RECORD # 1671)	YES	SITE 00006 SITE 00012

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AR_N60028_001671 REPORT 482	**03-02-2010**	TREVET, INC.	FINAL 2008 ANNUAL GROUNDWATER MONITORING REPORT (CD COPY ENCLOSED) [DOCUMENT ALSO CONTAINS CONFIDENTIAL TRADE SECRETS] {SEE RECORD # 1670 - BRAC PMO WEST TRANSMITTAL LETTER}	YES	BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 WELL 00012-MW-01 WELL 00012-MW-05 WELL 00012-MW-08 WELL 00012-MW-09 WELL 00012-MW-15 WELL 00012-MW-16 WELL 00012-MW-17 WELL 00012-MW-19 WELL 00012-MW-22 WELL 00012-MW-23 WELL 00012-MW-29 WELL 00012-MW-31 WELL 00012-MW-34

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AR_N60028_001685 CORRESPONDENCE 3	**04-19-2010**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2010 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 1686)	YES	SITE 00004 SITE 00006 SITE 00008 SITE 00011 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00032 SITE 00033

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AR_N60028_001765 MINUTES 41	**04-20-2010**	TETRA TECH EM, INC.	20 APRIL 2010 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING # 147 [INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY]	YES	BLDG 0000099 BLDG 0000233 BLDG 0001121 BLDG 0001123 BLDG 0001233 BLDG 0001319 BLDG 0001321 BLDG 0001325 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00030 SITE 00031 SITE 00032

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AR_N60028_001766 MINUTES 50	**06-15-2010**	TETRA TECH EM, INC.	15 JUNE 2010 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING 148 [INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY]	YES	BLDG 0000040 BLDG 0000096 BLDG 0000099 BLDG 0000233 BLDG 0001121 BLDG 0001123 BLDG 0001319 BLDG 0001321 BLDG 0001325 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001750 CORRESPONDENCE 3	**06-24-2010**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2009 ANNUAL GROUNDWATER MONITORING REPORT (ENCLOSURE IS RECORD # 1751)	YES	SITE 00006 SITE 00012

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AR_N60028_001838 CORRESPONDENCE 3	**08-05-2010**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT 2009 ANNUAL GROUNDWATER MONITORING REPORT (SEE RECORD # 1751 - DRAFT 2009 ANNUAL GROUNDWATER MONITORING REPORT)	YES	BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 WELL 00012-MW-20
AR_N60028_001747 MINUTES 55	**08-17-2010**	TETRA TECH EM, INC.	17 AUGUST 2010 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING # 149 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	YES	BLDG 0000099 BLDG 0000233 BLDG 0000461 BLDG 0001123 BLDG 0001254 BLDG 0001319 BLDG 0001321 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00025 SITE 00031 SITE 00033

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AR_N60028_001792 REPORT 2973	**08-19-2010**	CHADUX - TT, JOINT VENTURE	FINAL TECHNICAL MEMORANDUM HUMAN HEALTH RISK EVALUATION FOR SOIL AND RESIDENTIAL BACKYARD EVALUATION (CD COPY ENCLOSED)	YES	BLDG 0001100 BLDG 0001101 BLDG 0001102 BLDG 0001103 BLDG 0001105 BLDG 0001107 BLDG 0001108 BLDG 0001109 BLDG 0001110 BLDG 0001111 BLDG 0001112 BLDG 0001113 BLDG 0001114 BLDG 0001115 BLDG 0001116 BLDG 0001117 BLDG 0001118 BLDG 0001119 BLDG 0001120 BLDG 0001122 BLDG 0001124 BLDG 0001125 BLDG 0001126 BLDG 0001127 BLDG 0001128 BLDG 0001129 BLDG 0001131 BLDG 0001135

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AR_N60028_001791 CORRESPONDENCE 3	**08-20-2010**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL TECHNICAL MEMORANDUM HUMAN HEALTH RISK EVALUATION FOR SOIL AND RESIDENTIAL BACKYARD EVALUATION (ENCLOSURE IS RECORD # 1792)	YES	SITE 00012
AR_N60028_001707 CORRESPONDENCE 29	**09-28-2010**	ENGINEERING/REMEDIATION RESOURCES GROUP, INC.	RESPONSES TO COMMENTS ON THE DRAFT WORK PLAN FOR DATA GAPS INVESTIGATION, FORMER FIRE TRAINING SCHOOL	YES	BLDG 0000236 BLDG 0000238 BLDG 0000461 BLDG 0000464 PARCEL T-107 PARCEL T-109 PARCEL T-112 SITE 00006 SITE 00012 SITE 00032 UST 0000248A UST 0000248B UST 0000248C UST 0000248D
AR_N60028_001793 CORRESPONDENCE 2	**10-01-2010**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND NO COMMENTS ON THE FINAL TECHNICAL MEMORANDUM HUMAN HEALTH RISK EVALUATION FOR SOIL AND RESIDENTIAL BACKYARD EVALUATION (SEE RECORD # 1792 - FINAL TECHNICAL MEMORANDUM HUMAN HEALTH RISK EVALUATION FOR SOIL AND RESIDENTIAL BACKYARD EVALUATION)	YES	SITE 00012

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AR_N60028_002766 CORRESPONDENCE 4	**10-03-2010**	NGTS, INC.	REVIEW AND COMMENTS ON THE DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM (SEE RECORD # 2753 - DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT)	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 PIER 00013 PIER 00021 SITE 00006 SITE 00012 SITE 00030 SITE 00031

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AR_N60028_001796 REPORT 2023	**10-19-2010**	TREVET, INC.	FINAL 2009 ANNUAL GROUNDWATER MONITORING REPORT (CD COPY ENCLOSED)	YES	BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 WELL 00006-MW-01 WELL 00012-MW-01 WELL 00012-MW-02 WELL 00012-MW-03 WELL 00012-MW-04 WELL 00012-MW-05 WELL 00012-MW-06 WELL 00012-MW-07 WELL 00012-MW-08 WELL 00012-MW-09 WELL 00012-MW-10 WELL 00012-MW-11 WELL 00012-MW-13 WELL 00012-MW-14

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AR_N60028_001795 CORRESPONDENCE 3	**10-21-2010**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2009 ANNUAL GROUNDWATER MONITORING PROGRAM REPORT (ENCLOSURE IS RECORD # 1796)	YES	SITE 00006 SITE 00012

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AR_N60028_001772 REPORT 166	**10-29-2010**	TETRA TECH EM, INC.	FINAL 2010 SITE MANAGEMENT PLAN (CD COPY ENCLOSED) [SEE RECORD # 1771 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	BLDG 0000066 BLDG 0000180 BLDG 0000227 BLDG 0000233 BLDG 0000530 PARCEL T-086 SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022

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AR_N60028_001778 CORRESPONDENCE 3	**11-01-2010**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL ADDENDUM 01 TO THE FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) TARGETED SOIL GAS INVESTIGATION [ENCLOSURE IS RECORD # 1779]	YES	SITE 00012 SITE 00021 SITE 00025
AR_N60028_001779 REPORT 335	**11-15-2010**	SHAW ENVIRONMENTAL, INC.	FINAL ADDENDUM 01 TO THE FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) TARGETED SOIL GAS INVESTIGATION (CD COPY ENCLOSED) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS AND COMMERCIAL TRADE SECRETS]	YES	BLDG 0000003 BLDG 0001311 BLDG 0001313 BLDG 0001325 SITE 00012 SITE 00021 SITE 00025 WELL 00021-MW-02A WELL 00021-MW-02B
AR_N60028_002280 CORRESPONDENCE 2	**12-06-2010**	SHAW ENVIRONMENTAL, INC.	TRANSMITTAL OF THE CORRECTED PAGES FOR THE FINAL ADDENDUM 01 TO THE FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN) TARGETED SOIL GAS INVESTIGATION (ENCLOSURE IS RECORD # 1779)	NO	SITE 00012 SITE 00021 SITE 00025

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AR_N60028_001821 CORRESPONDENCE 4	**04-27-2011**	CHADUX - TT, JOINT VENTURE	RESPONSES TO COMMENTS ON THE DRAFT WORK PLAN FOR WELL DECOMMISSIONING (CD COPY ENCLOSED)	YES	BLDG 0000099 BLDG 0000180 SITE 00010 SITE 00012 SITE 00014 SITE 00022 SITE 00024 SITE 00025 SITE D-1B SITE D-4B
AR_N60028_001984 CORRESPONDENCE 3	**04-27-2011**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2011 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 1985)	YES	SITE 00006 SITE 00012 SITE 00014 SITE 00015 SITE 00016 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00030 SITE 00031 SITE 00032 SITE 00033

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AR_N60028_001822 CORRESPONDENCE 3	**05-11-2011**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2010 ANNUAL GROUNDWATER MONITORING REPORT (ENCLOSURE IS RECORD # 1823)	YES	SITE 00006 SITE 00012
AR_N60028_001829 CORRESPONDENCE 3	**06-10-2011**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT REMEDIAL INVESTIGATION REPORT FOR OLD BUNKER AREA (ENCLOSURE IS RECORD # 1830)	YES	SITE 00012
AR_N60028_001943 MINUTES 43	**08-16-2011**	TREVET, INC.	16 AUGUST 2011 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING 155 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	YES	BLDG 0000233 BLDG 0001101 BLDG 0001103 BLDG 0001123 BLDG 0001319 BLDG 0001321 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00027 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001895 CORRESPONDENCE 3	**08-31-2011**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2010 ANNUAL GROUNDWATER MONITORING REPORT (ENCLOSURE IS RECORD # 1896)	YES	SITE 00006 SITE 00012

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AR_N60028_001896 REPORT 2131	**08-31-2011**	TREVET, INC.	FINAL 2010 ANNUAL GROUNDWATER MONITORING REPORT (INCLUDES REPLACEMENT PAGES FOR TABLES 9 AND 10; AND CD COPY) [SEE RECORD # 1895 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	AST 0000240 AST 0000248A BLDG 0001207 BLDG 0001209 BLDG 0001213 BLDG 0001233 BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00032 UST 0000240A UST 0000240B UST 0000248A UST 0000248B UST 0000248C UST 0000248D WELL 00006-MW-01 WELL 00012-MW-01 WELL 00012-MW-03 WELL 00012-MW-04 WELL 00012-MW-05

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AR_N60028_001938 MINUTES 45	**10-18-2011**	TREVET, INC.	18 OCTOBER 2011 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING 156 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	YES	AST 0000240 BLDG 0000233 BLDG 0001123 BLDG 0001319 BLDG 0001321 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00028 SITE 00031 SITE 00032 SITE 00033 UST 0000240 UST 0000248

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AR_N60028_001928 REPORT 165	**12-28-2011**	TREVET, INC.	FINAL 2011 SITE MANAGEMENT PLAN (CD COPY ENCLOSED) [SEE RECORD # 1927 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	BLDG 0000066 BLDG 0000099 BLDG 0000180 BLDG 0000227 BLDG 0000233 BLDG 0000530 PARCEL T-086 SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021

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					UST 0000006
					UST 0000007
					UST 0000009

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					UST 0000010
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					UST 0000169
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					UST 0000204D
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					UST 0000240
					UST 0000240A

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					UST 0000240B UST 0000248A UST 0000248B UST 0000248C UST 0000248D UST 0000257 UST 0000300D UST 0000330C UST 0000368A UST 0000368B UST 0000368C UST 0000469
AR_N60028_001954 CORRESPONDENCE 3	**04-10-2012**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT DEMOLITION PLAN, ASBESTOS ABATEMENT, RADIOLOGICAL SURVEY, AND DEMOLITION (ENCLOSURE IS RECORD # 1955)	YES	BLDG 0001123 BLDG 0001319 BLDG 0001321 SITE 00012
AR_N60028_001950 CORRESPONDENCE 3	**04-20-2012**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2011 ANNUAL GROUNDWATER MONITORING REPORT (ENCLOSURE IS RECORD # 1951)	YES	SITE 00006 SITE 00012
AR_N60028_001959 CORRESPONDENCE 2	**05-25-2012**	AMEC ENVIRONMENT AND INFRASTRUCTURE, INC.	REVIEW AND COMMENTS ON BEHALF OF THE TREASURE ISLAND DEVELOPMENT AUTHORITY OF THE DRAFT 2011 ANNUAL GROUNDWATER MONITORING REPORT (CD COPY ENCLOSED) [SEE RECORD # 1951 - DRAFT 2011 ANNUAL GROUNDWATER MONITORING REPORT]	YES	SITE 00006 SITE 00012 WELL 00012-MW-08 WELL 00012-MW-13 WELL 00012-MW-17

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AR_N60028_002013 CORRESPONDENCE 3	**06-15-2012**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL REMEDIAL INVESTIGATION REPORT, OLD BUNKER AREA (ENCLOSURE IS RECORD # 2014)	YES	SITE 00012

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AR_N60028_002014 REPORT 31758	**06-20-2012**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	FINAL REMEDIAL INVESTIGATION REPORT FOR OLD BUNKER AREA (CD COPY ENCLOSED) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS] {SEE RECORD # 2013 - BRAC PMO WEST TRANSMITTAL LETTER}	YES	AREA 01231 AREA 01233 BLDG 0000345 BLDG 0000461 BLDG 0001100 BLDG 0001101 BLDG 0001102 BLDG 0001103 BLDG 0001104 BLDG 0001105 BLDG 0001106 BLDG 0001107 BLDG 0001117 BLDG 0001143 BLDG 0001145 BLDG 0001205 BLDG 0001207 BLDG 0001209 BLDG 0001211 BLDG 0001217 BLDG 0001219 BLDG 0001227 BLDG 0001228 BLDG 0001231 BLDG 0001235 BLDG 0001237 BLDG 0001244 BLDG 0001246

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					BLDG 0001333
					BLDG 0001401
					BLDG 0001408
					BLDG 0001410
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					BLDG 0001412
					PARCEL T-096
					PARCEL T-097
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					PARCEL T-101
					PARCEL T-103
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					SITE 00024

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					SITE 00030 SITE 00031 SITE 00032 SITE 00033
AR_N60028_001983 REPORT 696	**07-03-2012**	SHAW GROUP, INC.	FINAL WORK PLAN, SOIL GAS INVESTIGATION [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	BLDG 0001311 BLDG 0001313 SITE 00012 WELL 00012-MW-38
AR_N60028_002045 REPORT 38	**07-10-2012**	SHAW ENVIRONMENTAL, INC.	FINAL DEMOLITION PLAN, ASBESTOS ABATEMENT, RADIOLOGICAL SURVEY, AND DEMOLITION (CD COPY ENCLOSED) [SEE RECORD # 265 FINAL ASBESTOS ABATEMENT WORK PLAN]	YES	BLDG 0001123 BLDG 0001319 BLDG 0001321 SITE 00012

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
AR_N60028_002752 CORRESPONDENCE 2	**08-06-2012**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM (ENCLOSURE IS RECORD # 2753)	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 PIER 00013 PIER 00021 SITE 00006 SITE 00012 SITE 00030 SITE 00031

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					SITE 00032
AR_N60028_002006 MINUTES 165	**08-21-2012**	NICCOLI REPORTING	21 AUGUST 2012 RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT (INCLUDES COMMENTS BY RESTORATION ADVISORY BOARD (RAB) MEMBER DALE SMITH ON THE DRAFT HUMAN HEALTH RISK ASSESSMENT ADDENDUM; AND CD COPY)	YES	BLDG 0000003 BLDG 0000233 BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00031 SITE 00032 SITE 00033

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AR_N60028_002019 REPORT 489	**08-30-2012**	TREVET, INC.	FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN, LONG TERM MONITORING OF GROUNDWATER (CD COPY ENCLOSED) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	YES	AST 0000240 AST 0000248 BLDG 0001207 BLDG 0001209 BLDG 0001231 BLDG 0001233 BLDG 0001246 BLDG 0001248 BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 UST 0000240A UST 0000240B UST 0000248A UST 0000248B UST 0000248C UST 0000248D UST 0000267 WELL 00012-MW-08 WELL 00012-MW-09 WELL 00012-MW-29

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AR_N60028_001986 CORRESPONDENCE 3	**09-11-2012**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2012 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 1987)	YES	SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00026 SITE 00027 SITE 00028

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AR_N60028_001987 REPORT 169	**09-11-2012**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	FINAL 2012 SITE MANAGEMENT PLAN (CD COPY ENCLOSED) [SEE RECORD # 1986 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	AST 0000004 AST 0000004M AST 0000005 AST 0000005M AST 0000006A AST 0000006B AST 0000006C AST 0000006E AST 0000006F AST 0000006G AST 0000006M AST 0000034A AST 0000034B AST 0000103 AST 0000104 AST 0000240 AST 0000248 AST 0000456 BLDG 0000003 BLDG 0000034 BLDG 0000041 BLDG 0000062 BLDG 0000084 BLDG 0000085 BLDG 0000099 BLDG 0000102 BLDG 0000143 BLDG 0000194

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					BLDG 0000225
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					BLDG 0000464
					BLDG 0000520
					BLDG 0000530
					BLDG 0001311
					BLDG 0001313
					PARCEL T-015
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					UST 0000111
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					UST 0000469
					UST QR08
					UST YF3

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AR_N60028_002011 CORRESPONDENCE 3	**09-19-2012**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2011 ANNUAL GROUNDWATER MONITORING REPORT (ENCLOSURE IS RECORD # 2012)	YES	SITE 00006 SITE 00012

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AR_N60028_002012 REPORT 2665	**09-19-2012**	TREVET, INC.	FINAL 2011 ANNUAL GROUNDWATER MONITORING REPORT (CD COPY ENCLOSED) [SEE RECORD # 2011 - BRAC PMO WEST TRANSMITTAL LETTER] {DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS}	YES	BLDG 0001207 BLDG 0001209 BLDG 0001246 BLDG 0001248 BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 UST 0000240A UST 0000240B UST 0000267 WELL 00012-MW-01 WELL 00012-MW-03 WELL 00012-MW-04 WELL 00012-MW-05 WELL 00012-MW-06 WELL 00012-MW-07 WELL 00012-MW-08 WELL 00012-MW-09 WELL 00012-MW-11 WELL 00012-MW-13

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					WELL 00012-MW-32

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AR_N60028_002763 CORRESPONDENCE 6	**10-04-2012**	CALIFORNIA DEPARTMENT OF PUBLIC HEALTH - SACRAMENTO, CA	REVIEW AND COMMENTS ON THE DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM (SEE RECORD # 2753 - DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT)	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 PIER 00013 PIER 00021 SITE 00006 SITE 00012 SITE 00030 SITE 00031

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AR_N60028_002762 CORRESPONDENCE 5	**10-05-2012**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM (SEE RECORD # 2753 - DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT)	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 PIER 00013 PIER 00021 SITE 00006 SITE 00012 SITE 00030 SITE 00031

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AR_N60028_002765 CORRESPONDENCE 3	**10-05-2012**	DADE MOELLER AND ASSOCIATES	REVIEW AND COMMENTS ON THE DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM (SEE RECORD # 2753 - DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT)	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 PIER 00013 PIER 00021 SITE 00006 SITE 00012 SITE 00030 SITE 00031

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AR_N60028_002767 CORRESPONDENCE 1	**10-10-2012**	U.S. EPA - SAN FRANCISCO, CA	REVIEW AND CONCURRENCE WITH THE DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM (SEE RECORD # 2753 - DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT)	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 PIER 00013 PIER 00021 SITE 00006 SITE 00012 SITE 00030 SITE 00031

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AR_N60028_002764 CORRESPONDENCE 3	**10-12-2012**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM (SEE RECORD # 2753 - DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT)	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 PIER 00013 PIER 00021 SITE 00006 SITE 00012 SITE 00030 SITE 00031

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AR_N60028_001996 CORRESPONDENCE 3	**10-18-2012**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT WORK PLAN, ADDITIONAL SOIL SAMPLING TO SUPPORT FEASIBILITY STUDY (ENCLOSURE IS RECORD # 1997)	YES	SITE 00012
AR_N60028_002037 REPORT 433	**12-01-2012**	TETRA TECH EC, INC.	FINAL ACCIDENT PREVENTION PLAN/SITE SAFETY AND HEALTH PLAN, NON-TIME-CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREA RADIOLOGICAL HOT SPOT REMOVAL AND BUILDING DEMOLITION (CD COPY ENCLOSED)	YES	BLDG 0001121 BLDG 0001323 SITE 00012
AR_N60028_002015 CORRESPONDENCE 4	**12-14-2012**	BRAC PMO WEST	TRANSMITTAL OF THE 1) DRAFT NON-TIME-CRITICAL REMOVAL ACTION WORK PLAN, FOR SOLID WASTE DISPOSAL AREA RADIOLOGICAL HOT SPOT REMOVAL AND BUILDING DEMOLITION; AND 2) DRAFT DEMOLITION WORK PROCEDURE	YES	SITE 00012
AR_N60028_001027 REPORT 889	**01-01-2013**	CH2M HILL - KLEINFELDER, JOINT VENTURE	FINAL WORK PLAN, ADDITIONAL SOIL SAMPLING TO SUPPORT FEASIBILITY STUDY (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS)	YES	SITE 00012
AR_N60028_002063 CORRESPONDENCE 3	**01-16-2013**	CALIFORNIA DEPARTMENT OF PUBLIC HEALTH - SACRAMENTO, CA	REVIEW AND COMMENTS ON THE DRAFT NON-TIME-CRITICAL REMOVAL ACTION WORK PLAN, SOLID WASTE DISPOSAL AREA, RADIOLOGICAL HOT SPOT REMOVAL AND BUILDING DEMOLITION	YES	SITE 00012
AR_N60028_001025 CORRESPONDENCE 3	**01-31-2013**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL WORK PLAN, ADDITIONAL SOIL SAMPLING TO SUPPORT FEASIBILITY STUDY (ENCLOSURE IS RECORD # 1027)	YES	SITE 00012

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AR_N60028_001386 CORRESPONDENCE 2	**02-17-2013**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT WORK PLAN, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA (SEE RECORD # 749 - DRAFT WORK PLAN)	NO	SITE 00012
AR_N60028_002018 CORRESPONDENCE 14	**03-06-2013**	CALIFORNIA DEPARTMENT OF PUBLIC HEALTH - SACRAMENTO, CA	REVIEW AND COMMENTS ON THE INTERNAL FINAL HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM [INCLUDES ORIGINAL COPY W/ THE SAME DATE]	YES	BLDG 0000003 BLDG 0000233 BLDG 0000343 BLDG 0000433 BLDG 0000461 BLDG 0000570 BLDG 0001125 BLDG 0001133 BLDG 0001227 BLDG 0001229 BLDG 0001311 BLDG 0001325 SITE 00001 SITE 00006 SITE 00012

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AR_N60028_002768 CORRESPONDENCE 2	**03-15-2013**	DTSC - BERKELEY, CA	REVIEW AND NO COMMENTS ON THE DRAFT HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM **SEE COMMENTS**	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 PIER 00013 PIER 00021 SITE 00006 SITE 00012 SITE 00030 SITE 00031

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					SITE 00032
AR_N60028_002222 REPORT 1528	**04-01-2013**	TETRA TECH EC, INC.	FINAL NON-TIME-CRITICAL REMOVAL ACTION WORK PLAN FOR HOT SPOTS, NON-TIME-CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREA RADIOLOGICAL HOT SPOT REMOVAL AND BUILDING DEMOLITION (CD COPY ENCLOSED)	NO	BLDG 0001121 BLDG 0001323 SITE 00012
AR_N60028_002250 REPORT 16	**04-01-2013**	TETRA TECH EC, INC.	FINAL NON-TIME CRITICAL REMOVAL ACTION DEMOLITION WORK PROCEDURE FOR BUILDINGS (CD COPY ENCLOSED) [SEE RECORD # 2249 - BRAC PMO WEST TRANSMITTAL LETTER]	NO	BLDG 0001121 BLDG 0001323 SITE 00012
AR_N60028_002249 CORRESPONDENCE 2	**04-03-2013**	BRAC PMO WEST	TRANSMITTAL OF THE 1) FINAL NON-TIME CRITICAL REMOVAL ACTION WORK PLAN FOR SOLID WASTE DISPOSAL AREA, RADIOLOGICAL HOT SPOT REMOVAL AND BUILDING DEMOLITION; AND 2) FINAL NON-TIME CRITICAL REMOVAL ACTION DEMOLITION WORK PROCEDURE	NO	BLDG 0001121 BLDG 0001323 SITE 00012
AR_N60028_002031 CORRESPONDENCE 4	**05-02-2013**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2012 ANNUAL GROUNDWATER MONITORING REPORT (ENCLOSURE IS RECORD # 2032)	YES	SITE 00006 SITE 00012
AR_N60028_001458 CORRESPONDENCE 3	**05-10-2013**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN); RADIOLOGICALLY IMPACTED AREAS (ENCLOSURE IS RECORD #1889)	YES	SITE 00006 SITE 00012 SITE 00030 SITE 00031 SITE 00032

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AR_N60028_002321 REPORT 1509	**07-01-2013**	ITSI GILBANE COMPANY	FINAL RADIOLOGICAL MANAGEMENT PLAN (CD COPY ENCLOSED) [SEE RECORD # 2320 - BRAC PMO WEST TRANSMITTAL LETTER] {DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS}	NO	BLDG 0000003 BLDG 0000007 BLDG 0000233 SITE 00012 SITE 00032
AR_N60028_002320 CORRESPONDENCE 2	**08-01-2013**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL RADIOLOGICAL MANAGEMENT PLAN (ENCLOSURE IS RECORD # 2321)	NO	BLDG 0000003 SITE 00012 SITE 00032
AR_N60028_000500 CORRESPONDENCE 3	**08-05-2013**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2012 ANNUAL GROUNDWATER MONITORING REPORT (ENCLOSURE IS RECORD # 582)	YES	SITE 00006 SITE 00012

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AR_N60028_000582 REPORT 1754	**08-05-2013**	TREVET, INC.	FINAL 2012 ANNUAL GROUNDWATER MONITORING REPORT (CD COPY ENCLOSED) [SEE RECORD # 500 - BRAC PMO WEST TRANSMITTAL LETTER]	YES	BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 UST 0000240A UST 0000240B WELL 00006-MW-01 WELL 00012-MW-01 WELL 00012-MW-03 WELL 00012-MW-04 WELL 00012-MW-05 WELL 00012-MW-06 WELL 00012-MW-07 WELL 00012-MW-09 WELL 00012-MW-11 WELL 00012-MW-13 WELL 00012-MW-14 WELL 00012-MW-15 WELL 00012-MW-16

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AR_N60028_002315 CORRESPONDENCE 3	**08-05-2013**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2013 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 724)	NO	SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00026 SITE 00027 SITE 00028

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					SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033 SITE 00143
AR_N60028_002033 CORRESPONDENCE 3	**08-29-2013**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT WORK PLAN FOR GROUNDWATER AND SOIL GAS MONITORING (ENCLOSURE IS RECORD # 2034)	YES	SITE 00006 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002099 CORRESPONDENCE 4	**09-17-2013**	NAVY AND MARINE CORPS PUBLIC HEALTH CENTER ENVIRONMENTAL PROGRAMS DEPARTMENT - PORTSMOUTH, VA	REVIEW AND COMMENTS ON THE DRAFT ACCIDENT PREVENTION PLAN, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA, REVISION 1	YES	SITE 00012
AR_N60028_002052 CORRESPONDENCE 4	**10-28-2013**	BRAC PMO WEST	TRANSMITTAL OF THE INTERNAL DRAFT RADIOLOGICAL SAMPLING WORK PLAN FOR THE 1400 SERIES HOUSING AREA (ENCLOSURE IS RECORD # 2053)	YES	SITE 00012
AR_N60028_002316 CORRESPONDENCE 10	**11-15-2013**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE INTERNAL DRAFT RADIOLOGICAL SAMPLING WORK PLAN FOR THE 1400 SERIES HOUSING AREA (INCLUDES COMMENTS BY CALIFORNIA DEPARTMENT OF PUBLIC HEALTH) [SEE RECORD # 2053 - INTERNAL DRAFT RADIOLOGICAL SAMPLING WORK PLAN]	NO	SITE 00012
AR_N60028_002287 REPORT 197	**11-27-2013**	SHAW ENVIRONMENTAL AND INFRASTRUCTURE GROUP	FINAL ACCIDENT PREVENTION PLAN VARIOUS RADIOLOGICAL SURVEYS OF VARIOUS AREAS (CD COPY ENCLOSED) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS AND COMMERCIAL TRADE SECRETS]	NO	SITE 00012

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AR_N60028_002294 CORRESPONDENCE 2	**11-27-2013**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL RADIOLOGICAL SAMPLING WORK PLAN FOR THE 1400 SERIES HOUSING AREA (ENCLOSURE IS RECORD # 2295)	NO	SITE 00012
AR_N60028_002295 REPORT 625	**11-27-2013**	SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC.	FINAL RADIOLOGICAL SAMPLING WORK PLAN FOR THE 1400 SERIES HOUSING AREA (CD COPY ENCLOSED) [SEE RECORD # 2294 - BRAC PMO WEST TRANSMITTAL LETTER] {DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS}	NO	SITE 00012
AR_N60028_002292 CORRESPONDENCE 2	**12-04-2013**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL WORK PLAN FOR GROUNDWATER AND SOIL GAS MONITORING (ENCLOSURE IS RECORD # 2293)	NO	SITE 00006 SITE 00012 SITE 00021 SITE 00024

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AR_N60028_002293 REPORT 994	**12-04-2013**	TREVET, INC.	FINAL WORK PLAN FOR GROUNDWATER AND SOIL GAS MONITORING (CD COPY ENCLOSED) [SEE RECORD # 2292 - BRAC PMO WEST TRANSMITTAL LETTER] {DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS}	NO	BLDG 0001311 BLDG 0001313 SITE 00006 SITE 00012 SITE 00021 SITE 00024 WELL 00024-BB-38 WELL 00024-BB-63 WELL 00024-BB-76 WELL 00024-BB-80 WELL 00024-BB-89 WELL 00024-EW-04 WELL 00024-EW-06 WELL 00024-EW-11 WELL 00024-EW-12 WELL 00024-EW-16 WELL 00024-EW-28 WELL 00024-EW-29 WELL 00024-EW-30

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					WELL 00024-IW-05
					WELL 00024-IW-08
					WELL 00024-IW-21
					WELL 00024-TW-04
					WELL 00024-TW-11
					WELL 00024-TW-14
					WELL 00024-TW-16
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					WELL 00024-TW-36

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AR_N60028_002370 MINUTES 31	**12-10-2013**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	10 DECEMBER 2013 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING 168 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	NO	BLDG 0000233 SITE 00012
AR_N60028_002050 REPORT 236	**12-12-2013**	SHAW ENVIRONMENTAL, INC.	FINAL ACCIDENT PREVENTION PLAN NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT, SOLID WASTE DISPOSAL AREA (INCLUDES REPLACEMENT PAGES CONVERTING DOCUMENT DATED OCTOBER 2013 TO REVISION 1; RESPONSES TO COMMENTS ON THE DRAFT AND CD COPY)	YES	SITE 00012
AR_N60028_002285 REPORT 158	**12-20-2013**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	FINAL 2013 SITE MANAGEMENT PLAN (CD COPY ENCLOSED)	NO	SITE 00012

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AR_N60028_002290 CORRESPONDENCE 2	**12-20-2013**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2013 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 2285)	NO	SITE 00012
AR_N60028_000738 CORRESPONDENCE 2	**01-16-2014**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT WORK PLAN, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA (ENCLOSURE IS RECORD # 749)	NO	SITE 00012
AR_N60028_000761 CORRESPONDENCE 6	**02-14-2014**	CALIFORNIA DEPARTMENT OF PUBLIC HEALTH - SACRAMENTO, CA	REVIEW AND COMMENTS ON THE DRAFT WORK PLAN NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA (SEE RECORD # 749 DRAFT WORK PLAN)	YES	SITE 00012
AR_N60028_000793 CORRESPONDENCE 2	**02-14-2014**	LANGAN TREADWELL ROLLO	REVIEW AND COMMENTS ON BEHALF OF THE TREASURE ISLAND DEVELOPMENT AUTHORITY OF THE DRAFT WORK PLAN NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA (SEE RECORD # 749 - DRAFT WORK PLAN)	YES	BLDG 0001101 BLDG 0001103 SITE 00012
AR_N60028_000810 CORRESPONDENCE 4	**02-14-2014**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT WORK PLAN NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA (SEE RECORD # 749 DRAFT WORK PLAN)	YES	SITE 00012
AR_N60028_001387 CORRESPONDENCE 2	**02-14-2014**	RESTORATION ADVISORY BOARD MEMBER	REVIEW AND COMMENTS ON THE DRAFT WORK PLAN, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA (SEE RECORD # 749 - DRAFT WORK PLAN)	NO	SITE 00012

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AR_N60028_002371 MINUTES 39	**02-18-2014**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	18 FEBRUARY 2014 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING 169 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	NO	BLDG 0001119 BLDG 0001121 BLDG 0001123 BLDG 0001125 BLDG 0001207 BLDG 0001209 BLDG 0001211 BLDG 0001213 BLDG 0001231 BLDG 0001233 BLDG 0001319 BLDG 0001321 BLDG 0001323 SITE 00012

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AR_N60028_002303 REPORT 326	**03-24-2014**	CB AND I FEDERAL SERVICES, LLC	FINAL ACCIDENT PREVENTION PLAN NON-TIME CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREAS A/B, 1207/1209, AND 1231/1233-RADIOLOGICAL CHARACTERIZATION, REMEDIATION, FINAL STATUS SURVEY AND BUILDING DEMOLITION, REVISION 1	NO	BLDG 0001119 BLDG 0001121 BLDG 0001123 BLDG 0001125 BLDG 0001127 BLDG 0001133 BLDG 0001205 BLDG 0001207 BLDG 0001209 BLDG 0001211 BLDG 0001213 BLDG 0001231 BLDG 0001233 BLDG 0001235 BLDG 0001237 BLDG 0001317 BLDG 0001319 BLDG 0001321 BLDG 0001323 BLDG 0001325 SITE 00012
AR_N60028_002372 MINUTES 34	**04-15-2014**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	15 APRIL 2014 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING 170 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	NO	SITE 00012 SITE 00027 SITE 00031 SITE 00033

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AR_N60028_002323 CORRESPONDENCE 2	**05-12-2014**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL WORK PLAN NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT, SOLID WASTE DISPOSAL AREA (ENCLOSURE IS RECORD # 2324)	NO	SITE 00012
AR_N60028_002324 REPORT 1915	**05-12-2014**	CB AND I FEDERAL SERVICES	FINAL WORK PLAN NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT, SOLID WASTE DISPOSAL AREA (INCLUDES RESPONSES TO COMMENTS ON THE DRAFT; FINAL CONTRACTOR QUALITY CONTROL PLAN, DCN: SHAW-0807-0010-0497; AND CD COPY)	NO	BLDG 0001101 BLDG 0001103 SITE 00012
AR_N60028_002322 REPORT 253	**06-06-2014**	CB AND I FEDERAL SERVICES	FINAL TASK-SPECIFIC PLAN RADIOLOGICAL SCOPING SURVEYS OF HOUSING UNITS (CD COPY ENCLOSED) [DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS]	NO	SITE 00012
AR_N60028_002373 MINUTES 57	**06-25-2014**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	25 JUNE 2014 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING 171 (INCLUDES AGENDA, VARIOUS HANDOUTS, AND CD COPY)	NO	SITE 00006 SITE 00012 SITE 00024 SITE 00031 SITE 00033

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AR_N60028_002769 CORRESPONDENCE 2	**07-01-2014**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM (ENCLOSURE IS RECORD # 2770)	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000168 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 BLDG 0001101 BLDG 0001103 BLDG 0001203 PIER 00013 PIER 00021

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AR_N60028_002770 REPORT 63859	**07-01-2014**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	FINAL HISTORICAL RADIOLOGICAL ASSESSMENT - SUPPLEMENTAL TECHNICAL MEMORANDUM (CD COPY ENCLOSED) [SEE RECORD # 2769 - BRAC PMO WEST TRANSMITTAL LETTER]	NO	AOI 000001 AOI 000002 AOI 000003 AOI 000004 AOI 000005 AOI 000006 AOI 000007 AOI 000008 BLDG 0000003 BLDG 0000007 BLDG 0000168 BLDG 0000226 BLDG 0000228 BLDG 0000233 BLDG 0000273 BLDG 0000327 BLDG 0000342 BLDG 0000343 BLDG 0000344 BLDG 0000461 BLDG 0000462 BLDG 0000463 BLDG 0000570 BLDG 0001101 BLDG 0001103 BLDG 0001203 PIER 00013 PIER 00021

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AR_N60028_002413 CORRESPONDENCE 2	**07-25-2014**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT WORK PLAN FOR ADDITIONAL SAMPLING TO SUPPORT FEASIBILITY STUDY (ENCLOSURE IS RECORD # 2414)	NO	SITE 00012
AR_N60028_002331 CORRESPONDENCE 2	**08-15-2014**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2013 ANNUAL GROUNDWATER AND SOIL GAS MONITORING REPORT (ENCLOSURE IS RECORD # 2332)	NO	SITE 00006 SITE 00012 SITE 00021 SITE 00024

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AR_N60028_002366 REPORT 1386	**09-01-2014**	CH2M HILL - KLEINFELDER, JOINT VENTURE	FINAL WORK PLAN, ADDITIONAL SAMPLING TO SUPPORT FEASIBILITY STUDY (CD COPY ENCLOSED) [SEE RECORD # 2365 - BRAC PMO WEST TRANSMITTAL LETTER] (DOCUMENT ALSO CONTAINS SENSITIVE STREET LEVEL MAPS)	NO	BLDG 0001105 BLDG 0001107 BLDG 0001108 BLDG 0001110 BLDG 0001112 BLDG 0001115 BLDG 0001118 BLDG 0001131 BLDG 0001147 BLDG 0001202 BLDG 0001203 BLDG 0001217 BLDG 0001221 BLDG 0001223 BLDG 0001225 BLDG 0001226 BLDG 0001228 BLDG 0001230 BLDG 0001232 BLDG 0001234 BLDG 0001236 BLDG 0001301 BLDG 0001302 BLDG 0001310 BLDG 0001312 BLDG 0001313 SITE 00012

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AR_N60028_002365 CORRESPONDENCE 2	**09-05-2014**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL WORK PLAN, ADDITIONAL SAMPLING TO SUPPORT FEASIBILITY STUDY (ENCLOSURE IS RECORD # 2366)	NO	BLDG 0001105 BLDG 0001107 BLDG 0001108 BLDG 0001110 BLDG 0001112 BLDG 0001115 BLDG 0001118 BLDG 0001131 BLDG 0001147 BLDG 0001202 BLDG 0001203 BLDG 0001217 BLDG 0001221 BLDG 0001223 BLDG 0001225 BLDG 0001226 BLDG 0001228 BLDG 0001230 BLDG 0001232 BLDG 0001234 BLDG 0001236 BLDG 0001301 BLDG 0001302 BLDG 0001310 BLDG 0001312 BLDG 0001313 SITE 00012

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AR_N60028_002374 REPORT 67	**09-09-2014**	CB AND I FEDERAL SERVICES	FINAL DEMOLITION PLAN NON-TIME CRITICAL REMOVAL ACTION FOR SOLID WASTE DISPOSAL AREAS A/B, 1207/1209 AND 1231/1233 - RADIOLOGICAL CHARACTERIZATION, REMEDIATION, FINAL STATUS SURVEY AND BUILDING DEMOLITION (CD COPY ENCLOSED)	NO	BLDG 0001119 BLDG 0001121 BLDG 0001125 BLDG 0001207 BLDG 0001209 BLDG 0001211 BLDG 0001213 BLDG 0001231 BLDG 0001233 BLDG 0001319 BLDG 0001323 SITE 00012

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AR_N60028_002356 CORRESPONDENCE 1	**09-24-2014**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2014 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 2357)	NO	SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029

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AR_N60028_002361 CORRESPONDENCE 2	**10-21-2014**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT 2014 SITE MANAGEMENT PLAN (SEE RECORD # 2357 - DRAFT 2014 SITE MANAGEMENT PLAN)	NO	SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029

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					SITE 00030 SITE 00031 SITE 00032 SITE 00033 UST 0000238 UST 0000240
AR_N60028_002468 CORRESPONDENCE 2	**11-11-2014**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT - FINAL STATUS SURVEY REPORT, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA (ENCLOSURE IS RECORD # 2469)	NO	BLDG 0001101 BLDG 0001321 SITE 00012 SURVEY UNIT 0001 SURVEY UNIT 0002 SURVEY UNIT 0003

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AR_N60028_002362 CORRESPONDENCE 3	**11-18-2014**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT 2014 SITE MANAGEMENT PLAN (SEE RECORD # 2357 - DRAFT 2014 SITE MANAGEMENT PLAN)	NO	SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029

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AR_N60028_002789 MINUTES 38	**12-09-2014**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	09 DECEMBER 2014 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NUMBER 174 (INCLUDES AGENDA; VARIOUS HANDOUTS; AND CD COPY)	NO	BLDG 0000003 BLDG 0000233 SITE 00006 SITE 00012 SITE 00024 SITE 00027 SITE 00031 SITE 00032 SITE 00033
AR_N60028_002470 CORRESPONDENCE 1	**12-10-2014**	LANGAN TREADWELL ROLLO	REVIEW AND COMMENTS ON BEHALF OF THE TREASURE ISLAND DEVELOPMENT AUTHORITY OF THE DRAFT - FINAL STATUS SURVEY REPORT, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA	NO	BLDG 0001101 BLDG 0001321 SITE 00012 SURVEY UNIT 0001 SURVEY UNIT 0002 SURVEY UNIT 0003

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AR_N60028_002363 CORRESPONDENCE 2	**12-16-2014**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT RADIOLOGICAL SCOPING SURVEY REPORT, INSTALLATION RESTORATION SITE AND SELECTED TRANSPORTATION ROUTES (ENCLOSURE IS RECORD # 2364)	NO	BLDG 0000453 BLDG 0000462 BLDG 0001405 BLDG 0001406 BLDG 0001411 BLDG 0001412 BLDG 0001432 BLDG 0001437 BLDG 0001445 BLDG 0001447 SITE 00006 SITE 00012 SITE 00020

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AR_N60028_002427 CORRESPONDENCE 1	**12-18-2014**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2014 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 2428)	NO	SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029

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AR_N60028_002471 CORRESPONDENCE 5	**12-19-2014**	CALIFORNIA DEPARTMENT OF PUBLIC HEALTH - SACRAMENTO, CA	REVIEW AND COMMENTS ON THE DRAFT - FINAL STATUS SURVEY REPORT, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA	NO	BLDG 0001101 BLDG 0001321 SITE 00012 SURVEY UNIT 0001 SURVEY UNIT 0002 SURVEY UNIT 0003
AR_N60028_002472 CORRESPONDENCE 2	**12-19-2014**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT - FINAL STATUS SURVEY REPORT, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA	NO	BLDG 0001101 BLDG 0001321 SITE 00012 SURVEY UNIT 0001 SURVEY UNIT 0002 SURVEY UNIT 0003

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AR_N60028_002428 REPORT 154	**12-23-2014**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	FINAL 2014 SITE MANAGEMENT PLAN (CD COPY ENCLOSED) [SEE RECORD # 2427 - BRAC PMO WEST TRANSMITTAL LETTER]	NO	SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00027 SITE 00028 SITE 00029

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AR_N60028_002385 REPORT 2669	**01-20-2015**	TREVET, INC.	FINAL 2013 ANNUAL GROUNDWATER AND SOIL GAS MONITORING REPORT (CD COPY ENCLOSED) [SEE RECORD # 2384 - BRAC PMO WEST TRANSMITTAL LETTER]	NO	SITE 00006 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002384 CORRESPONDENCE 2	**01-23-2015**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2013 ANNUAL GROUNDWATER AND SOIL GAS MONITORING REPORT (ENCLOSURE IS RECORD # 2385)	NO	SITE 00006 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002790 MINUTES 25	**02-17-2015**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	17 FEBRUARY 2015 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NUMBER 175 (INCLUDES AGENDA; VARIOUS HANDOUTS; AND CD COPY)	NO	BLDG 0001217 BLDG 0001311 BLDG 0001313 SITE 00012 SITE 00021 SITE 00024 SITE 00031

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AR_N60028_002474 REPORT 11722	**03-04-2015**	CB AND I FEDERAL SERVICES	FINAL - FINAL STATUS SURVEY REPORT, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA (INCLUDES RESPONSE TO COMMENTS ON THE DRAFT; AND CD COPY) [SEE RECORD # 2473 - BRAC PMO TRANSMITTAL LETTER]	NO	BLDG 0001101 BLDG 0001321 SITE 00012 SURVEY UNIT 0001 SURVEY UNIT 0002 SURVEY UNIT 0003
AR_N60028_002473 CORRESPONDENCE 2	**03-06-2015**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL - FINAL STATUS SURVEY REPORT, NON-TIME CRITICAL REMOVAL ACTION FOR BIGELOW COURT SOLID WASTE DISPOSAL AREA (ENCLOSURE IS RECORD # 2474)	NO	BLDG 0001101 BLDG 0001321 SITE 00012 SURVEY UNIT 0001 SURVEY UNIT 0002 SURVEY UNIT 0003
AR_N60028_002448 CORRESPONDENCE 2	**04-17-2015**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2014 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT (ENCLOSURE IS RECORD # 2449)	NO	SITE 00006 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002791 MINUTES 27	**04-21-2015**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	21 APRIL 2015 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NUMBER 176 (INCLUDES AGENDA; VARIOUS HANDOUTS; AND CD COPY)	NO	BLDG 0000342 BLDG 0000570 BLDG 0001222 SITE 00012 SITE 00024 SITE YF-3

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AR_N60028_002491 REPORT 1900	**04-22-2015**	GILBANE	FINAL RADIOLOGICAL SCOPING SURVEY REPORT, INSTALLATION RESTORATION SITE AND SELECTED TRANSPORTATION ROUTES (CD COPY ENCLOSED) [SEE RECORD # 2490 - BRAC PMO WEST TRANSMITTAL LETTER]	NO	SITE 00006 SITE 00012
AR_N60028_002490 CORRESPONDENCE 2	**04-24-2015**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL RADIOLOGICAL SCOPING SURVEY REPORT, INSTALLATION RESTORATION SITE AND SELECTED TRANSPORTATION ROUTES (ENCLOSURE IS RECORD # 2491)	NO	SITE 00006 SITE 00012
AR_N60028_002572 REPORT 184	**06-01-2015**	CB AND I FEDERAL SERVICES, LLC	FINAL TASK-SPECIFIC PLAN ADDENDUM, RADIOLOGICAL SCOPING SURVEYS OF HOUSING UNITS-INVESTIGATION AND REMOVAL OF RADIOLOGICAL ANOMALIES (CD COPY ENCLOSED)**SEE COMMENTS**	NO	BLDG 0001240 BLDG 0001241 BLDG 0001303 SITE 00012
AR_N60028_002479 CORRESPONDENCE 2	**06-10-2015**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS (ENCLOSURE IS RECORD # 2480)	NO	SITE 00012
AR_N60028_002792 MINUTES 41	**06-16-2015**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	16 JUNE 2015 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NUMBER 177 (INCLUDES AGENDA; VARIOUS HANDOUTS; AND CD COPY)	NO	BLDG 0000461 SITE 00006 SITE 00012 SITE 00021 SITE 00024 SITE 00032 SITE YF-3
AR_N60028_002489 REPORT 56	**07-01-2015**	MULTIMEDIA ENVIRONMENTAL COMPLIANCE GROUP	FINAL INDEPENDENT THIRD-PARTY QUALITY ASSESSMENT PROJECT PLAN FOR MUNITIONS RESPONSE THIRD-PARTY INDEPENDENT QUALITY ASSURANCE SUPPORT SERVICES, NON-TIME CRITICAL REMOVAL ACTION (CD COPY ENCLOSED)	NO	SITE 00012

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AR_N60028_002483 CORRESPONDENCE 2	**07-02-2015**	TREASURE ISLAND DEVELOPMENT AUTHORITY - SAN FRANCISCO, CA	REVIEW AND CONCURRENCE WITH THE DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS (SEE RECORD # 2480 - DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS)	NO	SITE 00012
AR_N60028_002481 CORRESPONDENCE 3	**07-07-2015**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS (SEE RECORD # 2480 - DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS)	NO	SITE 00012
AR_N60028_002571 CORRESPONDENCE 2	**07-09-2015**	CB AND I FEDERAL SERVICES, LLC	TRANSMITTAL OF THE FINAL TASK-SPECIFIC PLAN ADDENDUM, RADIOLOGICAL SCOPING SURVEYS OF HOUSING UNITS-INVESTIGATION AND REMOVAL OF RADIOLOGICAL ANOMALIES (ENCLOSURE IS RECORD # 2572)	NO	BLDG 0001240 BLDG 0001241 BLDG 0001303 SITE 00012
AR_N60028_002564 REPORT 41	**07-10-2015**	CB AND I FEDERAL SERVICES, LLC	FINAL TASK-SPECIFIC PLAN, B-25 BOX DEWATERING, CHARACTERIZATION, AND REPACKAGING (CD COPY ENCLOSED) [SEE RECORD # 2563 - CB AND I FEDERAL SERVICES TRANSMITTAL LETTER]	NO	BLDG 0000570 BLDG 0001319 SITE 00012
AR_N60028_002482 CORRESPONDENCE 4	**07-13-2015**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS (SEE RECORD # 2480 - DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS)	NO	SITE 00012
AR_N60028_002563 CORRESPONDENCE 2	**07-20-2015**	CB AND I FEREDAL SERVICES, LLC	TRANSMITTAL OF THE FINAL TASK-SPECIFIC PLAN, B-25 BOX DEWATERING, CHARACTERIZATION, AND REPACKAGING (ENCLOSURE IS RECORD # 2564)	NO	BLDG 0000570 BLDG 0001319 SITE 00012

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AR_N60028_002569 CORRESPONDENCE 1	**08-03-2015**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2015 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 2570)	NO	SITE 00001 SITE 00003 SITE 00004 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00026 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033

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AR_N60028_002793 MINUTES 63	**08-18-2015**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	18 AUGUST 2015 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NUMBER 178 (INCLUDES AGENDA; VARIOUS HANDOUTS; AND CD COPY)	NO	BLDG 0000096 BLDG 0000099 BLDG 0000233 BLDG 0000342 BLDG 0000461 BLDG 0000570 BLDG 0001207 BLDG 0001209 BLDG 0001213 BLDG 0001231 BLDG 0001233 BLDG 0001321 SITE 00006 SITE 00012 SITE 00020 SITE 00024 SITE 00030 SITE 00031 SITE YF-3
AR_N60028_002485 CORRESPONDENCE 2	**08-20-2015**	DTSC - BERKELEY, CA	REVIEW AND CONCURRENCE WITH THE RESPONSES TO COMMENTS ON THE DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS (SEE RECORD # 2484 - RESPONSES TO COMMENTS)	NO	SITE 00012
AR_N60028_002486 CORRESPONDENCE 2	**08-24-2015**	CRWQCB - OAKLAND, CA	REVIEW AND CONCURRENCE WITH THE RESPONSES TO COMMENTS ON THE DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS (SEE RECORD # 2484 - RESPONSES TO COMMENTS)	NO	SITE 00012

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AR_N60028_002545 REPORT 238	**10-01-2015**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	FINAL ACTION MEMORANDUM: TIME-CRITICAL REMOVAL ACTIONS (CD COPY ENCLOSED) [SEE RECORD # 2544 - BRAC PMO WEST TRANSMITTAL LETTER]	NO	SITE 00012
AR_N60028_002598 REPORT 6121	**10-01-2015**	TREVET, INC.	FINAL 2014 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT (CD COPY ENCLOSED) [SEE RECORD # 2597 - BRAC PMO WEST TRANSMITTAL LETTER]	NO	SITE 00006 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002597 CORRESPONDENCE 2	**10-06-2015**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2014 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT (ENCLOSURE IS RECORD # 2598)	NO	SITE 00006 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002794 MINUTES 51	**10-20-2015**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	20 OCTOBER 2015 FINAL RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES, MEETING NUMBER 179 (INCLUDES AGENDA; VARIOUS HANDOUTS; AND CD COPY)	NO	BLDG 0000570 BLDG 0001201 BLDG 0001235 BLDG 0001321 SITE 00012 SITE 00024 SITE 00031
AR_N60028_002544 CORRESPONDENCE 2	**10-30-2015**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL ACTION MEMORANDUM: TIME-CRITICAL REMOVAL ACTIONS (TCRA) [ENCLOSURE IS RECORD # 2545]	NO	SITE 00012

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AR_N60028_002546 CORRESPONDENCE 2	**11-17-2015**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL 2015 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 2547)	NO	SITE 00001 SITE 00003 SITE 00004 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00026 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033

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AR_N60028_002547 REPORT 147	**11-17-2015**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	FINAL 2015 SITE MANAGEMENT PLAN (CD COPY ENCLOSED) [SEE RECORD # 2546 - BRAC PMO WEST TRANSMITTAL LETTER]	NO	SITE 00001 SITE 00003 SITE 00004 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00024 SITE 00025 SITE 00026 SITE 00027 SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033

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AR_N60028_002484 CORRESPONDENCE 9	**11-24-2015**	TRIECO - TETRA TECH EM, INC., JOINT VENTURE	RESPONSES TO COMMENTS ON THE DRAFT ACTION MEMORANDUM: REMOVAL ACTIONS (SEE RECORDS # 2481 THROUGH # 2483 - REVIEW AND COMMENTS)	NO	SITE 00012
AR_N60028_002693 REPORT 104	**11-30-2015**	CB AND I FEDERAL SERVICES, LLC	FINAL LETTER REPORT, RADIOLOGICAL SCOPING SURVEYS (CD COPY ENCLOSED) [SEE RECORD # 2692 - BRAC PMO WEST TRANSMITTAL LETTER]	NO	SITE 00012
AR_N60028_002692 CORRESPONDENCE 2	**12-03-2015**	BRAC PMO WEST	TRANSMITTAL OF THE FINAL LETTER REPORT, RADIOLOGICAL SCOPING SURVEYS (ENCLOSURE IS RECORD # 2693)	NO	SITE 00012
AR_N60028_002579 CORRESPONDENCE 1	**12-30-2015**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN (ENCLOSURE IS RECORD # 2580)	NO	SITE 00012
AR_N60028_002774 CORRESPONDENCE 1	**01-19-2016**	LANGAN TREADWELL ROLLO	REVIEW AND COMMENTS ON BEHALF OF THE TREASURE ISLAND DEVELOPMENT AUTHORITY ON THE DRAFT PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN (SEE RECORD # 2580 - DRAFT PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN)	NO	SITE 00012
AR_N60028_002775 CORRESPONDENCE 28	**01-22-2016**	DTSC - BERKELEY, CA	REVIEW AND COMMENTS ON THE DRAFT PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN (SEE RECORD # 2580 - DRAFT PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN)	NO	SITE 00012
AR_N60028_002776 CORRESPONDENCE 29	**02-02-2016**	CRWQCB - OAKLAND, CA	REVIEW AND COMMENTS ON THE DRAFT PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN (SEE RECORD # 2580 - DRAFT PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN)	NO	SITE 00012

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AR_N60028_002777 CORRESPONDENCE 20	**02-29-2016**	HELIOS RESOURCES, LTD.	RESPONSES TO COMMENTS ON THE DRAFT PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN (CD COPY ENCLOSED) [SEE RECORDS # 2774, # 2775, AND # 2776 - REVIEW AND COMMENTS]	NO	SITE 00012
AR_N60028_002780 REPORT 20	**03-01-2016**	HELIOS RESOURCES, LTD.	FINAL PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN (CD COPY ENCLOSED)	NO	BLDG 0001311 BLDG 0001313 SITE 00012
AR_N60028_002781 FACT SHEET 6	**03-01-2016**	HELIOS RESOURCES, LTD.	FINAL FACT SHEET FOR PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN, A CLEANUP PLAN FOR THE TREASURE ISLAND HOUSING AREA (CD COPY ENCLOSED)	NO	SITE 00012
AR_N60028_002687 PUBLIC NOTICE 1	**03-21-2016**	SAN FRANCISCO EXAMINER - SAN FRANCISCO, CA	FINAL PUBLIC NOTICE ANNOUNCING THE AVAILABILITY OF THE PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN FOR PUBLIC COMMENT (CD COPY ENCLOSED)	NO	SITE 00012
AR_N60028_002795 REPORT 668	**05-12-2016**	CB AND I FEDERAL SERVICES, LLC	FINAL ACCIDENT PREVENTION PLAN, BASEWIDE RADIOLOGICAL SUPPORT (CD COPY ENCLOSED)	NO	SITE 00012 SITE 00031
AR_N60028_002778 CORRESPONDENCE 3	**06-30-2016**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2015 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT (ENCLOSURE IS RECORD # 2779)	NO	SITE 00006 SITE 00012 SITE 00021 SITE 00024
AR_N60028_002801 REPORT 669	**08-01-2016**	CB AND I FEDERAL SERVICES, LLC	FINAL WORK PLAN, BASEWIDE RADIOLOGICAL SUPPORT (INCLUDES SITEWIDE RADIATION PROTECTION PLAN, CBI-2005-0014-0003; AND CD COPY)	NO	SITE 00012

TREASURE ISLAND

DRAFT ENVIRONMENTAL RESTORATION RECORD PUBLIC / IR INDEX - UPDATE (SORTED BY RECORD DATE/RECORD NUMBER)

ADMINISTRATIVE RECORD INDEX FOR SITE 12

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
AR_N60028_002786 CORRESPONDENCE 2	**08-18-2016**	BRAC PMO WEST	TRANSMITTAL OF THE DRAFT 2016 SITE MANAGEMENT PLAN (ENCLOSURE IS RECORD # 2787)	NO	BLDG 0000530 SITE 00001 SITE 00002 SITE 00003 SITE 00004 SITE 00005 SITE 00006 SITE 00007 SITE 00008 SITE 00009 SITE 00010 SITE 00011 SITE 00012 SITE 00013 SITE 00014 SITE 00015 SITE 00016 SITE 00017 SITE 00018 SITE 00019 SITE 00020 SITE 00021 SITE 00022 SITE 00023 SITE 00024 SITE 00025 SITE 00026 SITE 00027

UIC No. _ Rec. No. Record Type Approx. # Pages	Record Date	Author Affiliation	Title	Imaged?	Sites
					SITE 00028 SITE 00029 SITE 00030 SITE 00031 SITE 00032 SITE 00033 UST 0000238 UST 0000240A UST 0000240B UST 0000248A UST 0000248B UST 0000248C UST 0000248D

Total Estimated Record Page Count: 185,318

Total Records: 730

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No Keywords
Sites=SITE 00012
No Distribution
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No Litigation Case Number

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ATTACHMENT B
REFERENCES

(*Provided on CD*)

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Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
1	**Groundwater is not a potential source of drinking water**	Section 2.2	Final Feasibility Study for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. March 2014. Section 2.1.4.4.
2	**groundwater monitoring**	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Section 1.3.9.
3	**investigation into the elevated concentrations of arsenic**	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Section 1.3.10.
4	**chemicals that exceeded the screening criteria**	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Executive Summary, pages ES-5 through ES-7.
5	**Chemicals in soil exceeding the screening criteria**	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Table 4-4.
6	**Chemicals in groundwater exceeding the screening criteria**	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Table 4-30.
7	**Chemicals in soil gas exceeding the screening criteria**	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Table 4-31.
8	**rubbish area**	Table 1	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Figures 4-1b and 4-2b.
9	**contamination extended underneath buildings**	Table 1	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Sections 4.3 through 4.3.4.
10	**benzene in soil gas**	Table 1	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Section 4.5.
11	**arsenic in groundwater**	Table 1	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Section 4.6.
12	**Halyburton Court area**	Table 1	Work Plan, Removal Action of PCB-Contaminated Soil, Halyburton Court Area, Treasure Island, California, Revision B. IT Corporation. June 2000. Figures 2 and 3.
13	**in the area**	Table 1	Final Post-Construction Report, Time-Critical Removal Action of PCB- and PAH-Contaminated Soil, Site 12 TIHDI Buildings, Treasure Island, San Francisco, California. IT Corporation. June 21, 2002. Figures 1 through 5.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
14	**Water Board concurs**	Section 2.4	Letter of Concurrence that Groundwater at the Naval Station Treasure Island, San Francisco, Meet the Exemption Criteria in the SWRCB Sources of Drinking Water Resolution 88-63. From Curtis T. Scott, Division Chief, Groundwater Protection and Waste Containment Division, California Regional Water Quality Control Board, San Francisco Bay Region. To Ms. Ann Klimek, Environmental Business Line Team Leader, Southwest Division, Naval Facilities Engineering Command. January 23, 2001.
15	**risk CSM**	Section 2.5	Final Feasibility Study for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. March 2014. Figure 3-2.
16	**quantitative baseline HHRA**	Section 2.5.1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Appendix C, Sections C1.0 through C7.7.
17	**Cancer risks, noncancer health hazards, and lead**	Section 2.5.1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Appendix C, Section C8.0 through C8.3.
18	**risks for each EU, AOI**	Section 2.5.1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Appendix C, Section C9.0 through C9.26.2.
19	**uncertainties**	Section 2.5.1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Appendix C, Section C10.0 through C10.10.
20	**aquatic habitat assessment**	Section 2.5.2	Final Remedial Investigation Offshore Sediments Operable Unit, Naval Station treasure Island, San Francisco, California, Volume I (Text, Tables, Figures). Tetra Tech EM Inc. December 28, 2001. Section 14.4.
21	**protective of ecological species**	Section 2.5.2	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Section 3.1.3 and Table 3-3.
22	**sediment**	Section 2.5.2	Installation Restoration Site 13 Offshore Sediments Record of Decision, Naval Station Treasure Island, Treasure Island, San Francisco, California. Department of the Navy. April 7, 2005. Sections 1.4 and 1.5.
23	**potential risk to aquatic receptors**	Section 2.5.2	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Sections 7.2 through 7.2.3 and Table 7-1.
24	**Net Present Value Cost: $2,419,000**	Table 5	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-2.
25	**Net Present Value Cost: $4,936,000**	Table 5	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-3.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
26	**Net Present-Value Cost: $8,425,000**	Table 6	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-4.
27	**Net Present-Value Cost: $3,611,000**	Table 6	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-5.
28	**Net Present-Value Cost: $7,359,000**	Table 6	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-6.
29	**Net Present-Value Cost: 5,595,000**	Table 6	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-7.
30	**sustainability of each soil and groundwater alternative**	Section 2.9.2.2	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Sections 2.8 through 2.8.2.

Note:

[1] **Bold blue** text indicates hyperlinks available on reference CD to detailed site information contained in the publicly available Administrative Record.

For access to information contained in the Administrative Record for Treasure Island, please contact:

Commanding Officer
Naval Facilities Engineering Command, Southwest
Attn: Ms. Diane Silva, Command Records Manager, Code EV33
1220 Pacific Highway (NBSD Building 3519)
San Diego, California 92132
Phone: (619) 556-1280
E-mail: diane.silva@navy.mil

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
1	**Groundwater is not a potential source of drinking water**	Section 2.2	Final Feasibility Study for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. March 2014. Section 2.1.4.4.

2.1.4.3 Treasure Island Tidal Influence

In August 1995, a 72-hour tidal influence study was performed at 11 monitoring wells at NAVSTA TI and one monitoring station in the Bay (PRC, 1995). Tidal fluctuations in the groundwater table between high and low tides ranged from 1.81 feet at 30 feet from the Bay shoreline to 0.12 foot at 250 feet from the Bay shoreline; the tidal fluctuation in the Bay was measured at 5.37 feet during the corresponding period. Temporary tidal effects on groundwater within 200 to 250 feet of the shoreline produced a steeper groundwater gradient after low tide and a decline of and reversal in the groundwater gradient after high tide.

The study also estimated tidal mixing of fresh groundwater and brackish Bay water based on analysis for total dissolved solids (TDS), conductivity, and salinity. At NAVSTA TI, the tidal mixing estimates showed a 13 percent tidal mixing (13 percent brackish Bay water mixed with 87 percent fresh groundwater) in areas within 30 feet of the shoreline and up to 2 percent tidal mixing in areas 44 to 250 feet from the shoreline. Tidal mixing was not observed at wells farther than 250 feet from the shoreline (PRC, 1995). TDS and salinity of the Bay water collected during the tidal influence study were 28,400 milligrams per liter (mg/L) and 2.67 percent, respectively.

Between December 2000 and March 2001, the Navy conducted an investigation that focused on estimating the extent and degree of the physical mixing of surface water and groundwater within the tidal mixing zone (TMZ) at TI (TtEMI, 2002). The 2001 TMZ study measured tidal influence on water levels within approximately 100 feet of the shoreline to help understand the physical mixing processes; however, this study was not intended to duplicate the results of the 1995 study, which measured the inland extent of pressure wave propagation caused by tidal influence at distances beyond the TMZ (PRC, 1995). The 2001 TMZ study estimated that physical mixing of surface water and groundwater took place over distances that ranged from 60 to 150 feet inland from the NAVSTA TI mean lower low water shoreline (TtEMI, 2002). Estimates of the degree of tidal mixing of surface water and groundwater for TI ranged from 10 to 17 percent, except for one transect in the southeastern portion of TI where tidal mixing was conservatively estimated at 43 percent; however, conditions encountered in this transect were considered unusual and representative only of the area immediately surrounding the transect. As a result, tidal mixing at IR Site 12 is anticipated to range from 10 to 17 percent. Figure 2-4 presents the estimated extent of tidal mixing at TI.

2.1.4.4 Treasure Island Groundwater Quality and Beneficial Uses

In 1996, the Regional Water Quality Control Board, San Francisco Bay (RWQCB) conducted a "Pilot Beneficial Use Designation Project" for several groundwater basins in San Francisco and northern San Mateo County, including NAVSTA TI and YBI (RWQCB, 1996). Results of the report indicated the use of groundwater for municipal and domestic supply at NAVSTA

TI would be limited by (1) the small volume of fresh groundwater available, (2) the likelihood of saltwater intrusion, and (3) the potential future ground improvements for stability (such as stone columns and dynamic compaction). Consequently, the report recommended that the *Bay Basin Water Quality Control Plan* be revised to no longer designate groundwater at NAVSTA TI as a potential municipal or domestic water supply, but to retain its designation for potential agricultural, process, and industrial supply (RWQCB, 2001). Appendix A includes a letter from RWQCB providing concurrence that groundwater at NAVSTA TI is not a potential source of drinking water pursuant to State Water Resources Control Board (SWRCB) Resolutions No. 88-63 and 89-39 (SWRCB, 1988).

2.1.5 Geology and Hydrogeology of IR Site 12

This section summarizes the geology and hydrogeology of IR Site 12. The geology for IR Site 12 was evaluated based on a review of the boring and trenching logs from the various previous investigations as included in the Final RI. The hydrogeology for IR Site 12 is based on the basewide hydrogeology for NAVSTA TI.

2.1.5.1 IR Site 12 Geology

Asphalt, concrete, lawns, and landscaping provide surface cover at IR Site 12 and are underlain by dredged fill and shoal deposits predominantly consisting of fine- to medium-grained sands, with varying proportions of shell fragments, silt, and clay. The dredged fill was emplaced on top of the shoal sands during the construction of TI, beginning in 1936. Younger Bay Mud consisting of interbedded sand, silt, and clay underlies the shoal sands. Refer to Figures 2-1 and 2-2 for general geologic cross sections of TI.

Soils encountered in borings advanced to depths up to 15 feet bgs consist primarily of tan to grayish-brown, fine- to coarse-grained, loose sands, with some shell fragments and gravel (SulTech, 2006a). In addition to the solid waste disposal areas (SWDAs), lesser amounts of solid waste have been found in other areas of IR Site 12, including near Buildings 1254 and 1219.

2.1.5.2 IR Site 12 Hydrogeology

Groundwater at IR Site 12 is unconfined, with an average depth of approximately 6.5 feet bgs. According to field logs describing the installation of monitoring wells and soil borings during the Phase IIB RI (PRC, 1997), the estimated depth to groundwater during drilling at IR Site 12 ranged from about 2.5 to 7.5 feet bgs.

Groundwater flow and the overall hydraulic gradient observed at IR Site 12 are characteristic of that of TI as described in Section 2.2.4.2. Groundwater generally flows in a radial pattern from the center of TI to the shoreline. Perched groundwater conditions above the shallow water table exist locally because of the presence of relatively impermeable silt and clay lenses. Groundwater recharge occurs primarily from precipitation infiltration, with some minor contributions from irrigation and leaking subsurface storm drains (PRC, 1993). Groundwater elevation contours for December 2012 are presented on Figure 2-3.

From September to October 2003, based on results from previous trenching and sampling investigations, the Navy conducted additional trenching, excavating 581 exploration trenches

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
2	groundwater monitoring	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Section 1.3.9.

1.3.9 Groundwater Sampling

Groundwater monitoring has been conducted at IR Site 12 since 1992. Historically, the groundwater wells have been monitored on an annual, semiannual, and quarterly basis. The following areas within IR Site 12 have been monitored for groundwater contamination:

- SWDA 1207/1209
- SWDA A&B
- Building 1311/1313 Petroleum Area
- Mariner Drive Petroleum Area
- SWDA 1231/1233
- Former Storage Yard Area (Halyburton/Bigelow Court)

Within SWDA A&B and SWDA 1207/1209, contamination of groundwater is believed to have resulted primarily from former waste disposal and petroleum releases associated with the waste disposal. Analysis of the data from 2004 from sampling of groundwater monitoring wells in these SWDAs indicated that elevated concentrations of metals were detected in groundwater samples. Because of the close proximity to the Bay, there could be a potential threat to ecological receptors in the Bay (SulTech 2006b).

Monitoring wells were installed at IR Site 12 in the following phases:

- To investigate for potential metal and TPH contamination, four monitoring wells (12-MW01 through 12-MW04) were installed in 1992 in northern portion of the site during Phase I of the IR Site 12 RI. These wells were installed to characterize the groundwater upgradient of and beneath the location of a former incinerator and trash trailer that had been identified on aerial photographs. This area was later designated as SWDA 1231/1233.
- To investigate potential contamination of VOCs, SVOCs, TPH, explosives, metals, and TDS, 12 monitoring wells (12-MW05 through 12-MW16) were installed in 1995 during Phase IIB of the IR Site 12 RI. These wells were for the purpose of characterizing the Mariner Drive Petroleum Area and for further characterization of SWDA 1231/1233.

- Two additional monitoring wells (12-MW17 and 12-MW18) were installed in June 1998 to replace wells 12-MW12 and 12-MW02, which were decommissioned because of structural damage.
- Monitoring well 12-MW19 was installed in November 1998 as part of the characterization of SWDA 1207/1209.
- Three monitoring wells (12-MW20 through 12-MW22) were installed in November 1998 in support of the characterization of the Building 1311/1313 Petroleum Area.
- Two monitoring wells (12-MW23 and 12-MW24) were installed in August 1999 as part of the characterization of the Building 1311/1313 Petroleum Area.
- Nine piezometers (12-MW25A1, -A2, -A3; 12-MW26A1, -A2, -A3; and 12-MW27A1, -A2, -A3) were installed between December 2000 and January 2001 for the TMZ study.
- Four monitoring wells (12-MW28 through 12-MW31) were installed in April 2001 as part of the characterization of SWDA A&B. Monitoring well 12-MW30 replaced well 12-MW10, which was inadvertently destroyed in September 1999 during soil excavation.
- Monitoring well 12-MW32 was installed in April 2001 as part of the characterization of the Former Storage Yard Area.
- Monitoring wells 12-MW33 and 12-MW34 were installed in August 2002 in the Building 1311/1313 Petroleum Area to evaluate the relationship between TPH and arsenic in groundwater.

Monitoring wells at IR Site 12 are screened across the top of the water table. On average, monitoring wells are screened from 3.1 to 13.1 feet bgs.

In 2005, a long-term monitoring optimization (LTMO) study of the IR Site 12 groundwater monitoring program was conducted (SulTech 2005). At the time, 19 monitoring wells were being monitored. The LTMO study proposed 11 wells for annual sampling toward the end of the dry season. Five wells that showed increasing trends in concentrations were proposed for semiannual sampling, and three wells were proposed to be temporarily removed from the monitoring program. The Navy did not propose to permanently decommission any monitoring wells at the time.

The more recent reported groundwater monitoring events are as follows:

1.3.9.1 2007 Annual Groundwater Monitoring

Groundwater concerns were investigated in August and November 2007 in two former SWDAs (SWDA 1207/1209 and SWDA A&B) and two petroleum-affected areas (Building 1311/1313 Petroleum Area and Mariner Drive Petroleum Area) at IR Site 12 (Pacific Treatment Environmental Services, Inc. 2008). In SWDA A&B, ongoing removal actions prohibited access to the monitoring wells, thus limiting evaluation of groundwater concentrations in this area in 2007.

1.3.9.2 2008 Annual Groundwater Monitoring

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
3	**investigation into the elevated concentrations of arsenic**	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Section 1.3.10.

In the Mariner Drive Petroleum Area, TPH was not analyzed in groundwater samples from monitoring wells 12-MW15 and 12-MW16 because previous groundwater monitoring events indicated there were no elevated concentrations of TPH in groundwater samples collected from these monitoring wells.

1.3.9.3 2009 Annual Groundwater Monitoring

Groundwater was sampled in four groundwater monitoring wells located in the Building 1311/1313 area during June 2009. Groundwater was also sampled in 13 sitewide groundwater monitoring wells located in two former SWDAs (SWDA 1207/1209 and SWDA A&B) and two petroleum-affected areas (Building 1311/1313 Petroleum Area and Mariner Drive Petroleum Area) at IR Site 12 during December 2009 (Trevet 2010b).

SWDA A&B had five groundwater monitoring wells designated for sample collection, but because of the NTCRA activities being conducted in this area, only monitoring well 12-MW31 was accessible for sampling.

Groundwater monitoring continued through 2010; however, analytical data for 2010 were not available to include in this RI report because the 2010 groundwater monitoring report had not been finalized.

1.3.10 Investigation of Arsenic in Groundwater

Investigations have identified elevated concentrations of arsenic in groundwater in the vicinity of Buildings 1311 and 1313 (Figure 1-5). In addition to the elevated arsenic concentrations in groundwater, elevated TPH concentrations in soil and groundwater have been reported. The former waste oil tank is the most likely source of TPH contamination in the Building 1311/1313 Petroleum Area. No documentation is available on the size, use, or removal of the UST. The UST was, however, described as an "abandoned, buried oil tank" in a geotechnical engineering report prepared for construction of housing units on the site (Lowry and Associates 1971).

In 2005, an investigation of elevated concentrations of arsenic in groundwater was conducted in the Building 1311/1313 Petroleum Area (SulTech 2005). In addition, TPH was detected at elevated concentrations in soils and groundwater in this area. Elevated concentrations of arsenic in groundwater in this area are believed to be a result of the reducing environment created by biodegradation of TPH at the site, which tends to mobilize arsenic. The investigation evaluated the fate of arsenic in groundwater and its potential to affect surface water resources in the Bay.

The concentration of arsenic in groundwater is elevated inland from the TMZ within the Building 1311/1313 Petroleum Area in IR Site 12 as a result of mobilization of arsenic under reducing conditions created by biodegradation of TPH. The investigation of arsenic in groundwater resulted in the following conclusions:

- Arsenic is being attenuated within the TMZ. The decrease in concentrations of arsenic in groundwater within the TMZ is greater than the decrease caused only by physical mixing of surface water and groundwater the TMZ. The precipitation of iron minerals and adsorption of arsenic are the likely mechanisms, in addition to physical mixing, that are causing the decrease in concentrations of arsenic in the TMZ.
- The degree of tidal mixing and the potential for attenuation of arsenic increase with proximity to the shoreline. Arsenic is attenuated under the more oxidizing conditions present near the shoreline; therefore, it is unlikely that arsenic discharges to the Bay will occur at concentrations greater than the ambient concentration of arsenic in groundwater at NAVSTA TI (15 micrograms per liter [µg/L]).

Arsenic in groundwater is likely attenuated as it approaches the shoreline. After a bench-scale study was completed in the spring of 2007 to address arsenic and TPH contamination in soil and groundwater, the Navy finalized a treatability study work plan (Shaw 2008) to conduct further testing. In December 2008, air sparge wells were installed near the shoreline wells close to Buildings 1311 and 1313, but testing was delayed due to rain.

In January 2009 baseline groundwater samples were collected from shoreline monitoring wells (12-MW05, 33, 34, 35, 36, and 37) for analysis of VOCs and TPH. Other monitoring wells in the area were sampled for analysis of total suspended solids (TSS) and metals. In April 2009, a measurable layer of free product was observed in well 12-MW38 and about 1.5 gallons of free product was removed. As a result, the arsenic treatability study was postponed and the focus of the investigation became the delineation of dissolved petroleum and petroleum free product in the area. Efforts to identify a potential source of the petroleum focused on a suspected removed UST; however, a geophysical survey did not identify any suspect buried tanks (Shaw 2011).

In January 2010, five new wells were installed near Building 1313 (12-MW 39 through 43) in the area near monitoring well 12-MW38, where measurable free product was observed in 2008 and again in 2010, to delineate the lateral extent of TPH. In February 2010, samples from four shoreline wells (12-MW34 through 37) were analyzed for dissolved metals and TSS. In June 2010, samples from monitoring wells 12-MW38 through 43 were analyzed for TPH and VOCs. The results of the June 2010 sampling of these wells are included in Section 4.5.4.

In November 2010, four shallow soil gas samples were collected from 3 feet bgs from three sample points directly adjacent to the southern end of Building 1313, as a result of the observation of free product in 12-MW38. These samples were analyzed for benzene, toluene, ethylbenzene, and xylenes, methyl tert-butyl ether, naphthalene, and total volatile petroleum hydrocarbons and biogenic gases. Validated soil gas sample data were not available in time to include in the IR Site 12 RI data set. The evaluation of risk and nature and extent of contamination are therefore not included in this RI. The following soil gas information was reported by Shaw (Shaw 2011):

- Total volatile Petroleum Hydrocarbons were detected at concentrations ranging from 72,700 to 414,000 µg/m^3
- Ethylbenzene was detected at concentrations ranging from 530 to 2,900 µg/m^3
- Toluene was detected at concentrations ranging from 12,000 to 91,000 µg/m^3
- Xylenes were detected at concentrations ranging from 2,110 to 9,500 µg/m^3
- Elevated carbon dioxide and depleted oxygen concentrations were detected
- Methane was not detected in any of the samples

This area is identified for further investigation and remedial alternatives will be developed and evaluated in the FS.

1.3.11 Historical Radiological Assessment

A historical radiological assessment (HRA) was conducted in 2006 to designate sites on NAVSTA TI as either impacted by radionuclides, meaning the site has or at one time had the potential for radioactive contamination, or non-impacted, meaning there is no reasonable possibility for residual radioactive contamination. The HRA defined the extent of past operations, assessed the likelihood of potential contamination migration pathways, and recommended future actions. The HRA found the four SWDAs could contain radioluminescent devices, although it was considered unlikely because NAVSTA TI's mission was training and not the maintenance and repair of ships, during which such devices were removed and disposed of in base landfills. Therefore, precautionary radiation surveys were recommended during remedial or removal actions at these areas (Weston 2006).

The HRA also discussed the USS Pandemonium, a full-scale, above-the-waterline mockup of a 173-foot patrol craft training ship that had been "launched" in 1956. It was located on the northwest part of TI (Figure 1-3) but had been relocated to the western side of the island adjacent to Building 461 by 1970, where it was eventually demolished after 1966 (Weston 2006). Both locations were evaluated in the HRA and determined to be non-impacted areas and therefore were not investigated for radiological contamination.

Refer to Section 1.3.13 for a discussion of the NTCRA activities undertaken as a result of this assessment.

1.3.12 Screening-Level Ecological Risk Assessment

Screening for potential adverse effects of chemicals in soil on the soil invertebrate community, terrestrial plants, and birds and mammals was conducted as part of SLERA for NAVSTA TI (SulTech 2007b). An ecological site survey was conducted in March 2006, which confirmed that habitat at IR Site 12 consists of residential areas with multifamily houses, landscaped lawns, and landscaped vegetation. The SLERA also stated that because of its residential and industrial landscape, NAVSTA TI is not a natural ecosystem; rather, it is a man-made island built from dredge material from the Bay that has never supported a natural ecosystem or provided habitat for ecologically relevant receptors. In addition, future exposure would be limited to species adapted to urban, landscaped habitats because urban redevelopment is planned for each of the

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
4	**chemicals that exceeded the screening criteria**	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Executive Summary, pages ES-5 through ES-7.

GEOLOGY AND HYDROGEOLOGY

TI is a relatively flat manmade island, consisting primarily of material dredged from the Bay and retained by a perimeter of rock and sand dikes. TI was constructed on the Yerba Buena Shoals, a sand spit extending north and northwest of YBI. Dredging and construction of TI, directed by the U.S. Army Corps of Engineers, began in 1936 and was completed in 1937. TI ranges in elevation from 9 to 12 feet above msl based on the National Geodetic Vertical Datum of 1929. Subsurface materials at TI can be divided into the following five units, listed from youngest to oldest:

- Fill (Dredged Sand Fill)
- Shoal Sands (Yerba Buena Shoal Sands)
- Younger Bay Mud
- Older Bay Mud
- Franciscan Assemblage

Buildings, asphalt, concrete, riprap, lawns, and landscaping provide surface cover at IR Site 12 and are underlain by dredged fill and shoal deposits predominantly consisting of fine- to medium-grained sands, with varying proportions of shell fragments, silt, and clay. The dredged fill was emplaced on top of the shoal sands during construction of TI, which began in 1936. Younger Bay Mud consisting of interbedded sand, silt, and clay underlies the shoal sands.

Groundwater at NAVSTA TI and at IR Site 12 is unconfined, with an average depth of approximately 6.5 feet below ground surface (bgs). Based on the results of a tidal mixing zone study in 2001, it was estimated that physical mixing of surface water and groundwater takes place over distances that ranged from 60 to 150 feet inland from the NAVSTA TI mean lower low water shoreline. Estimates of the degree of tidal mixing of surface water and groundwater for NAVSTA TI ranged from 10 to 17 percent at wells positioned about 50 feet from the shoreline, except at a transect in the southeastern portion of NAVSTA TI. The overall hydraulic gradient between the center of the island and the shoreline is greater during the wet season than the dry season because of seasonal recharge.

NATURE AND EXTENT OF CONTAMINATION IN SOIL, GROUNDWATER, AND SOIL GAS

This RI report presents the analytical results of numerous investigations conducted at IR Site 12 to evaluate soil and soil gas, as well as groundwater under the basewide groundwater monitoring program. A total of 4,039 samples (3,607 soil samples, 322 water samples, and 110 soil gas samples) associated with IR Site 12 were collected and analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOC), semivolatile organic compounds, pesticides,

polychlorinated biphenyl (PCB), metals, explosives, and polychlorinated dioxins and furans (collectively referred to as "dioxins") between 1998 and 2010.

For purposes of delineating the nature and extent of contamination in soil, residential risk-based concentrations (RBC) based on EPA criteria were used. Chemical-specific approaches were used to screen TPH, polycyclic aromatic hydrocarbons (PAH), PCBs, metals, dioxins, and dioxin-like PCBs. For the purposes of delineating the nature and extent of groundwater, the Navy compiled groundwater screening criteria under the NAVSTA TI groundwater monitoring program to address the exposure of aquatic organisms living along the shoreline that may be exposed to chemicals if contaminated groundwater discharges to the Bay. For delineating the nature and extent of soil gas, similar to the approach for soil, residential RBCs based on EPA criteria were used.

Radionuclide contamination in soil and groundwater at IR Site 12 is not addressed in this RI report. Radium 226 was found in soil at levels above background during the NTCRA conducted in SWDAs 1231/1233, 1207/1209, and A&B. The radium 226 is associated with the debris removed from the SWDAs. The radionuclide contamination in the SWDAs are being investigated and addressed separately under the Navy's radiological program. A radiological FSS of the SWDAs will be performed in accordance with MARSSIM to confirm removal of radiological items associated with the SWDA 1231/1233, 1207/1209, A&B, and Bigelow Court debris areas. In addition, the Navy expects to conduct a site-wide radiological survey at IR Site 12. The chemicals exceeding screening criteria in soil, groundwater, and soil gas at IR Site 12 are listed below.

Analyte Group	Chemical Exceeding Comparison Criteria	Soil	Groundwater	Soil Gas
TPH	TPH as gasoline	X		
	TPH as diesel	X		
	TPH as motor oil	X		
	Total TPH		X	
VOCs	Benzene			X
	Chloroform			X
PAH	BAP(EQ)	X		
PCBs	Total Aroclors	X		
Pesticides	DDD	X		
	Alpha-BHC	X		
	Alpha- and Gamma Chlordane	X		
	Heptachlor	X		
	Heptachlor Epoxide	X		

Analyte Group	Chemical Exceeding Comparison Criteria	Soil	Groundwater	Soil Gas
Metals	Aluminum		X	
	Antimony	X		
	Arsenic	X	X	
	Barium		X	
	Calcium*		X	
	Chromium	X	X	
	Cobalt	X	X	
	Copper	X	X	
	Iron	X	X	
	Lead	X		
	Magnesium*		X	
	Manganese	X	X	
	Molybdenum		X	
	Nickel	X	X	
	Potassium*		X	
	Silver		X	
	Sodium*		X	
	Vanadium		X	
	Zinc		X	
Dioxins	2,3,7,8-TCDD TEQ	X		

Notes:

* Chemical is an essential nutrient and thus not discussed in this report.

BAP(EQ)	Benzo(a)pyrene equivalent	TCDD	Tetrachlorodibenzo-*p*-dioxin
BHC	Benzene hexachloride	TEQ	Toxicity equivalent quotient
DDD	Dichlorodiphenyldichloroethane	TPH	Total petroleum hydrocarbon
PAH	Polycyclic aromatic hydrocarbon	VOC	Volatile organic compound
PCB	Polychlorinated biphenyl		

EVALUATION OF CONTAMINANT FATE AND TRANSPORT

The physical and chemical characteristics, along with the toxicological effects, of each of the chemicals exceeding screening criteria (listed above) are discussed in later sections of this report. An analysis of physical and chemical characteristics influencing fate transport processes is also presented in this report. In general, chemicals exceeding screening criteria are retained strongly by soil and are not expected to leach to groundwater or migrate off site to the Bay.

TABLE 4-4: STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - SITEWIDE

IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Analyte	Number of Detections/ Analyses	Maximum Detected Concentration	Average of Detected Concentration	Minimum Detection Limit	Maximum Detection Limit	Risk Based Screening Concentration [a]	TI Ambient Level or TI Action Level [a]	Number of Detections Above Risk-Based Screening Concentration	Number of Detections Above TI Ambient Level or TI Action Level	Number of Nondetections Above Risk-Based Screening Concentration [b]
Volatile Organic Compounds (mg/kg)										
1,1,2,2-TETRACHLOROETHANE	1/811	0.002 J	0.0020	0.0033	5.1	0.49	NA	0	--	13
1,2,4-TRICHLOROBENZENE	3/826	0.11 J	0.037	0.0033	100	17	NA	0	--	1
1,2,4-TRIMETHYLBENZENE	6/646	1	0.17	0.0033	1.5	62	NA	0	--	0
1,2-DICHLOROBENZENE	1/844	0.14 J	0.14	0.0033	100	1,800	NA	0	--	0
1,3,5-TRIMETHYLBENZENE	3/646	0.003 J	0.0015	0.0033	1.5	610	NA	0	--	0
1,3-DICHLOROBENZENE	1/646	0.0006 J	0.00060	0.0033	1.5	1,800	NA	0	--	0
1,4-DICHLOROBENZENE	4/826	0.054 J	0.021	0.0033	100	2.4	NA	0	--	3
2-BUTANONE	37/751	0.04 J	0.0060	0.01	5.1	24,000	NA	0	--	0
2-HEXANONE	2/751	0.17 J	0.085	0.01	5.1	180	NA	0	--	0
4-METHYL-2-PENTANONE	1/751	0.0007 J	0.00070	0.01	5.1	4,300	NA	0	--	0
ACETONE	65/768	0.13 J	0.022	0.01	5.1	49,000	NA	0	--	0
BENZENE	2/818	0.16 J	0.083	0.0006	5.1	0.30	NA	0	--	12
BROMOFORM	1/811	1.5 J	1.5	0.0033	5.1	0.44	NA	1	--	12
BROMOMETHANE	2/811	0.44 J	0.44	0.0033	5.1	7.2	NA	0	--	0
CARBON DISULFIDE	4/165	0.003 J	0.0023	0.0055	5.1	800	NA	0	--	0
CHLOROFORM	23/811	0.007	0.0021	0.0033	5.1	0.29	NA	0	--	13
CIS-1,2-DICHLOROETHENE	2/646	0.007	0.0060	0.0033	1.5	120	NA	0	--	0
DIBROMOCHLOROMETHANE	1/811	0.43 J	0.43	0.0033	5.1	0.67	NA	0	--	12
ETHYLBENZENE	18/818	0.32 J	0.019	0.0006	5.1	5.2	NA	0	--	0
ISOPROPYLBENZENE	6/646	2	0.39	0.0033	1.5	1,900	NA	0	--	0
METHYL-TERT-BUTYL ETHER	8/725	0.078	0.012	0.0006	2.1	42	NA	0	--	0
METHYLENE CHLORIDE	3/811	0.024	0.018	0.0033	5.1	4.9	NA	0	--	1
N-BUTYLBENZENE	3/646	2	0.81	0.0033	1.5	3,000	NA	0	--	0
N-PROPYLBENZENE	4/646	3	0.90	0.0033	1.5	3,400	NA	0	--	0
PARA-ISOPROPYL TOLUENE	8/646	0.38 J	0.054	0.0033	1.5	1,900	NA	0	--	0
SEC-BUTYLBENZENE	12/646	6.1	0.63	0.0033	1.5	1,900	NA	0	--	0
STYRENE	54/811	0.036	0.0048	0.0033	5.1	5,600	NA	0	--	0
TERT-BUTYLBENZENE	2/646	0.43 J	0.22	0.0033	1.5	1,900	NA	0	--	0
TETRACHLOROETHENE	5/811	0.013	0.0060	0.0033	5.1	0.48	NA	0	--	13

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
5	Chemicals in soil exceeding the screening criteria	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Table 4-4.

TABLE 4-4: STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - SITEWIDE (Continued)

IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Analyte	Number of Detections/ Analyses	Maximum Detected Concentration	Average of Detected Concentration	Minimum Detection Limit	Maximum Detection Limit	Risk Based Screening Concentration [a]	TI Ambient Level or TI Action Level [a]	Number of Detections Above Risk-Based Screening Concentration	Number of Detections Above TI Ambient Level or TI Action Level	Number of Nondetections Above Risk-Based Screening Concentration [b]
Volatile Organic Compounds (mg/kg)										
TOLUENE	20/835	0.014	0.0022	0.0006	5.1	4,000	NA	0	--	0
TRANS-1,2-DICHLOROETHENE	2/646	0.014	0.012	0.0033	1.5	150	NA	0	--	0
TRICHLOROETHENE	9/811	0.014	0.0042	0.0033	5.1	1.2	NA	0	--	8
XYLENE (TOTAL)	46/818	0.95 J	0.027	0.001	5.1	620	NA	0	--	0
Petroleum Hydrocarbons (mg/kg)										
Diesel/Motor Oil Range (extractables)										
DIESEL RANGE ORGANICS	154/372	43,200	1,800	0.0062	5,100	1,380	NA	27	--	1
MOTOR OIL RANGE ORGANICS	221/343	26,000	470	0.012	5,100	1,900	NA	8	--	0
Gasoline Range (purgeables)										
GASOLINE RANGE ORGANICS	75/328	3,600	109	0.051	1,200	1,030	NA	2	--	0
Semivolatile Organic Compounds (mg/kg)										
1-METHYLNAPHTHALENE	2/8	0.003	0.0030	0.002	0.003	15	NA	0	--	0
1-METHYLPHENANTHRENE	2/9	0.024 J	0.013	0.002	0.003	16,000	NA	0	--	0
2,3,5-TRIMETHYLNAPHTHALENE	1/9	0.097	0.097	0.002	0.003	220	NA	0	--	0
2,6-DIMETHYLNAPHTHALENE	2/8	0.011	0.0065	0.002	0.003	220	NA	0	--	0
2-METHYLNAPHTHALENE	41/2662	29	2.0	0.002	100	220	NA	0	--	0
ACENAPHTHENE	65/2729	1.8 J	0.15	0.002	100	3,300	NA	0	--	0
ACENAPHTHYLENE	40/2728	0.58 J	0.071	0.002	100	3,300	NA	0	--	0
ANTHRACENE	239/2729	1.4	0.097	0.002	100	16,000	NA	0	--	0
BENZO(A)ANTHRACENE	796/2725	8.17	0.12	0.002	100	0.36	NA	31	--	106
BENZO(A)PYRENE	719/2722	9.61	0.14	0.002	100	0.036	NA	510	--	1154
BENZO(B)FLUORANTHENE	784/2723	8.33	0.14	0.002	100	0.36	NA	42	--	106
BENZO(E)PYRENE	9/9	0.088 J	0.016	0.002	0.003	1,600	NA	0	--	0
BENZO(G,H,I)PERYLENE	505/2722	1.9	0.080	0.002	100	1,600	NA	0	--	0
BENZO(K)FLUORANTHENE	572/2722	9.59	0.15	0.002	100	0.36	NA	37	--	109
BIS(2-ETHYLHEXYL)PHTHALATE	7/228	0.43	0.15	0.13	100	34	NA	0	--	2
BUTYLBENZYLPHTHALATE	1/211	0.016 J	0.016	0.33	100	250	NA	0	--	0
CARBAZOLE	4/198	0.25 J	0.13	0.33	100	1,400	NA	0	--	0
CHRYSENE	792/2725	7.11	0.14	0.002	100	3.6	NA	2	--	10

TABLE 4-4: STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - SITEWIDE (Continued)

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Semivolatile Organic Compounds (mg/kg)										
DI-N-OCTYLPHTHALATE	1/208	0.017 J	0.017	0.33	100	34	NA	0	--	2
DIBENZ(A,H)ANTHRACENE	109/2721	1	0.072	0.002	100	0.059	NA	26	--	1127
DIBENZOFURAN	7/234	3 J	0.71	0.005	100	55	NA	0	--	1
DIBENZOTHIOPHENE	2/9	0.013	0.0075	0.002	0.003	2,200	NA	0	--	0
FLUORANTHENE	915/2729	15.5	0.22	0.002	100	2,200	NA	0	--	0
FLUORENE	80/2729	17	0.98	0.002	100	2,200	NA	0	--	0
INDENO(1,2,3-CD)PYRENE	422/2722	1.9	0.085	0.002	100	0.36	NA	14	--	109
NAPHTHALENE	55/2730	2	0.12	0.002	100	3.6	NA	0	--	4
PERYLENE	7/9	0.35 J	0.057	0.002	0.003	1,600	NA	0	--	0
PHENANTHRENE	755/2729	16	0.23	0.002	100	16,000	NA	0	--	0
PHENOL	74/204	2.5	0.60	0.33	100	18,000	NA	0	--	0
PYRENE	1074/2726	14.8 J	0.22	0.002	100	1,600	NA	0	--	0
BAP (EQ) *	940/2726	13	0.20	NA	NA	0.036	0.62	805	32	0
PCBs/Pesticides (mg/kg)										
PCBs										
AROCLOR-1016	74/2740	2	0.17	0.0025	49	3.8	NA	0	--	2
AROCLOR-1242	7/2740	4.2	0.88	0.0025	62	0.22	NA	4	--	75
AROCLOR-1248	9/2740	0.8	0.19	0.0025	98	0.22	NA	1	--	91
AROCLOR-1254	15/2740	2.1	0.39	0.0025	62	0.22	NA	7	--	93
AROCLOR-1260	1679/2740	380	0.77	0.0025	28	0.22	NA	167	--	62
PCB-1	3/3	0.00019	0.000092	0.000021	0.000023	NC	NA	--	--	--
PCB-10	3/3	0.00018	0.000092	0.000021	0.000023	NC	NA	--	--	--
PCB-101	1/3	0.000037	0.000037	0.000021	0.000023	NC	NA	--	--	--
PCB-105	6/9	0.04524 J	0.0078	0.0000019	0.0000442	NC	NA	--	--	--
PCB-114	4/9	0.003081	0.00079	0.0000015	0.0000391	NC	NA	--	--	--
PCB-118	7/9	0.03725 J	0.0060	0.0000011	0.000032	NC	NA	--	--	--
PCB-123	5/9	0.006834 J	0.0015	0.0000009	0.0000311	NC	NA	--	--	--
PCB-126	2/9	0.0001575	0.000088	0.0000021	0.0000447	NC	NA	--	--	--
PCB-138	1/3	0.000038	0.000038	0.000021	0.000023	NC	NA	--	--	--

TABLE 4-4: STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - SITEWIDE (Continued)

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PCBs/Pesticides (mg/kg)										
PCBs										
PCB-139	1/3	0.000041	0.000041	0.000021	0.000023	NC	NA	--	--	--
PCB-149	1/3	0.000041	0.000041	0.000021	0.000023	NC	NA	--	--	--
PCB-153	1/3	0.000038	0.000038	0.000021	0.000023	NC	NA	--	--	--
PCB-156	7/9	0.01931 J	0.0029	0.0000019	0.0000351	NC	NA	--	--	--
PCB-157	5/9	0.004961	0.0010	0.0000018	0.0000388	NC	NA	--	--	--
PCB-16	1/3	0.000054	0.000054	0.000021	0.000023	NC	NA	--	--	--
PCB-163	1/3	0.000038	0.000038	0.000021	0.000023	NC	NA	--	--	--
PCB-164	1/3	0.000038	0.000038	0.000021	0.000023	NC	NA	--	--	--
PCB-167	5/9	0.008371 J	0.0018	0.0000012	0.0000281	NC	NA	--	--	--
PCB-17	1/3	0.000033	0.000033	0.000021	0.000023	NC	NA	--	--	--
PCB-170	2/3	0.0000097	0.0000069	0.0000021	0.0000023	NC	NA	--	--	--
PCB-18	1/3	0.00015	0.00015	0.000021	0.000023	NC	NA	--	--	--
PCB-180	3/3	0.00002	0.000011	0.0000021	0.0000023	NC	NA	--	--	--
PCB-189	5/9	0.0009866 J	0.00023	0.0000021	0.0000452	NC	NA	--	--	--
PCB-19	1/3	0.000058	0.000058	0.000021	0.000023	NC	NA	--	--	--
PCB-32	1/3	0.000054	0.000054	0.000021	0.000023	NC	NA	--	--	--
PCB-4	3/3	0.00018	0.000092	0.000021	0.000023	NC	NA	--	--	--
PCB-44	1/3	0.000036	0.000036	0.000021	0.000023	NC	NA	--	--	--
PCB-5	1/3	0.000039	0.000039	0.000021	0.000023	NC	NA	--	--	--
PCB-52	1/3	0.0003	0.00030	0.000021	0.000023	NC	NA	--	--	--
PCB-53	1/3	0.000051	0.000051	0.000021	0.000023	NC	NA	--	--	--
PCB-73	1/3	0.0003	0.00030	0.000021	0.000023	NC	NA	--	--	--
PCB-77	5/9	0.001644	0.00037	0.0000009	0.0000362	NC	NA	--	--	--
PCB-8	1/3	0.000039	0.000039	0.000021	0.000023	NC	NA	--	--	--
PCB-81	3/9	0.002095	0.00071	0.0000011	0.0000334	NC	NA	--	--	--
PCB-89	1/3	0.000037	0.000037	0.000021	0.000023	NC	NA	--	--	--
PCB-90	1/3	0.000037	0.000037	0.000021	0.000023	NC	NA	--	--	--
PCB-93	1/3	0.00012	0.00012	0.000021	0.000023	NC	NA	--	--	--
PCB-95	1/3	0.00012	0.00012	0.000021	0.000023	NC	NA	--	--	--

TABLE 4-4: STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - SITEWIDE (Continued)

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PCBs/Pesticides (mg/kg)										
TOTAL AROCLOR *	1691/2742	380	0.99	NA	NA	0.22	1.0	365	85	0
TOTAL PCB *	3/3	0.0040	0.0029	NA	NA	0.22	1.0	0	0	0
Pesticides										
4,4'-DDD	72/493	2.4	0.087	0.0017	22	2.0	NA	2	--	3
4,4'-DDE	119/493	0.38	0.013	0.0017	22	1.4	NA	0	--	3
4,4'-DDT	245/493	0.816	0.028	0.0017	22	1.6	NA	0	--	3
ALPHA-BHC	5/493	0.1	0.022	0.0016	11	0.077	NA	1	--	5
ALPHA-CHLORDANE	299/498	40	0.31	0.001	11	0.42	NA	7	--	0
BETA-BHC	2/493	0.004 J	0.0030	0.0016	22	0.27	NA	0	--	4
CHLORDANE	4/12	2	0.85	0.017	0.42	0.42	NA	2	--	0
DIELDRIN	11/493	0.03	0.015	0.0017	22	0.030	NA	0	--	26
ENDOSULFAN SULFATE	1/493	0.009 J	0.0090	0.0017	22	360	NA	0	--	0
ENDRIN	1/493	0.003 J	0.0030	0.0017	22	18	NA	0	--	1
ENDRIN ALDEHYDE	9/493	0.028 J	0.012	0.0017	22	18	NA	0	--	1
ENDRIN KETONE	2/481	0.006	0.0045	0.002	22	18	NA	0	--	1
GAMMA-CHLORDANE	315/481	25	0.19	0.001	11	0.42	NA	4	--	0
HEPTACHLOR	18/493	12	0.90	0.0003	11	0.11	NA	3	--	1
HEPTACHLOR EPOXIDE	27/493	6.9 J	0.49	0.0003	11	0.053	NA	8	--	0
METHOXYCHLOR	1/493	0.005 J	0.0050	0.0033	110	300	NA	0	--	0
Metals (mg/kg)										
ALUMINUM	229/229	20,800	5,990	1.2	14.6	75,000	9,900	0	15	0
ANTIMONY	312/2210	99.9	10.8	0.089	12	30	2.9	43	142	0
ARSENIC	2117/2153	29.6	5.4	0.044	4.14	0.061	10	2117	56	36
BARIUM	1956/1963	835	50.5	0.027	48.7	15,000	260	0	19	0
BERYLLIUM	249/2145	1.1	0.19	0.0021	1	150	0.12	0	153	0
CADMIUM	1165/2220	77.4	0.46	0.0069	1.2	78	1.4	0	36	0
CALCIUM	229/229	186,000 J	10,900	0.52	1,220	NC	NA	--	--	--
CHROMIUM	2145/2145	452 J	44.5	0.0066	2.4	280	75	4	106	0
COBALT	1957/1963	85.6	9.0	0.013	12.2	23	16	38	91	0

TABLE 4-4: STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - SITEWIDE (Continued)

IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Analyte	Number of Detections/ Analyses	Maximum Detected Concentration	Average of Detected Concentration	Minimum Detection Limit	Maximum Detection Limit	Risk Based Screening Concentration [a]	TI Ambient Level or TI Action Level [a]	Number of Detections Above Risk-Based Screening Concentration	Number of Detections Above TI Ambient Level or TI Action Level	Number of Nondetections Above Risk-Based Screening Concentration [b]
Metals (mg/kg)										
COPPER	2126/2145	13,500 J	28.9	0.024	6.1	3,000	85	2	53	0
IRON	229/229	125,000	15,600	0.35	24.4	53,000	NA	1	--	0
LEAD	2763/2784	3,970	37.8	0.033	1.44	80	21	250	1199	0
MAGNESIUM	229/229	140,000 J	8,480	0.61	1,220	NC	NA	--	--	--
MANGANESE	229/229	13,900	366	0.027	3.7	1,800	550	4	15	0
MERCURY	1707/2145	2.4	0.10	0.0006	0.39	23	0.51	0	32	0
MOLYBDENUM	36/1948	65.4	4.0	0.017	10	380	2.0	0	11	0
NICKEL	2144/2145	1,620 J	58.1	0.011	10	1,500	130	1	111	0
POTASSIUM	207/229	4,210 J	880	1.6	1,220	NC	NA	--	--	--
SELENIUM	433/2133	3.7 J	0.92	0.066	5.58	380	0.50	0	240	0
SILVER	223/2142	86.8	1.7	0.014	2.4	380	0.45	0	98	0
SODIUM	169/229	1,950 J	350	2.26	1,220	NC	NA	--	--	--
THALLIUM	27/2145	5.3 J	1.0	0.04	2.4	0.76	0.71	10	12	37
VANADIUM	1963/1963	253	27.5	0.0069	12.2	380	33	0	278	0
ZINC	2143/2145	4,040	65.4	0.022	4.9	23,000	94	0	312	0
Polychlorinated Dioxins and Furans (ng/kg)										
1,2,3,4,6,7,8-HPCDD	212/251	6,860 J	76.9	0.021	180	NC	NA	--	--	--
1,2,3,4,6,7,8-HPCDF	190/251	1,011	17.9	0.018	270	NC	NA	--	--	--
1,2,3,4,7,8,9-HPCDF	81/251	53.43 J	1.9	0.023	270	NC	NA	--	--	--
1,2,3,4,7,8-HXCDD	74/251	68.25	2.5	0.023	180	NC	NA	--	--	--
1,2,3,4,7,8-HXCDF	136/251	100.4	5.2	0.015	140	NC	NA	--	--	--
1,2,3,6,7,8-HXCDD	128/251	277.6	5.7	0.021	180	NC	NA	--	--	--
1,2,3,6,7,8-HXCDF	114/251	178.8	4.1	0.015	140	NC	NA	--	--	--
1,2,3,7,8,9-HXCDD	116/251	111.4 J	4.2	0.021	180	NC	NA	--	--	--
1,2,3,7,8,9-HXCDF	12/251	0.899	0.41	0.019	140	NC	NA	--	--	--
1,2,3,7,8-PECDD	49/251	14.32	1.4	0.03	440	NC	NA	--	--	--
1,2,3,7,8-PECDF	84/251	37.2	1.9	0.022	160	NC	NA	--	--	--
2,3,4,6,7,8-HXCDF	120/251	51.06	3.1	0.017	140	NC	NA	--	--	--

TABLE 4-4: STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - SITEWIDE (Continued)

IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Analyte	Number of Detections/ Analyses	Maximum Detected Concentration	Average of Detected Concentration	Minimum Detection Limit	Maximum Detection Limit	Risk Based Screening Concentration [a]	TI Ambient Level or TI Action Level [a]	Number of Detections Above Risk-Based Screening Concentration	Number of Detections Above TI Ambient Level or TI Action Level	Number of Nondetections Above Risk-Based Screening Concentration [b]
Polychlorinated Dioxins and Furans (ng/kg)										
2,3,4,7,8-PECDF	108/251	41.81	1.8	0.023	160	NC	NA	--	--	--
2,3,7,8-TCDD	26/251	2.29	0.85	0.024	224.4	4.5	NA	0	--	4
2,3,7,8-TCDF	67/250	33.61	2.5	0.028	960	NC	NA	--	--	--
OCDD	224/251	29,970 J	521	0.033	650	NC	NA	--	--	--
OCDF	189/251	4,297 J	46.2	0.032	470	NC	NA	--	--	--
TOTAL HPCDD	211/251	11,080	137	0.021	180	NC	NA	--	--	--
TOTAL HPCDF	162/251	1,065	26.6	0.018	270	NC	NA	--	--	--
TOTAL HXCDD	141/251	940.5	27.0	0.021	180	NC	NA	--	--	--
TOTAL HXCDF	175/251	1,326	35.1	0.015	140	NC	NA	--	--	--
TOTAL PECDD	54/251	100.7	4.3	0.03	440	NC	NA	--	--	--
TOTAL PECDF	158/251	724.3	33.2	0.022	160	NC	NA	--	--	--
TOTAL TCDD	73/251	221.9	5.6	0.024	224.4	NC	NA	--	--	--
TOTAL TCDF	149/251	410	14.3	0.028	960	NC	NA	--	--	--
2,3,7,8-TCDD TEQ *	240/254	170	4.2	NA	NA	4.5	12	44	12	0
Explosives (mg/kg)										
None Detected	0/ 20	ND	ND	NA	NA	NC	NA	--	--	--

TABLE 4-4: STATISTICAL SUMMARY OF SOIL ANALYTICAL RESULTS - SITEWIDE (Continued)

IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Notes:

*	These are calculated values, refer Section 4.2.1 for calculation methodology.
--	Not applicable or not available, no comparison criteria are established.
a	See Table 4-1 for bases of criteria.
b	For some nondetected results, the sample-specific reporting limit exceeds the risk-based screening concentration.
BAP (EQ)	Benzo(a)pyrene equivalent
BHC	Benzenehexachloride
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethene
DDT	Dichlorodiphenyltrichloroethane
HPCDD	Heptachlorodibenzo-p-dioxin
HPCDF	Heptachlorodibenzofuran
HXCDD	Hexachlorodibenzo-p-dioxin
HXCDF	Hexachlorodibenzofuran
J	Estimated value
mg/kg	Milligram per kilogram
NA	Not applicable
NAVSTA	Naval Station
NC	No applicable comparison criterion established
ND	None detected
ng/kg	Nanogram per kilogram
OCDD	Octachlorodibenzo-p-dioxin
OCDF	Octachlorodibenzofuran
PCB	Polychlorinated biphenyl
PECDD	Pentachlorodibenzo-p-dioxin
PECDF	Pentachlorodibenzofuran
TCDD	Tetrachlorodibenzo-p-dioxin
TCDF	Tetrachlorodibenzofuran
TEQ	Toxicity equivalence quotient
TPH	Total petroleum hydrocarbon

TABLE 4-30: STATISTICAL SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - SITEWIDE

IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Analyte	Number of Detections/ Analyses	Maximum Detected Concentration	Average of Detected Concentration	Minimum Detection Limit	Maximum Detection Limit	Comparison Criteria [a]	Ambient Level [b]	Number of Detections Above Comparison Criteria	Number of Detections Above Ambient Level	Number of Nondetections Above Comparison Criteria [c]
Volatile Organic Compounds (µg/L)										
1,2-DICHLOROBENZENE	1/25	2.7	2.7	0.5	0.5	130	NA	0	--	0
1,2-DICHLOROETHANE	1/25	0.37 J	0.37	0.5	0.5	11,000	NA	0	--	0
1,4-DICHLOROBENZENE	2/25	0.9	0.81	0.5	0.5	130	NA	0	--	0
BENZENE	2/25	1.9	0.98	0.5	0.5	700	NA	0	--	0
CHLOROBENZENE	1/25	13	13.0	0.5	0.5	130	NA	0	--	0
CHLOROFORM	3/25	18	14.7	0.5	0.5	6,400	NA	0	--	0
CIS-1,2-DICHLOROETHENE	7/25	2.2	1.2	0.5	0.5	22,000	NA	0	--	0
ISOPROPYLBENZENE	1/25	0.5 J	0.50	0.5	0.5	NC	NA	--	--	--
METHYL-TERT-BUTYL ETHER	1/25	0.08 J	0.080	0.5	0.5	8,000	NA	0	--	0
N-BUTYLBENZENE	2/20	0.71	0.64	0.5	0.5	NC	NA	--	--	--
SEC-BUTYLBENZENE	1/20	0.57	0.57	0.5	0.5	NC	NA	--	--	--
TRANS-1,2-DICHLOROETHENE	3/25	2.4	1.3	0.5	0.5	45,000	NA	0	--	0
TRICHLOROETHENE	2/25	1.1	0.95	0.5	0.5	200	NA	0	--	0
VINYL CHLORIDE	4/25	2	1.3	0.5	0.5	NC	NA	--	--	--
XYLENE (TOTAL)	1/25	0.26 J	0.26	0.5	0.5	NC	NA	--	--	--
Petroleum Hydrocarbons (mg/L)										
Diesel/Motor Oil Range (extractables)										
DIESEL RANGE ORGANICS	41/50	6	0.98	0.05	0.05	NC	NA	--	--	--
MOTOR OIL RANGE ORGANICS	16/50	2	0.63	0.25	0.3	NC	NA	--	--	--
Gasoline Range (purgeables)										
GASOLINE RANGE ORGANICS	18/50	1	0.27	0.05	0.05	NC	NA	--	--	--
TOTAL TPH *	44/51	7.1	1.3	0.017	7.1	1.4	NA	11	--	0
Semivolatile Organic Compounds (µg/L)										
NAPHTHALENE	6/22	1.4	1.2	0.5	2	240	NA	0	--	0
Metals (µg/L)										
Unfiltered										
ALUMINUM	10/51	130	52.1	50	2,000	NC	27	--	6	--
ANTIMONY	10/51	1.7	0.56	1	20	NC	1.7	--	0	--

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
6	Chemicals in groundwater exceeding the screening criteria	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Table 4-30.

TABLE 4-30: STATISTICAL SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - SITEWIDE (Continued)

IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Analyte	Number of Detections/ Analyses	Maximum Detected Concentration	Average of Detected Concentration	Minimum Detection Limit	Maximum Detection Limit	Comparison Criteria [a]	Ambient Level [b]	Number of Detections Above Comparison Criteria	Number of Detections Above Ambient Level	Number of Nondetections Above Comparison Criteria [c]
Metals (µg/L)										
Unfiltered										
ARSENIC	47/51	172	53.5	1	20	36	15	24	37	0
BARIUM	51/51	300	88.2	1	20	NC	120	--	10	--
CADMIUM	3/51	0.15 J	0.11	1	20	8.8	0.27	0	0	1
CALCIUM	51/51	400,000	132,000	100	5,000	NC	120,000	--	16	--
CHROMIUM	13/51	6.7	1.6	1	20	50	0.13	0	13	0
COBALT	16/51	2.38	0.90	1	20	NC	1.4	--	3	--
COPPER	25/51	480	22.5	1	22	3.1	6.6	10	3	1
IRON	44/51	23,400	6,380	50	2,000	NC	200	--	40	--
LEAD	10/51	1.4	0.59	1	20	8.1	2.0	0	0	1
MAGNESIUM	41/41	1,120,000	111,000	100	5,000	NC	43,000	--	6	--
MANGANESE	50/51	2,510	809	1	20	NC	900	--	23	--
MOLYBDENUM	26/51	25	4.4	1	21	NC	6.5	--	3	--
NICKEL	31/51	12	3.4	1	20	8.2	5.8	2	5	1
POTASSIUM	41/41	320,000	43,100	100	5,000	NC	37,000	--	8	--
SELENIUM	4/51	1.1	0.68	1	20	71	1.8	0	0	0
SILVER	4/51	0.21 J	0.086	1	20	0.19	2.2	1	0	19
SODIUM	40/41	8,580,000	832,000	300	6,000	NC	240,000	--	9	--
THALLIUM	2/51	0.37 J	0.20	1	1	430	3.4	0	0	0
VANADIUM	34/51	18	3.3	1	20	NC	4.2	--	6	--
ZINC	27/51	83 J	14.5	5	190	81	4.4	1	26	0

TABLE 4-30: STATISTICAL SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - SITEWIDE (Continued)

IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Notes:

*	Sum of TPH extractables and TPH purgeables
--	Not applicable or not available; no comparison criteria are established.
a	Groundwater comparison criteria were compiled through comprehensive reviews of published regulatory standards, goals, and guidance. Appendix M provides details regarding the methodology used to select groundwater comparison criteria for NAVSTA Treasure Island.
b	Appendix E provides a detailed description of the methods used to establish ambient levels in groundwater at NAVSTA Treasure Island.
c	For some nondetected results, the sample-specific reporting limit exceeds the comparison criteria.
J	Estimated value
mg/L	Milligram per liter
NA	Not applicable
NAVSTA	Naval Station
NC	No applicable comparison criterion established
TI	Treasure Island
TPH	Total petroleum hydrocarbon
µg/L	Microgram per liter

TABLE 4-31: STATISTICAL SUMMARY OF SOIL GAS ANALYTICAL RESULTS - SITEWIDE

IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Analyte	Number of Detections/ Analyses	Maximum Detected Concentration	Median Detected Concentration	Average of Detected Concentration	Risk-Based Screening Concentration [a]	Number of Detections Above Risk-Based Screening Concentration
EPA TO-15 VOC (µg/m³)						
1,2,4-TRIMETHYLBENZENE	1/103	34	34.0	34.0	7,100	0
4-METHYL-2-PENTANONE	1/103	50	50.0	50.0	2,700,000	0
BENZENE	13/103	370	14.0	56.1	66	2
CARBON DISULFIDE	25/103	230	17.0	36.4	530,000	0
CHLOROFORM	26/103	180	19.7	28.2	77	1
CYCLOHEXANE	77/103	41,226.9938	38.0	1,880	5,100,000	0
ETHYLBENZENE	9/103	55	15.0	18.5	840	0
FREON 11	1/103	25	25.0	25.0	580,000	0
FREON 12	5/103	900	110	285	96,000	0
ISOPROPYLBENZENE	3/5	22.1349693	19.5	17.4	390,000	0
M,P-XYLENES	28/103	140 J	13.0	28.4	88,000	0
O-XYLENE	5/103	53	19.0	26.4	83,000	0
TETRACHLOROETHENE	2/103	22	20.0	20.0	360	0
TOLUENE	16/103	15,000 J	130	1,920	4,200,000	0

Notes:

All soil gas data presented in this table and in Section 4 was collected in 2008.

a Soil gas comparison criteria are residential human health risk based concentrations for Site 12 (see Appendix C).

EPA U.S. Environmental Protection Agency

J Estimated value

NAVSTA Naval Station

VOC Volatile organic compound

µg/m³ Micrograms per cubic meter

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
7	Chemicals in soil gas exceeding the screening criteria	Table 1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Table 4-31.

TABLE 4-31: STATISTICAL SUMMARY OF SOIL GAS ANALYTICAL RESULTS - SITEWIDE (Continued)

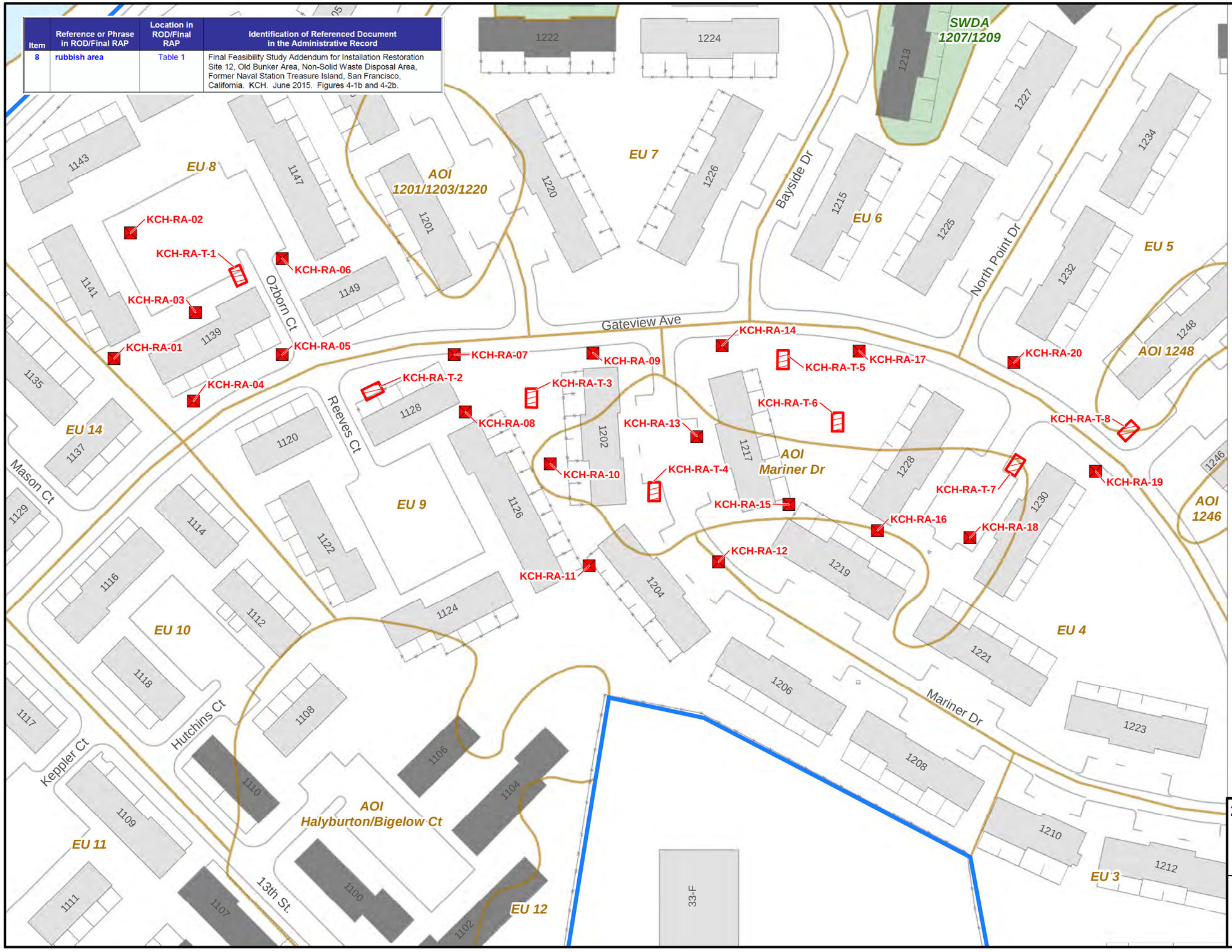
IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

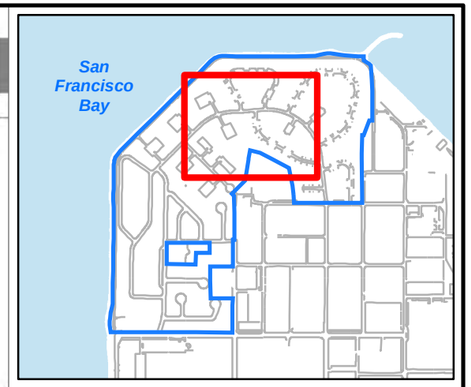
Notes:

All soil gas data presented in this table and in Section 4 was collected in 2008.

a	Soil gas comparison criteria are residential human health risk based concentrations for Site 12 (see Appendix C).
EPA	U.S. Environmental Protection Agency
J	Estimated value
NAVSTA	Naval Station
VOC	Volatile organic compound
µg/m³	Micrograms per cubic meter

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
8	rubbish area	Table 1	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Figures 4-1b and 4-2b.





LEGEND

- PROPOSED DPT BORING
- PROPOSED TRENCH EXCAVATION (NOT TO SCALE)
- EXPOSURE UNIT (EU) OR AREA OF INTEREST (AOI)
- SOLID WASTE DISPOSAL AREA
- FENCE
- ROAD
- BUILDING LEASED
- BUILDING NOT LEASED
- IR SITE 12 BOUNDARY

PROPOSED SAMPLE NOTES:
- Temporary Wells will be installed near 10 of the DPT borings
- Locations will be determined based on field observations

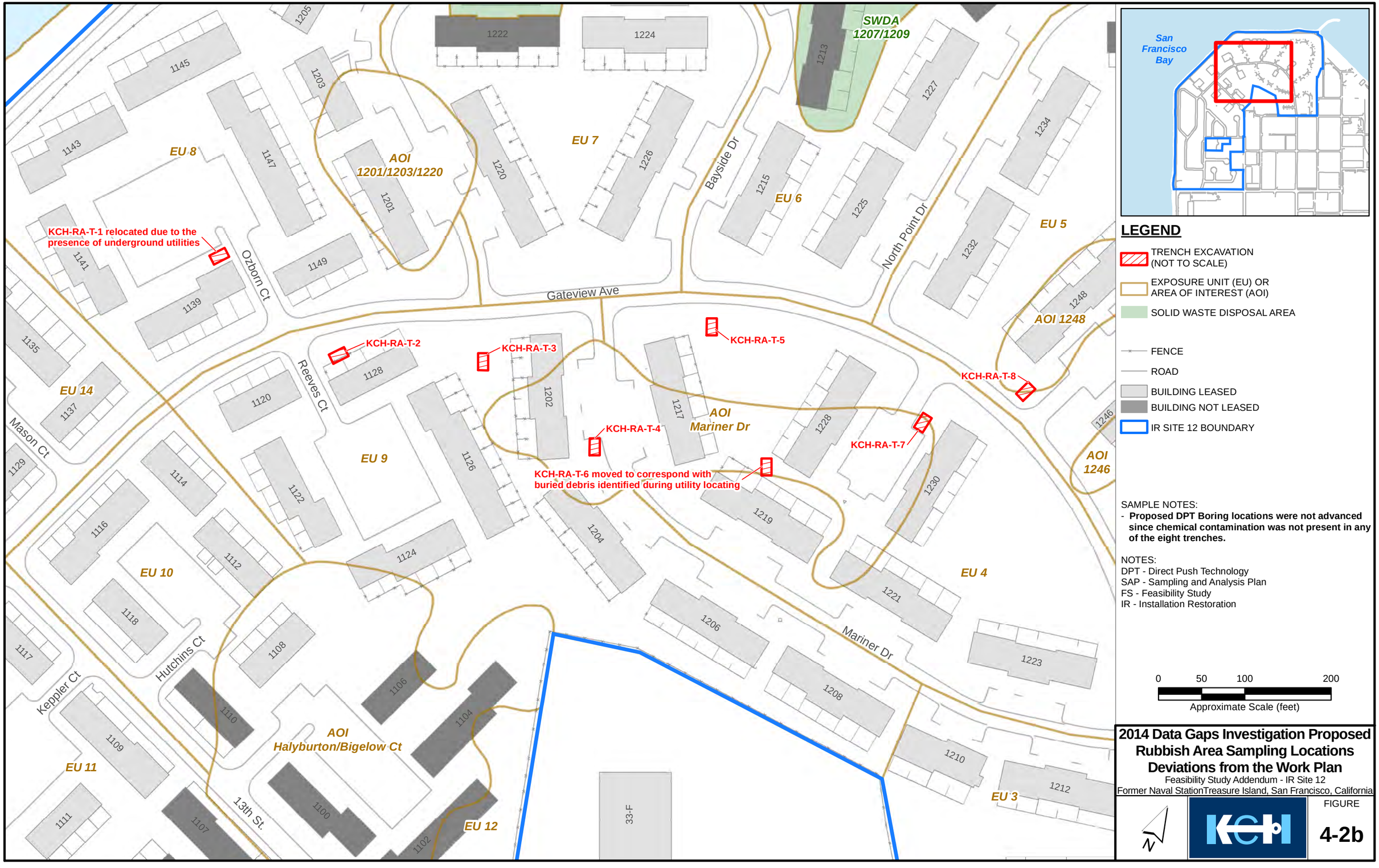
NOTES:
DPT - Direct Push Technology
SAP - Sampling and Analysis Plan
FS - Feasibility Study
IR - Installation Restoration

0 50 100 200
Approximate Scale (feet)

2014 Data Gaps Investigation Proposed Rubbish Area Sampling Locations

Feasibility Study Addendum - IR Site 12
Former Naval StationTreasure Island
San Francisco, California

FIGURE 4-1b



LEGEND

- TRENCH EXCAVATION (NOT TO SCALE)
- EXPOSURE UNIT (EU) OR AREA OF INTEREST (AOI)
- SOLID WASTE DISPOSAL AREA
- FENCE
- ROAD
- BUILDING LEASED
- BUILDING NOT LEASED
- IR SITE 12 BOUNDARY

SAMPLE NOTES:
- **Proposed DPT Boring locations were not advanced since chemical contamination was not present in any of the eight trenches.**

NOTES:
DPT - Direct Push Technology
SAP - Sampling and Analysis Plan
FS - Feasibility Study
IR - Installation Restoration

0 50 100 200
Approximate Scale (feet)

2014 Data Gaps Investigation Proposed Rubbish Area Sampling Locations Deviations from the Work Plan

Feasibility Study Addendum - IR Site 12
Former Naval StationTreasure Island, San Francisco, California

FIGURE
4-2b

4.2.18 Soil Gas Sampling – Exposure Unit 16

Soil gas samples were collected from new temporary soil gas probes. For soil gas sample probe installation, a hand auger was used to advance the boreholes to a depth that is within the vadose zone above the capillary fringe. The soil gas sample point was allowed to equilibrate for at least 48 hours before sampling using SUMMA Canisters

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
9	**contamination extended underneath buildings**	Table 1	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Sections 4.3 through 4.3.4.

4.3 Updated Site Characterization

Below is a summary of the 2014 data gaps investigation with respect to analysis for the COCs lead, dioxins/furans, PCBs, PAHs, and TPH. The COCs total chromium and pesticides did not require further data gaps investigation. Figures 4-4 (total chromium) and 4-8 (pesticides) present the collective results from the RI and the 2013 data gaps investigation for these COCs. Analytical data for the COCs from the data gaps investigation are presented in Tables 4.1a through 4.1h.

4.3.1 Lead

Figure 4-3 presents the collective results from the RI and data gaps investigations. Table 4-1a presents the collective results from the 2013 and 2014 data gaps investigations. Further investigation to define the lateral extent of lead contamination underneath buildings was conducted at AOI Mariner Drive (Buildings 1202 and 1217), EU 5 (building 1236), EU 8 (Buildings 1203 and 1147), and EU 11 (Building 1115). A total of 12 boring locations were advanced and sampled for lead using USEPA Method 6020. Five borings were advanced underneath buildings using HDD, six borings were advanced underneath buildings through concrete coring and one location was advanced adjacent to the building foundation via hand auger boring.

Data indicate that the lateral extents of contamination are defined and lead contamination does not continue under the six buildings (1115, 1147, 1202, 1203, 1217, and 1236).

4.3.2 Dioxins and Furans: Dioxin Toxic Equivalents

Figure 4-5 presents the collective results from the RI and the data gaps investigations. Table 4-1f presents the collective results from the 2013 and 2014 data gaps investigations. Further investigation to define the lateral extent of dioxin contamination underneath buildings was conducted at AOI Mariner Drive (Buildings 1217, 1228, and 1230), EU 8 (Building 1203), and EU 14 (Building 1131). Further investigation to define the lateral extent of dioxin adjacent to buildings was conducted at AOI Mariner Drive (Building 1221) and EU-16 (Building 1302). Further investigation was also conducted to confirm or deny dioxin contamination in EU 17 (location T097-08). NIRIS data for this location showed results both above and below the RG. A total of 12 boring locations were advanced and sampled for dioxins and furans using USEPA Method 8290. Six borings were advanced underneath buildings using HDD and three borings were advanced underneath buildings through

concrete coring. Two locations were advanced adjacent to building foundations using hand auger boring. One location was advanced in the same location as the NIRIS discrepancy through hand auger boring.

Data indicate that the lateral extents of contamination are defined and dioxin contamination does not continue toward or under the seven buildings (1131, 1203, 1217, 1221, 1228, 1230, and 1302). Data also indicate that dioxin contamination is confirmed at NIRIS discrepancy location T097-08 in EU-17.

4.3.3 PCBs

Figure 4-6 presents the collective results from the RI and the data gaps investigations. Table 4-1d presents the collective results from the 2013 and 2014 data gaps investigations. Further investigation to define the lateral extent of PCB contamination underneath buildings was conducted at AOI Mariner Drive (Building 1202), EU-11 (Building 1115), and AOI Halyburton/Bigelow Court (Buildings 1105, 1107, 1108, and 1110). A total of 14 boring locations were advanced and sampled for PCBs using USEPA Method 8082. Three borings were advanced underneath buildings using HDD and 11 borings were advanced underneath buildings through concrete coring.

Data indicate that the lateral extents of contamination are defined and PCB contamination does not continue under the six buildings (1105, 1107, 1108, 1110, 1115, and 1202).

4.3.4 Polycyclic Aromatic Hydrocarbons: Benzo(a)pyrene Equivalents

Figure 4-7 presents the collective results from the RI and the data gaps investigations. Table 4-1e presents the collective results from the 2013 and 2014 data gaps investigations. Further investigation to define the lateral extent of BAP EQ contamination underneath buildings was conducted at AOI Mariner Drive (Buildings 1217 and 1230), EU 5 (Building 1232), EU 6 (Building 1225), and EU 11 (Building 1115). Further investigation to define the lateral extent of BAP EQ adjacent to buildings was conducted at EU 7 (Building 1226), EU 10 (Buildings 1112 and 1118), and EU 18 (Building 1436). Further investigation was also conducted to confirm or deny BAP EQ contamination at four NIRIS discrepancy locations. These locations are within EU 3 (location 1216E-1), EU 4 (location 1223F-1), and EU 19 (locations 1301A-1 and T100-16). NIRIS data for these locations showed results both above and below the RG. A total of 16 boring locations were advanced and sampled for BAP EQ using USEPA Method 8270C. Three borings were advanced underneath buildings using HDD and two borings were advanced underneath buildings through concrete coring. Six locations were advanced adjacent to building foundations using hand auger boring. Five locations were advanced in the same location as the NIRIS discrepancies through hand auger boring.

Data indicate that BAP EQ contamination is present underneath Building 1217. Data also indicate that the remaining lateral extents of contamination are defined and BAP EQ contamination does not continue toward or under the remaining eight buildings (1112, 1115, 1118, 1225, 1226, 1230, 1232, and 1436). Data indicates that BAP EQ contamination is not present at any of the NIRIS discrepancy locations.

4.3.5 Total Petroleum Hydrocarbons

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
10	benzene in soil gas	Table 1	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Section 4.5.

Building 1313 between 4 and at least 10 feet and a smear or weathered layer is present around Building 1311 between 8 and 9 feet. Petroleum hydrocarbons at concentrations above the target goal for mass reduction appear to extend beneath both Buildings 1311 and 1313. In addition, the extent of the smear zone does not seem to extend underneath Buildings 1310 or 1312.

Data indicate that the lateral extents of contamination are defined and TPH contamination does not continue outside of the previously defined source area.

4.4 Rubbish Area Investigation

Figures 4-1b and 4-2b identify the locations of trenches that were made to conduct the investigation. Tables 4-1a through 4-1g present the analytical results for the soil samples collected during the data gaps investigation.

Eight trenches were excavated throughout the potential rubbish area. Each trench was advanced to 8 feet bgs in an effort to identify the presence and type of rubbish. Soil samples were collected in each trench and analyzed for COCs (TPH, PCBs, BAP EQ, pesticides, dioxins/furans, metals, and radium-226). Household refuse was discovered in two trenches (trench 6 and trench 7). A Mennen deodorant container and White Rock water bottles discovered in the trenches were dated to the 1950s. Chemical analysis in the trenches did not show the presence of COCs above RGs. Consequently, the 20 planned soil borings and 10 planned groundwater samples were not advanced. The trenching investigation and geophysical surveys seem to indicate that while the footprint of the rubbish area as shown in the HRA Technical Memorandum (TriEco-Tt, 2014) is large, there was only a small area of shallow debris in two locations.

Data indicate that there is no chemical contamination above RGs in the eight trenches. The household debris discovered in trenches 6 and 7 was minimal, low density, and localized.

4.5 Benzene in Soil Gas

Table 4-1h presents the collective results from the 2013 and 2014 data gaps investigations. Further investigations to define the lateral and vertical extent of soil gas volatile organic compounds (VOCs) were conducted at EU 16. Soil gas samples at EU 16 were collected from two borings. Samples were additionally analyzed for oxygen and helium (helium is a tracer gas used for soil gas sampling to detect leaks). The helium results indicated that no leaks were present during soil gas sampling.

Data indicate that soil gas concentrations of benzene are no longer detectable and do not require further investigation or remediation.

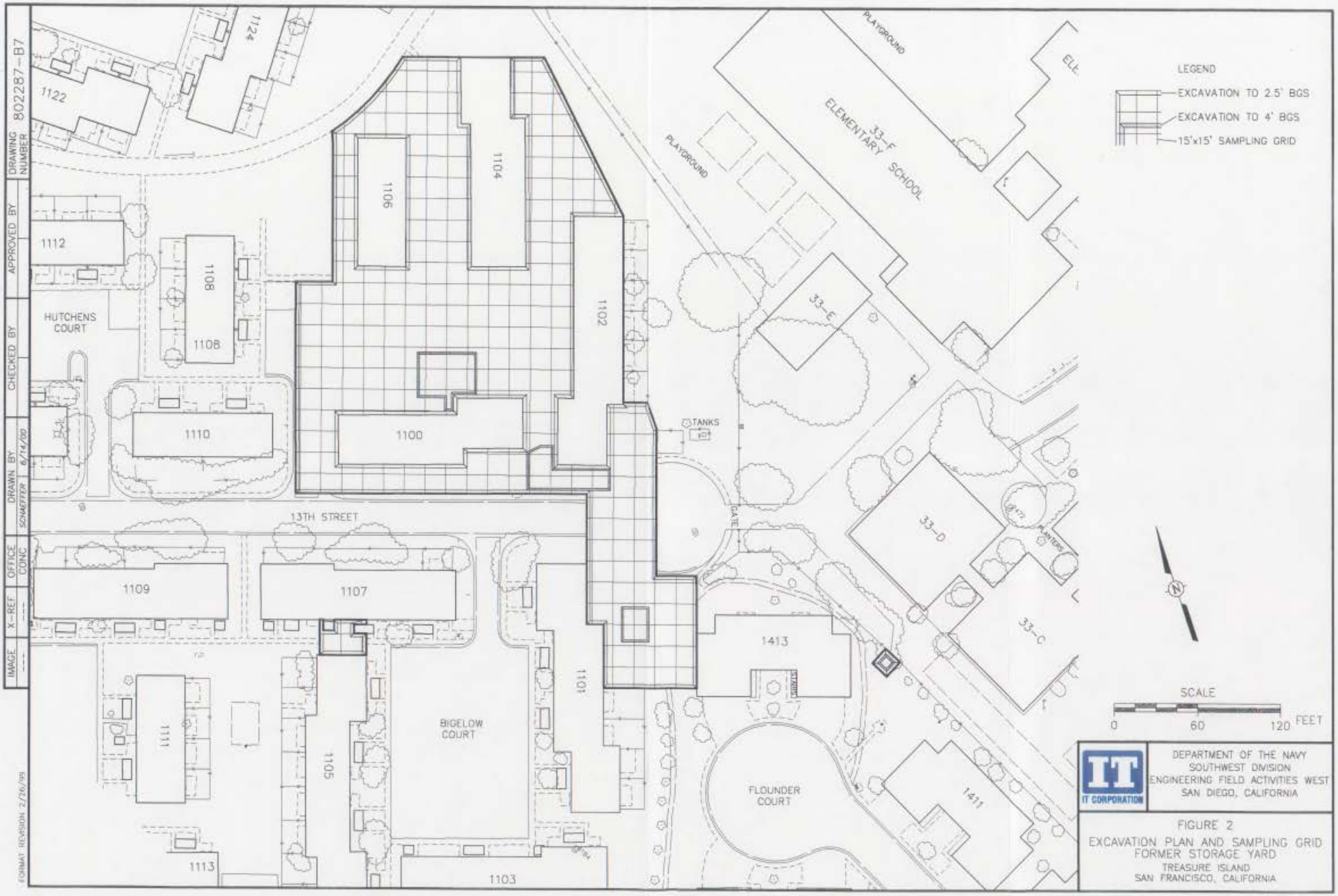
4.6 Groundwater Exposure Area GW-S5

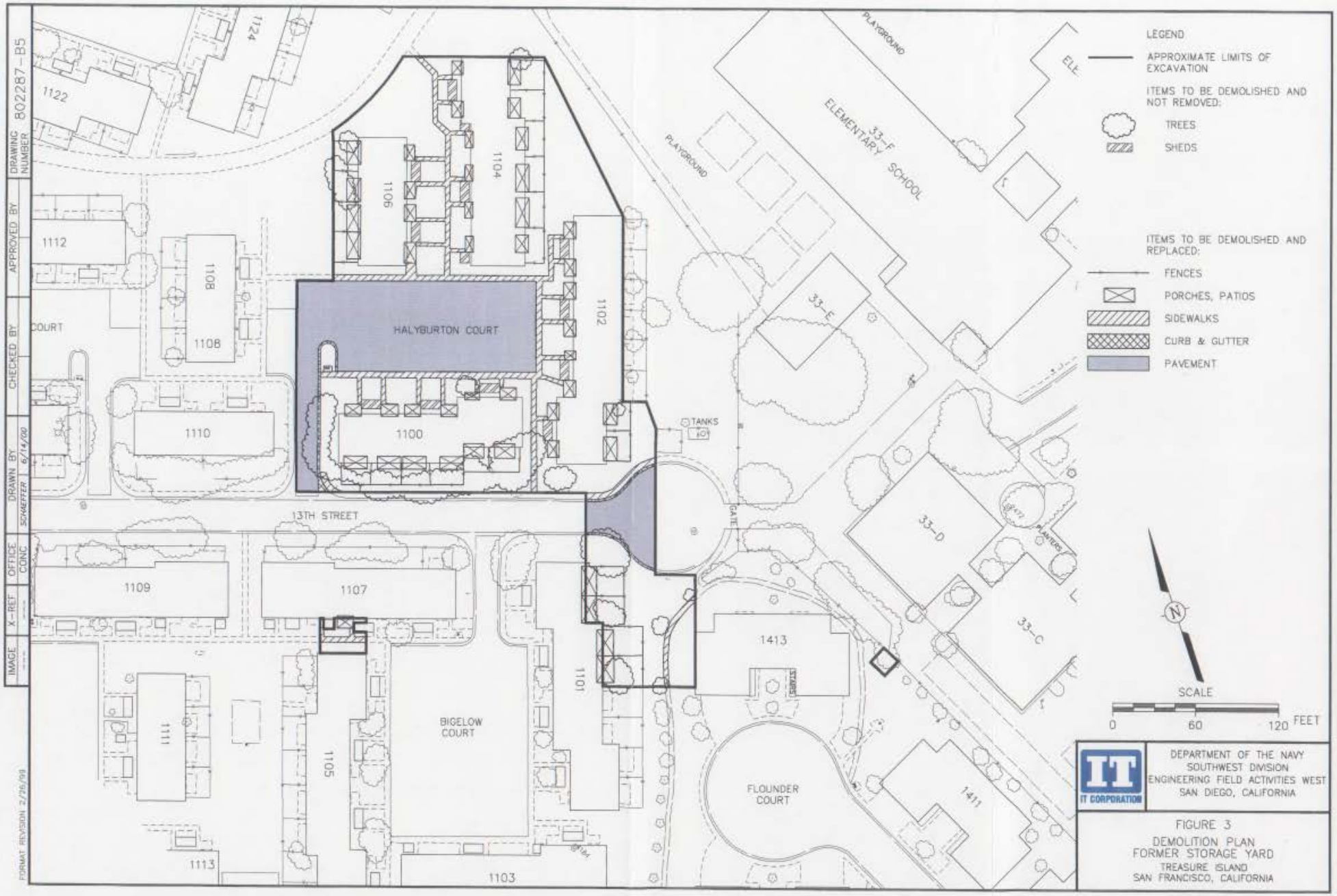
As reported in the Final RI, between 2007 and 2009, concentrations of arsenic in one monitoring well (12-MW15) within GW-S5 had ranged from 29 to 54 µg/L. In 2009, the arsenic concentration in this well was below the toxicity screening criterion (36 µg/L), but above the ambient level (15 µg/L). The RI further indicated that arsenic was the sole COC for groundwater in GW-S5, with a cancer risk calculated to be 2E-06 (future construction worker) based on Cal-EPA criteria. This calculated risk was based on the extremely conservative assumption that future construction workers would have dermal exposure to groundwater 8 hours a day for 250 days per year. The RI indicated that this risk was not considered significant enough to warrant additional evaluation in the FS, although the RI further indicated that this exposure area should be kept under the ongoing groundwater monitoring program to assess migration of contaminants (TriEco-Tt, 2012).

Groundwater monitoring has been performed within GW-S5 since 2009. Sample results for some metals have slightly exceeded the screening criteria but have been consistent with historical ambient levels. Concentrations of arsenic have been below the toxicity screening criterion since 2008. The sampling results can be found in the *Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24* (Trevet, 2014). With these results, GW-S5 is not being carried forward in the CERCLA process for this FS Addendum and is recommended for no further action.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
11	**arsenic in groundwater**	Table 1	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Section 4.6.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
12	**Halyburton Court area**	Table 1	Work Plan, Removal Action of PCB-Contaminated Soil, Halyburton Court Area, Treasure Island, California, Revision B. IT Corporation. June 2000. Figures 2 and 3.




LEGEND
APPROXIMATE LIMITS OF EXCAVATION
ITEMS TO BE DEMOLISHED AND NOT REMOVED:
TREES
SHEDS
ITEMS TO BE DEMOLISHED AND REPLACED:
FENCES
PORCHES, PATIOS
SIDEWALKS
CURB & GUTTER
PAVEMENT
HALYBURTON COURT
BIGELOW COURT
FLOUNDER COURT
13TH STREET
PLAYGROUND
33-F ELEMENTARY SCHOOL
33-E
33-D
33-C
TANKS
GATE
PLANTERS
STAIRS
1100
1101
1102
1103
1104
1105
1106
1107
1108
1109
1110
1111
1112
1113
1122
1124
1411
1413
SCALE
0
60
120 FEET
N
IT CORPORATION
DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
ENGINEERING FIELD ACTIVITIES WEST
SAN DIEGO, CALIFORNIA
FIGURE 3
DEMOLITION PLAN
FORMER STORAGE YARD
TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA
DRAWING NUMBER 802287-B5
APPROVED BY
CHECKED BY
DRAWN BY SCHAEFFER 6/14/00
OFFICE CONC
X-REF
IMAGE
FORMAT REVISION: 2/25/99

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
13	in the area	Table 1	Final Post-Construction Report, Time-Critical Removal Action of PCB- and PAH-Contaminated Soil, Site 12 TIHDI Buildings, Treasure Island, San Francisco, California. IT Corporation. June 21, 2002. Figures 1 through 5.

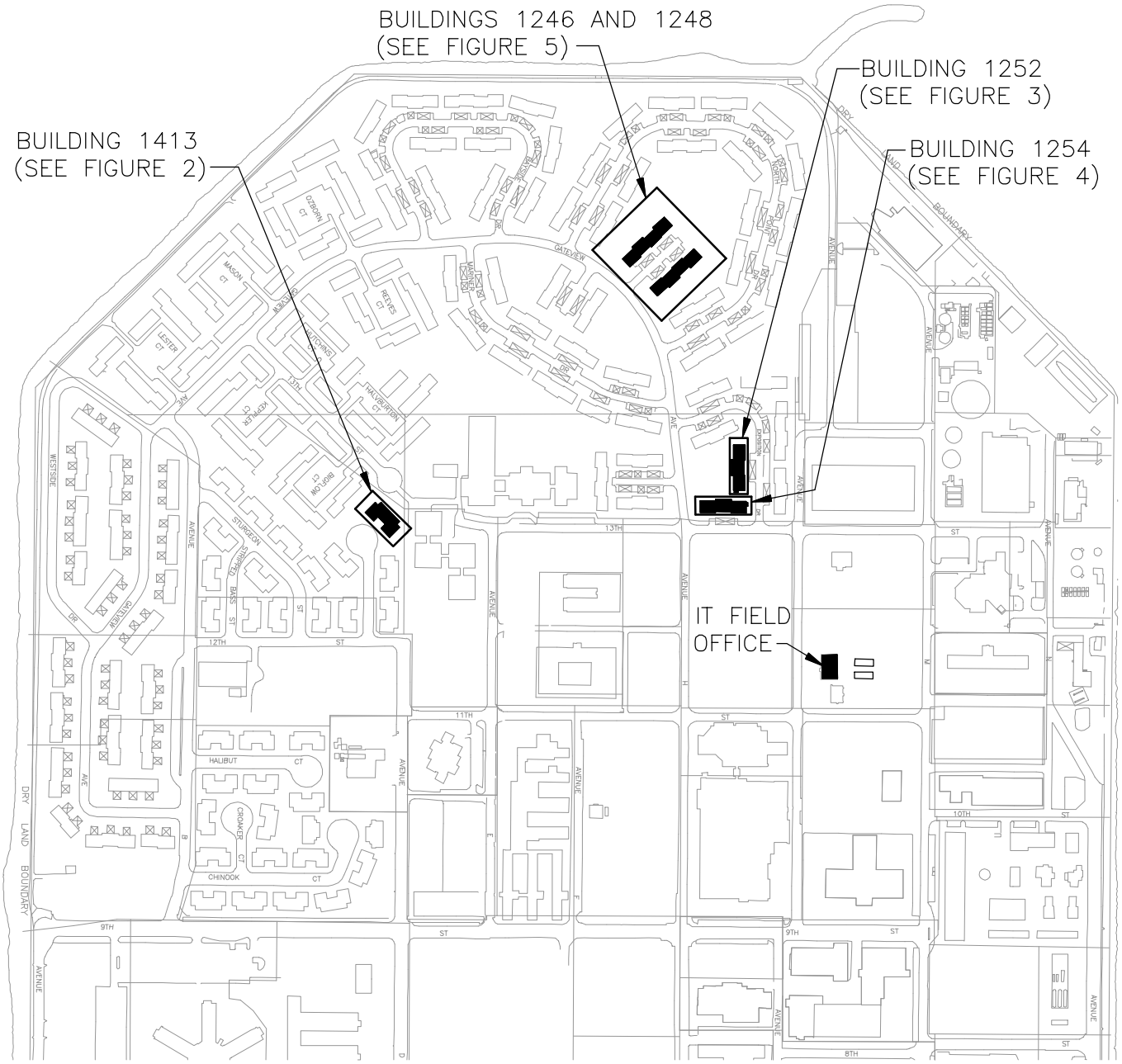
DRAWING NUMBER 819858-A26

APPROVED BY PB 6/21/02

CHECKED BY SC 6/21/02

DRAWN BY SJZ 1/16/02

OFFICE Conc



SCALE

0 500 1000 FEET

IT CORPORATION

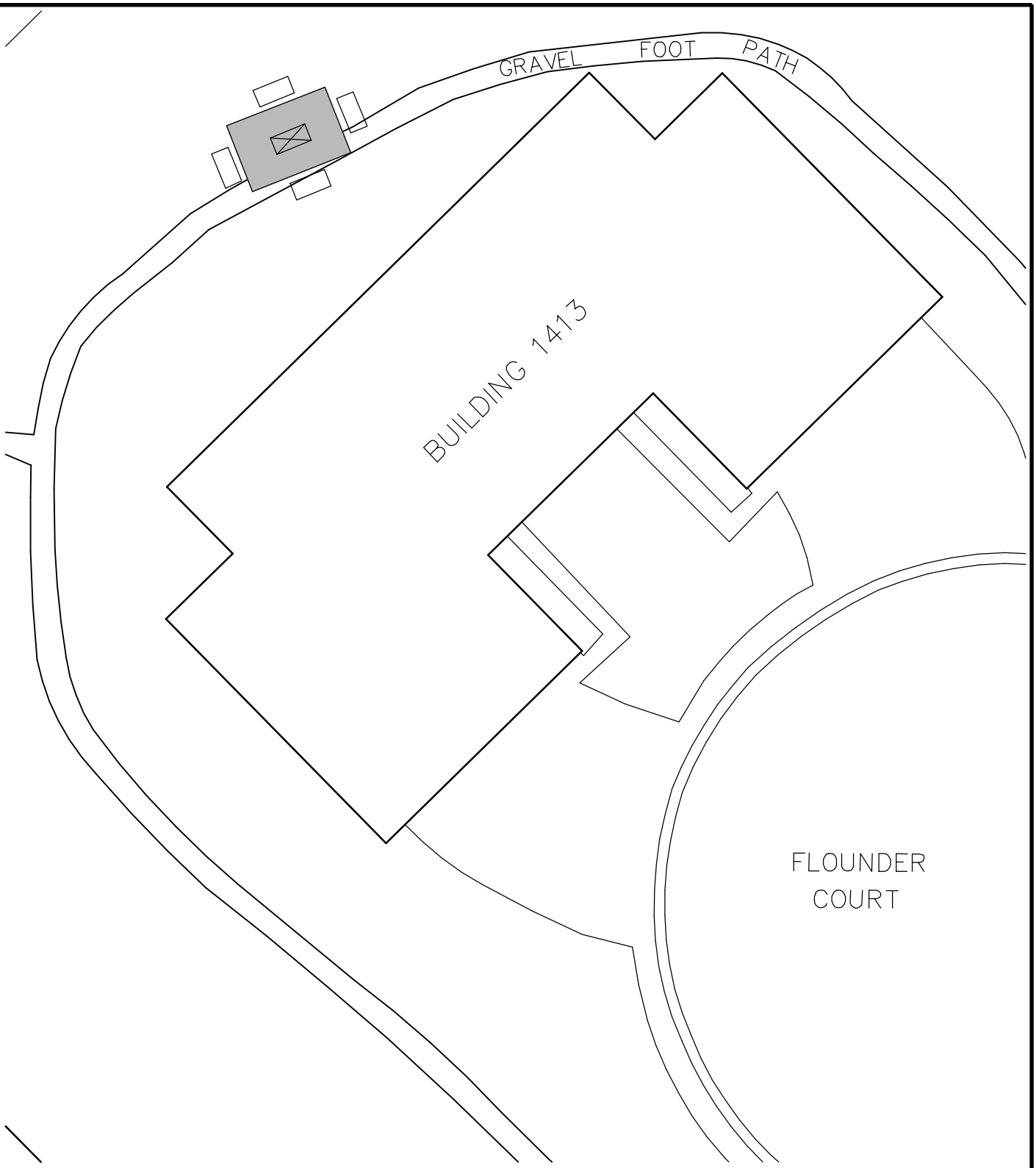
DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

FIGURE 1

SITE LOCATION MAP

NAVAL STATION TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA

OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
TI	MPortacio	1/16/02	SC	6/21/02	PB	6/21/02	819858-A22



LEGEND:

EXCAVATION LIMITS: 1 FOOT BELOW GROUND SURFACE

EXPLORATION TRENCH, ALL SAMPLES BAPeq<620 µg/kg

EXPLORATION TRENCH, ONE OR MORE SAMPLES BAPeq>620 µg/kg

SCALE

0 20 40

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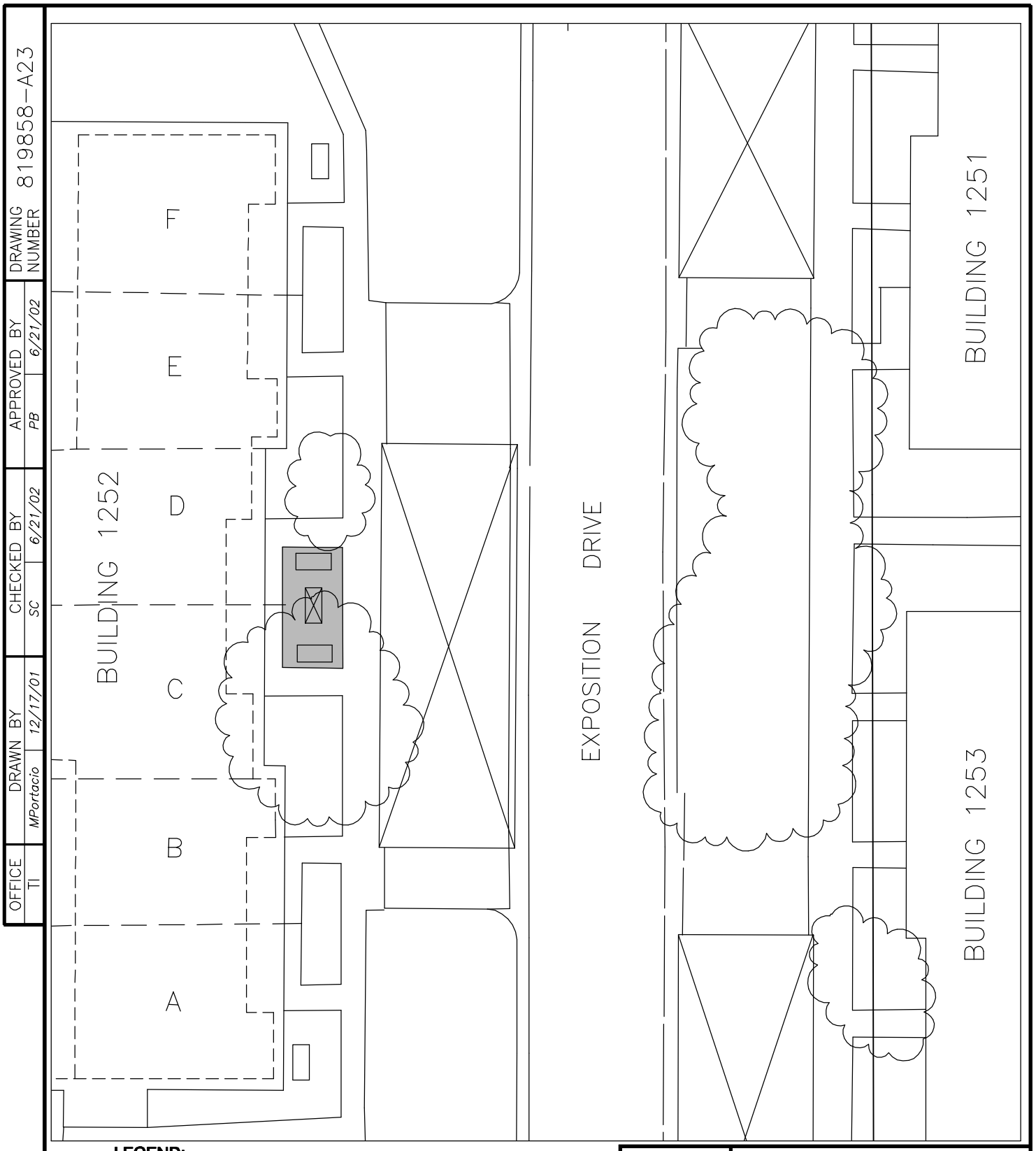
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

FIGURE 2

BUILDING 1413 SOIL REMOVAL

TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA



OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
TI	MPortacio 12/17/01	SC 6/21/02	PB 6/21/02	819858-A23

LEGEND:

- EXCAVATION LIMITS: 1 FOOT BELOW GROUND SURFACE
- EXPLORATION TRENCH, ALL SAMPLES BAPeq<620 µg/kg
- EXPLORATION TRENCH, ONE OR MORE SAMPLES BAPeq>620 µg/kg

SCALE

0 20 40

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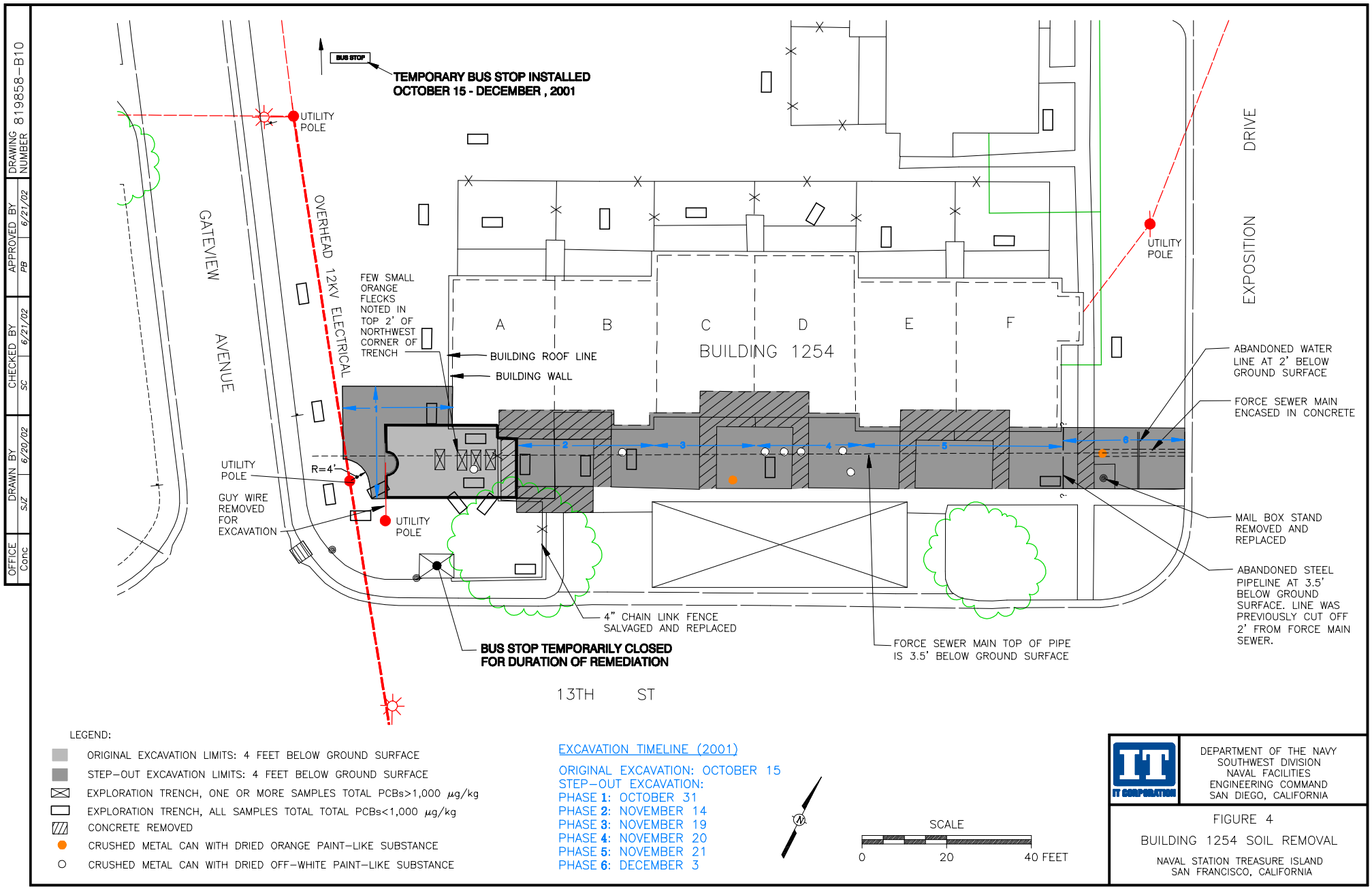
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

FIGURE 3

BUILDING 1252 SOIL REMOVAL

TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA



LEGEND:

- ORIGINAL EXCAVATION LIMITS: 4 FEET BELOW GROUND SURFACE
- STEP–OUT EXCAVATION LIMITS: 4 FEET BELOW GROUND SURFACE
- EXPLORATION TRENCH, ONE OR MORE SAMPLES TOTAL PCBs>1,000 µg/kg
- EXPLORATION TRENCH, ALL SAMPLES TOTAL TOTAL PCBs<1,000 µg/kg
- CONCRETE REMOVED
- CRUSHED METAL CAN WITH DRIED ORANGE PAINT–LIKE SUBSTANCE
- CRUSHED METAL CAN WITH DRIED OFF–WHITE PAINT–LIKE SUBSTANCE

EXCAVATION TIMELINE (2001)

ORIGINAL EXCAVATION: OCTOBER 15
STEP–OUT EXCAVATION:
PHASE 1: OCTOBER 31
PHASE 2: NOVEMBER 14
PHASE 3: NOVEMBER 19
PHASE 4: NOVEMBER 20
PHASE 5: NOVEMBER 21
PHASE 6: DECEMBER 3

SCALE
0 20 40 FEET

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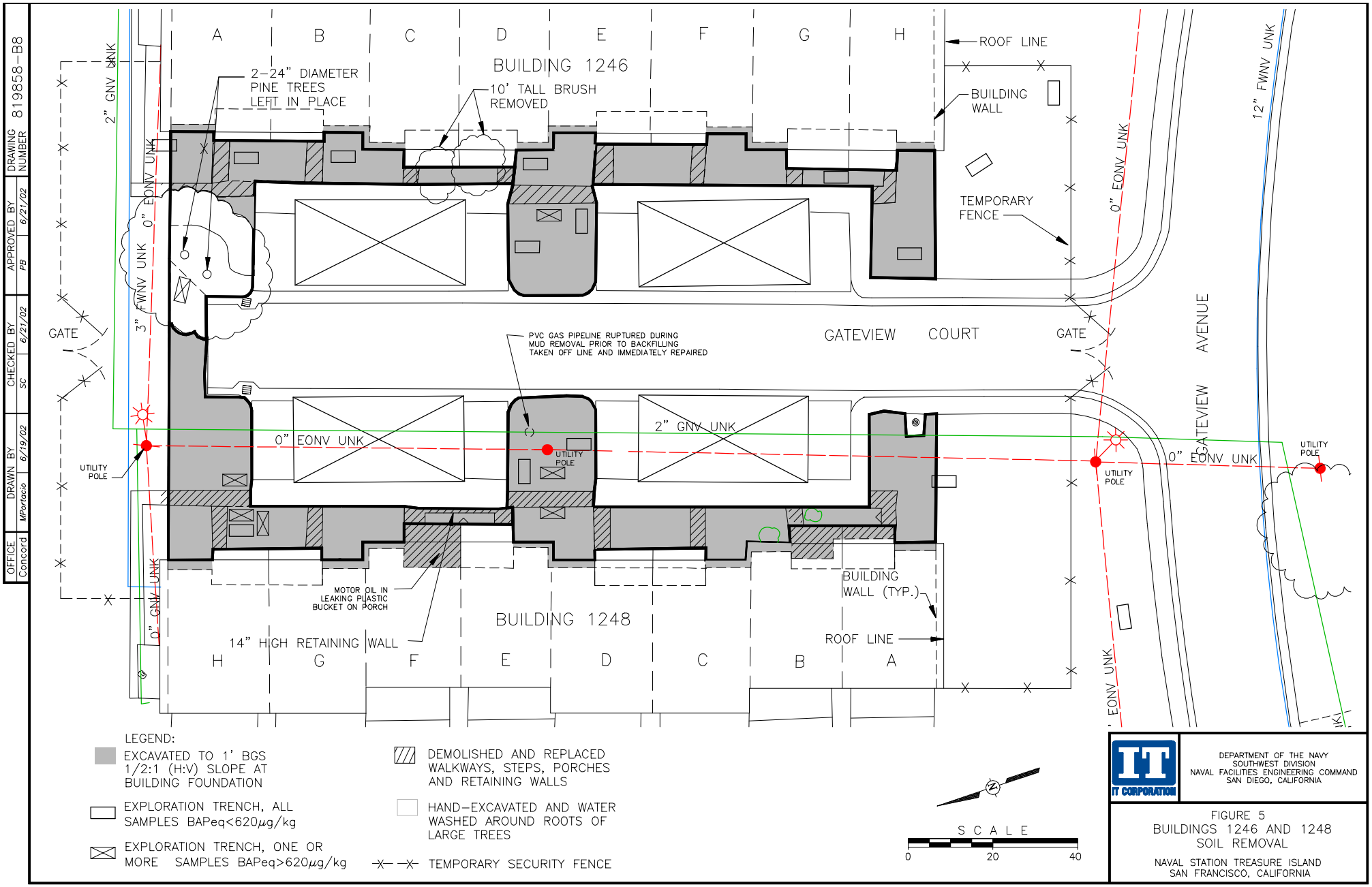
NAVAL FACILITIES
ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

FIGURE 4
BUILDING 1254 SOIL REMOVAL
NAVAL STATION TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA

OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Conc	SJZ 6/20/02	SC 6/21/02	PB 6/21/02	819858–B10



OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Concord	MPortacio 6/19/02	SC 6/21/02	PB 6/21/02	819858-B8

IT CORPORATION

DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

FIGURE 5
BUILDINGS 1246 AND 1248
SOIL REMOVAL

NAVAL STATION TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA

California Regional Water Quality Control Board
San Francisco Bay Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov
1515 Clay Street, Suite 1400, Oakland, California 94612
Phone (510) 622-2300 FAX (510) 622-2460

Gray Davis
Governor

Date: January 23, 2001
File No. 2169.6013 (SLR)

Ms. Ann Klimek
Environmental Business Line Team Leader
Southwest Division
Naval Facilities Engineering Command
BRAC Operations Office
1230 Columbia Street, Suite 1100
San Diego, CA 92101-8517

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
14	Water Board concurs	Section 2.4	Letter of Concurrence that Groundwater at the Naval Station Treasure Island, San Francisco, Meet the Exemption Criteria in the SWRCB Sources of Drinking Water Resolution 88-63. From Curtis T. Scott, Division Chief, Groundwater Protection and Waste Containment Division, California Regional Water Quality Control Board, San Francisco Bay Region. To Ms. Ann Klimek, Environmental Business Line Team Leader, Southwest Division, Naval Facilities Engineering Command. January 23, 2001.

Subject: Concurrence that Groundwater at the Naval Station Treasure Island, San Francisco, Meet the Exemption Criteria in the SWRCB Sources of Drinking Water Resolution 88-63

Dear Ms. Klimek:

Regional Water Quality Control Board (RWQCB) staff have reviewed your letter to Mr. Chris Maxwell dated March 24, 2000 regarding the Navy's request for written concurrence that groundwater at Treasure Island meets the exemption criteria for State Water Resources Control Board (SWRCB) Resolution No. 88-63. In your letter, the Navy evaluated existing and potential beneficial uses of groundwater at Treasure Island (see letter attached). Based on RWQCB staff review of the data provided, RWQCB staff find that the quality and the hydrogeologic conditions of the groundwater beneath Treasure Island is such that this water is not a potential source of drinking water pursuant to SWRCB Resolution 88-63 and Regional Water Quality Control Board (RWQCB) Resolution No. 89-39.

If you have questions, please feel free to contact Sarah L. Raker of my staff by telephone at (510) 622-2377 or by electronic mail at slr@rb2.swrcb.ca.gov.

Sincerely,

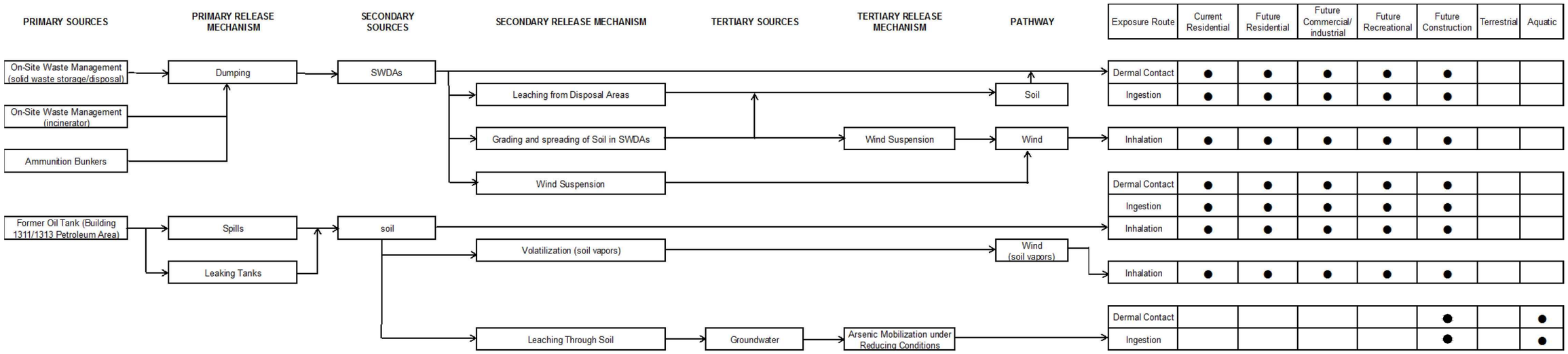
Curtis T. Scott

Curtis T. Scott, Division Chief
Groundwater Protection and
Waste Containment Division

Resolution88-63-exemption

cc: Mr. David Rist, Department of Toxic Substances Control
Mr. Phillip Ramsey, U.S. Environmental Protection Agency
Ms. Martha Walters, San Francisco Redevelopment Agency

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
15	risk CSM	Section 2.5	Final Feasibility Study for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. March 2014. Figure 3-2.



NOTE:
IR - Installation Restoration
SWDA - Solid Waste Disposal Area

SOURCE:
Remedial Investigation Report for IR Site 12, Old Bunker Area (TriEco-Tt, 2012)

Summary of Human Health and Environmental Exposures

Feasibility Study - IR Site 12
Former Naval Station Treasure Island
San Francisco, California

FIGURE
3-2

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
16	quantitative baseline HHRA	Section 2.5.1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Appendix C, Sections C1.0 through C7.7.

C1.0 INTRODUCTION AND OBJECTIVES

This appendix presents the methods for and the results of the baseline human health risk assessment (HHRA) for Installation Restoration (IR) Site 12, Former Bunker Area, at Naval Station Treasure Island (NAVSTA TI) in San Francisco, California. This appendix is provided as part of the remedial investigation (RI) for IR Site 12. The HHRA has been prepared in partial fulfillment of the objectives of the RI and incorporates guidance issued by the Department of Navy (Navy), the U.S. Environmental Protection Agency (EPA), and the California Environmental Protection Agency's (Cal/EPA) Department of Toxic Substances Control (DTSC).

NAVSTA TI is located in San Francisco Bay, midway between San Francisco and Oakland, California. IR Site 12 occupies approximately 93 acres at the northwestern end of Treasure Island (TI). IR Site 12 is predominantly a residential housing area consisting of multi-unit buildings with fenced backyards (about 900 housing units), open grassy areas between buildings, and paved roads and parking areas. The residences were constructed between 1967 and 1989 (Tetra Tech EM Inc. [Tetra Tech] 1999).

Land uses of IR Site 12 prior to use for military housing included ammunition storage, debris and trash disposal, waste incineration, decontamination training with short-life radionuclide liquid, solid waste storage, oil storage, vehicle parking, and an aircraft landing strip. From the early 1940s until about 1968, 21 ammunition bunkers were located in the IR Site 12 area (PRC Environmental Management, Inc. [PRC] 1995). Planned future uses of IR Site 12 include residential, commercial/industrial, and open space (recreational).

Exposure areas at IR Site 12 consist of the following 19 exposure units (EU) and 6 areas of interest (AOI) (see Figure 1-5 of the RI). Health risks were estimated separately for each of these 25 exposure areas.

- EU 1 through EU 19
- AOI 1201/1203/1220
- AOI 1246
- AOI 1248
- AOI 1254
- AOI Halyburton/Bigelow Court
- AOI Mariner Drive

Sections 1.0 through 3.0 of the RI report contain background information on the history of IR Site 12 and historical operations conducted at NAVSTA TI, the physical characteristics of the area, the nature and results of environmental investigations for the site, and the conceptual framework used to implement and document the RI. This information was used to conduct this HHRA but is not repeated in detail in this appendix.

HHRAs are prepared to evaluate potential health risks under current and future land use conditions. The specific objectives of this HHRA are as follows:

- Estimate the magnitude of potential human health risks associated with current site conditions and potential future land use scenarios
- Identify the environmental media and chemicals that pose the primary health concerns
- Identify the environmental media and chemicals that pose little or no threat to human health
- Provide a foundation for assessing the need for response actions

This HHRA is limited to evaluation of health risks from chemical exposures. Radiological risks will be assessed following completion of the radiological surveys for IR Site 12, and are not addressed as part of this HHRA. The Navy expects that the final status surveys and reports for IR Site 12 will be completed in 2014.

The methods used to conduct the HHRA are based on the risk assessment framework developed by EPA. The framework is set forth in "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)" (also known as "RAGS") (EPA 1989). The EPA HHRA framework consists of the following six basic steps:

- **Conceptual Site Model (CSM):** This step involves identifying potential exposure pathways to the chemicals of potential concern (COPC) and identifying human populations that might be exposed to them under current or future site conditions.
- **Data Evaluation and Selection of COPCs:** This step consists of evaluating the analytical data for usability in the HHRA, grouping analytical data by site and by medium, and selecting COPCs in site media.
- **Exposure Assessment:** This step quantifies exposure to the COPCs identified for exposure pathways that are potentially complete. Exposure point concentrations (EPC) are estimated from measured or modeled concentrations, and pathway-specific intakes (doses) are estimated using hypothetical human receptors for evaluation in the subsequent risk calculations.
- **Toxicity Assessment:** This step consists of compiling toxicity values that characterize potential adverse health effects from exposure to COPCs.
- **Risk Characterization:** This step combines the results of the previous steps to quantitatively characterize potential risks to human health associated with exposure to COPCs at the area evaluated. Both potential cancer risks and noncancer hazard indices (HI), a measure of the potential for adverse health effects other than cancer, are evaluated.
- **Uncertainty Analysis:** This step analyzes the major uncertainties associated with the risks and hazards calculated.

The remainder of this appendix, organized as follows, presents the methods for and results of each of these steps.

- Section C2.0 –Revisions to the HHRA methodology
- Section C3.0 – Conceptual site model
- Section C4.0 – Data used in the risk evaluation
- Section C5.0 – Identification of COPCs
- Section C6.0 – Exposure assessment
- Section C7.0 – Toxicity assessment
- Section C8.0 – Risk characterization
- Section C9.0 – Results of the human health risk assessment
- Section C10.0 – Uncertainty analysis

References used to prepare this appendix are listed in Section C11.0. Tables and figures are presented after the references. Thirty attachments (C1 through C30) accompany this appendix, following the tables and figures. Attachments C1 through C25 contain the analytical data summaries, exposure point concentration summaries, detailed risk calculations, and summaries of risk results for each of the 25 exposure areas at IR Site 12. Attachment C26 contains risk estimates for ambient concentrations at NAVSTA TI. Attachment C27 contains definitions for acronyms used in tables in Attachments C1 through C26. Attachments C28 and C29 describe the methods used to estimate concentrations of chemicals in outdoor and indoor air, respectively. Attachment C30 documents changes to the HHRA methodology that were made subsequent to completion of the RI work plan for IR Site 12. Attachment C31, which was completed as part of the uncertainty analysis for the HHRA, provides an evaluation of vapor intrusion risks based on groundwater data for IR Site 12.

C2.0 REVISIONS TO THE HHRA METHODOLOGY

The risk estimates presented in this appendix are based on the HHRA methodology outlined in the RI work plan and the revisions that were subsequently agreed upon. The initial methodology for the HHRA was developed as part of the RI work plan for IR Site 12 (SulTech 2006). Following finalization of the RI work plan, the Navy proposed changes to the HHRA methodology (Tetra Tech 2009). NAVSTA TI Base Realignment and Closure Cleanup Team (BCT) agreements regarding the changes to the HHRA methodology are provided in Attachment C30 of this appendix. In addition, the BCT commented on the "Final Technical Memorandum, Human Health Risk Evaluation for Soil and Residential Backyard Evaluation for Installation Restoration Site 12" (ChaduxTt 2010). Based on these comments, the Navy agreed to several additional revisions to the methodology (see Appendix A of the RI report). Finally, the Navy received comments on the "Draft Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California" (ChaduxTt 2011). Based on these comments, the Navy agreed to additional revisions to the HHRA methodology (see Appendix P); these additional revisions were implemented for this HHRA. The primary revisions to the HHRA methodology are summarized below.

- Use of a risk-based concentration (RBC) approach rather than the traditional, forward risk calculation approach described by EPA in RAGS Part A (EPA 1989).
- Use of a streamlined table format to present the risk calculations, rather than the RAGS Part D (EPA 2001) table format.
- Exclusion of central tendency exposure (CTE) risk estimates.
- Revision to the definition of total risk.
- Use of the RAGS Part F (EPA 2009a) methodology to estimate risks for the inhalation exposure route, rather than the RAGS Part A (EPA 1989) methodology.
- Use of updated toxicity equivalency factors (TEF) provided in Van den Berg and others (2006) for dioxin-like compounds.
- Use of updated EPA (2009b) methodologies for calculating EPCs.
- Elimination of risk-based screening to identify COPCs for risk estimates based on federal (EPA) toxicity criteria (formerly known as Method 1).
- Addition of risk estimates for a recreational exposure scenario.
- Calculation of groundwater risks for five source-based areas and one nonsource area.

One of the key changes to the HHRA methodology is the use of an RBC approach to estimate health risks from exposure to COPCs. The RBC approach is a streamlined approach that uses the ratio of COPC concentrations to RBCs to estimate cancer risks and noncancer HIs. These risk estimates are numerically equivalent to risk estimates obtained using the EPA (1989) "forward calculation methodology." Details regarding the RBC approach are provided in Section C8.0 of this appendix.

C3.0 CONCEPTUAL SITE MODEL

The CSM summarizes information on sources of chemicals at the site, affected environmental media, chemical release and transport mechanisms that may occur at each site, potentially exposed receptors, and potential exposure pathways for each receptor. Figure C-1 presents the CSM for IR Site 12. The components of the CSM are discussed below.

C3.1 SOURCES OF SITE CHEMICALS

Historical uses of IR Site 12 are summarized in Sections 1.0 through 3.0 of the RI report. Chemicals detected at IR Site 12 include metals, volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polycyclic aromatic hydrocarbons (PAH), pesticides, polychlorinated biphenyls (PCB), dioxin and furans, and total petroleum hydrocarbons (TPH). As discussed in RI Section 1.0, radionuclide contamination is also

present at IR Site 12; radiological health risks will be assessed separately, after completion of the radiation surveys.

C3.2 AFFECTED ENVIRONMENTAL MEDIA

Historical uses of IR Site 12 have resulted in chemical releases to soil and groundwater. Media at IR Site 12 affected by the chemical releases to soil and groundwater include soil, groundwater, soil gas, indoor air, and outdoor air.

This HHRA considers soil and groundwater as sources of site chemicals. Specific information on the nature and extent of chemical releases at IR Site 12 is summarized in Section 4.0 of the RI report.

C3.3 CHEMICAL RELEASE AND TRANSPORT MECHANISMS

Chemical release and transport mechanisms for the chemicals detected at IR Site 12 are shown on Figure C-1. Based on these transport mechanisms, nonvolatile chemicals detected in soil may migrate to ambient (outdoor) air, and volatile chemicals detected in soil and groundwater may migrate to outdoor and indoor air. Outdoor air and indoor air are therefore considered additional sources of exposure for site chemicals.

C3.4 POTENTIALLY EXPOSED HUMAN RECEPTORS

IR Site 12 is currently used for residential housing. Therefore, a resident was selected as a current receptor for evaluation in the HHRA.

The planned future use for IR Site 12 is residential and open space/recreational. Other potential uses include industrial and commercial land uses. It is understood that exposures under industrial and commercial land uses differ. However, the risk assessment methodology established for IR Site 12 treats industrial and commercial land use as a single category, and the same exposure assumptions are used for both (SulTech 2006). This HHRA assumes industrial land use is protective of commercial land use. Therefore, an industrial worker, recreational user, and residential receptor were selected as potential future receptors for evaluation in the HHRA. An unrestricted (residential) land use scenario generally represents the greatest potential for exposure to site chemicals and is evaluated to provide additional information to support risk management decisions for a site. The future scenarios assume that development of IR Site 12—including excavation, distribution to the surface, and regrading of soils—would be required for future use. Therefore, a future construction worker was also identified as a potential receptor. In summary, five potentially exposed receptors were evaluated in the HHRA for IR Site 12:

- Current residential
- Future residential
- Future commercial/industrial
- Future recreational

- Future construction workers. (Although no current construction workers are working at IR Site 12, outside of the solid waste disposal areas [SWDA], which are excluded from the IR Site 12 HHRA, the HHRA results for this receptor would be equivalent to results for a current construction worker receptor.)

C3.5 POTENTIALLY COMPLETE EXPOSURE PATHWAYS

According to guidance from EPA (1989), a complete exposure pathway consists of four elements:

- A source and mechanism of chemical release
- A retention or transport medium (or media, in cases involving transfer of chemicals)
- A point of potential human contact with the contaminated medium (referred to as the exposure point)
- An exposure route (such as ingestion) at the contact point

If any of these elements is missing (except in a case where the source itself is the point of exposure), then the exposure pathway is considered incomplete. For example, if human contact with the source or transport medium does not occur, then the exposure pathway is incomplete and is not quantitatively evaluated for risk. Similarly, if human contact with an exposure medium is not possible, the exposure pathway is considered incomplete and is not evaluated.

The CSM for IR Site 12 summarizes the information on sources of COPCs, affected environmental media, COPC release and transport mechanisms that may occur at the site, potentially exposed receptors, and potential exposure pathways for each receptor (see Figure C-1). Potentially complete exposure pathways are designated by a "C" in the CSM. Incomplete exposure pathways are designated by an "I." Quantitative risk evaluation (that is, calculation of numerical cancer and noncancer risk estimates) was conducted for exposure pathways identified in the CSM as potentially complete. This information is also summarized in the Table 1 series of Attachments C1 through C26; for example, for EU 1, information on exposure pathways evaluated for the HHRA is summarized in Table C1-1.1 of Attachment C1.

Many of the exposure pathways for the future exposure scenarios (industrial worker, construction worker, and resident) are based on assumed future exposures; these pathways are considered potentially complete and are evaluated to provide a conservative estimate of risk.

C3.5.1 Soil

Four potentially complete exposure pathways for surface soil and subsurface soil were identified for each of the five receptors selected for evaluation in the HHRA:

- Incidental ingestion of soil
- Dermal contact with soil

- Inhalation of chemicals released to outdoor air from wind erosion and volatilization
- Inhalation of chemicals released to indoor air from subsurface vapor intrusion

Ingestion of homegrown produce by residents at IR Site 12 is considered a negligible exposure pathway. IR Site 12 is currently populated with multiple, high-density housing units and it is anticipated that high-density residential use will continue at the site, given the redevelopment plans for IR Site 12 proposed in the Draft Naval Station Treasure Island Reuse Plan (City and County of San Francisco 1996). Under current use and current site conditions, exposure to soil in the backyard areas is restricted, given the various temporary remedies in place (home gardening restrictions, and pavement and vegetative covers). For residential use under altered site conditions (in the event the site is redeveloped), the growing of produce in meaningful amounts is considered unlikely (SulTech 2006). For this reason, the ingestion of homegrown produce will not be quantified at IR Site 12.

Exposure to surface soil (0 to 2 feet below ground surface [bgs]), which assumes current site conditions or minimal development of the site during future land use, was evaluated for the current resident, future resident, future commercial/industrial worker, and future recreational user. Exposure to combined surface and subsurface soil (0 to 10 feet bgs) was also evaluated for all future receptors. Exposure to combined surface and subsurface soil assumes that future use of the site involves intrusive development and excavation of site soil, thereby mixing soils throughout the soil column and making deeper soils available at the surface for contact.

Soil gas data were used to evaluate exposure from subsurface vapor intrusion of volatile chemicals in soil to indoor air (see Section C6.1.4).

C3.5.2 Groundwater

Under the San Francisco Bay Basin Water Quality Control Plan, all groundwater within the Bay Basin that meets the criteria of State Water Resources Control Board (SWRCB) Resolution No. 88-63 has a potential beneficial use for municipal or domestic supply (SWRCB 1988). However, groundwater at TI, including IR Site 12, is not a current drinking water source and is considered nonpotable according to information summarized in a letter from the San Francisco Bay Regional Water Quality Control Board (Water Board), dated January 23, 2001 (Water Board 2001). This letter states, "the quality and the hydrogeologic conditions of the groundwater beneath Treasure Island is such that this water is not a potential source of drinking water pursuant to SWRCB Resolution 88-63 and Regional Water Quality Control Board Resolution No. 89-39." Consequently, exposure to groundwater as a drinking water source is considered incomplete for all receptors at IR Site 12.

Indirect exposure to chemicals in groundwater, however, may result from subsurface vapor intrusion to indoor air or during construction activities that involve trenching. Exposure to groundwater from vapor intrusion is evaluated for the current residential, future residential, and future commercial/industrial receptors. Soil gas data were used to evaluate exposure from subsurface vapor intrusion of volatile chemicals in groundwater to indoor air (see Section C6.1.4).

Exposure to chemicals in groundwater during trenching may result from dermal contact with groundwater and inhalation of chemicals in groundwater that volatize and accumulate in a construction trench. The HHRA therefore evaluated these two exposure pathways for groundwater for the construction worker scenario.

C4.0 DATA USED IN THE RISK EVALUATION

Analytical data for soil, groundwater, and soil gas are available for IR Site 12 (see Section 4.0 of the RI report). This section discusses the process used to evaluate, reduce, and group the analytical data for quantitative evaluation in the HHRA.

Field screening data (for example, passive soil gas and waste characterization data) and groundwater samples collected using direct-push sampling methods were excluded from the HHRA because they do not provide appropriate measurements for quantifying exposure, do not represent an environmental medium for human exposure, or do not meet data quality criteria for risk assessment.

Outdoor air (background) samples and indoor air samples were collected at Halyburton Court and Bigelow Court and analyzed for PCB congeners as part of the characterization of IR Site 12 (see Section 1.3.14 of the RI report). Volatile chemicals in soil and groundwater can be released to indoor air as a result of subsurface vapor intrusion and to outdoor air during construction or trenching activities. Chemicals in soil can be released to outdoor air as a result of volatilization or wind suspension or to indoor air as a result of subsurface vapor intrusion. Soil gas data were collected at IR Site 12 to evaluate vapor intrusion. Transfer of volatile chemicals from the subsurface was modeled on the basis of concentrations of volatile chemicals in soil gas (see Section C6.1.4). Similarly, transfer of COPCs from soil and groundwater to outdoor air was modeled on the basis of concentrations in soil and groundwater (see Sections C6.1.2 and C6.1.3).

C4.1 DATA EVALUATION

All validated soil, groundwater, and soil gas analytical data collected during investigations for IR Site 12 were initially considered for evaluation in the HHRA. Data associated with these investigations are further described in Sections 3.0 through 5.0 of the RI report.

As part of the data evaluation process, all of the analytical data underwent cursory validation, and 10 percent of the data underwent full validation to verify they met EPA data quality criteria for use in risk assessment (EPA 1992). The laboratory analytical data were evaluated by an independent validation contractor using EPA Contract Laboratory Program National Functional Guidelines for Inorganic and Organic Data Review (EPA 2004, 1999) and the associated analytical methods.

The cursory review evaluated key quality assurance and quality control information such as holding times, calibration requirements, and spiking accuracy. The full validation evaluated additional quality assurance and quality control criteria and used the raw data to check calculations and chemical identifications. The overall objective was to verify that the analytical data met EPA

guidelines for adequacy based on precision, accuracy, representativeness, comparability, and completeness parameters. At each stage of the validation, qualifiers were assigned to the results according to EPA guidelines (EPA 2004, 1999) and associated analytical methods.

All validated data without qualifiers and all validated data qualified as estimated (J) and not detected (U) were used in the HHRA for chemicals detected in at least one sample. Data qualified as not detected for these chemicals were incorporated into the HHRA using Monte Carlo simulation methods (see Appendix B of the RI report). Chemicals not detected in any samples were excluded from evaluation in the HHRA. Validated data qualified as rejected (R) were excluded from the HHRA.

The validated data for soil, groundwater, and soil gas for each of the exposure areas at IR Site 12 are presented in Appendices I through K of the RI report. Sampling locations associated with the data are presented on Figures 4-1 through 4-28 of the RI report.

C4.2 DATA REDUCTION

In addition to the quality evaluation, the following data reduction processes were implemented for the HHRA.

- Data for samples from areas that have undergone removal action, data for composite samples, and data for tentatively identified compounds were excluded from the HHRA. Composite samples were collected for soil at EU 1, EU 5, EU 12, AOI 1248, and AOI 1254. The uncertainty associated with the risk estimates for IR Site 12 based on the exclusion of the composite sample results is discussed in Section C10.5.

- Duplicate samples were collected for some samples of groundwater at IR Site 12 to assess laboratory precision. For these cases, the result for the original sample was retained, and the result for the duplicate sample was excluded from the HHRA. The results for duplicate soil samples were retained in the data set for the HHRA.

- For some organic chemicals, more than one method was used to analyze samples (for example, naphthalene and 1,3-dichlorobenzene). For these cases, the result associated with the maximum detected concentration for a detected chemical or the minimum reporting limit for a nondetected chemical was used in the HHRA. This methodology ensures the HHRA remains conservative by using the maximum detected concentrations, while incorporating the increased precision of lower reporting limits for nondetected chemicals.

- For xylene, analytical results for some samples were reported for specific isomers (that is, m-, o-, and p-xylene) rather than for total xylene. In these cases, the results for the individual xylene isomers were summed to calculate total xylene, and the calculated result for total xylene was used in the HHRA. Isomer-specific xylene results were not evaluated in the HHRA.

- For groundwater, only data collected from monitoring wells were included in the HHRA. Monitoring well data from the four most recent sampling rounds on a per-well and per-chemical basis were used in the HHRA. The June 2010 sampling event is the most recent sampling event included in the groundwater data set evaluated in this HHRA.

- Analytical results for metals in groundwater included total metals and dissolved metals. Results for total metals were used in the HHRA.

- For soil gas, only data from the 2008 soil gas sampling event were included in the HHRA. Results of historical indoor air sampling conducted at AOI Halyburton/Bigelow Court in 2000 and 2002 (see Section 1.3.14 of the RI report) are discussed in the RI report, but were not evaluated in the HHRA because evaluation of the results showed that detected concentrations did not pose a health risk (SulTech 2006, 2007).

C4.3 DATA GROUPING

Data for soil and soil gas were grouped by each EU or AOI (for example, EU 1 data were grouped separately from EU 2 data). Data for groundwater were grouped by source area. Additional details on the grouping of data for soil, soil gas, and groundwater are provided below. The EUs, AOIs, and groundwater source areas are shown on Figure 1-5 of the RI report. Analytical data summaries for each exposure area, by data grouping, are presented in the Table 2 series of Attachments C1 through C25. For example, for EU 1, the analytical data summaries are presented in Tables C1-2.1 through C1-2.4 of Attachment C1.

C4.3.1 Grouping Data for Soil

For each exposure area, soil data were grouped by two depth intervals: surface soil, represented by data collected from 0 to 2 feet bgs, and subsurface soil, represented by data collected from 0 to 10 feet bgs. Additionally, surface soil data were grouped into two categories: samples collected from unpaved sample locations, and samples collected from all locations, regardless of pavement.

These data groupings resulted in up to three soil data sets for each exposure area: unpaved surface soil, surface soil, and subsurface soil. These three data sets were used to evaluate soil exposures in the HHRA as follows:

- Current residential scenario: Evaluation of soil exposures for this scenario was based on the unpaved surface soil data set; that is, samples collected from 0 to 2 feet bgs in unpaved locations.

- Future residential, future commercial/industrial, future recreational, and future construction worker scenarios: Evaluation of soil exposures for these scenarios was based on two data sets: all surface soil (samples collected from 0 to 2 feet bgs regardless of pavement) and subsurface soil (samples collected from 0 to 10 feet bgs regardless of pavement). Soil exposures for each scenario were evaluated separately for each data set. Soil exposure for the future construction

worker scenario was assumed to be limited to subsurface soil because construction workers are anticipated to be involved with intrusive excavation activities.

Evaluation of surface soil exposure for the current residential scenario is based exclusively on the unpaved surface soil data set, while evaluation of surface soil exposure for the future scenarios is based solely on the all-soil surface soil data set. For this reason, discussions in later sections of the HHRA regarding scenarios evaluated for surface soil exposure do not distinguish between the unpaved surface soil data set and the all surface soil data set. It is implicit that discussions of surface soil exposure and surface soil risks for the current residential scenario are based on the unpaved surface soil data set, and discussions of surface soil exposure and surface soil risks for the future residential, commercial/industrial, and recreational scenarios are based on the all surface soil data set.

For some exposure areas, samples were not collected from paved locations. For these areas, grouping of surface soil data is based solely on unpaved locations, and risk estimates for exposure to surface soil are the same for current and future residential receptors.

As discussed in Section C1.0, IR Site 12 is predominantly a residential housing area consisting of multi-unit buildings with fenced back yards (about 745 backyard areas). The majority of these back yards have not been sampled for soil; however, there is no evidence that soil within the residential back yards was placed in a different manner than the entirety of the EU (see Section 1.2.3.5 of the RI report). The RI for IR Site 12 assumes that the nature and extent of chemical contamination and health risk estimates for each EU or AOI are representative of the nature and extent of contamination and health risk estimates for individual residential backyard areas within each EU or AOI. The uncertainties associated with this assumption on the HHRA results are further disused in Section C10.1 of this appendix.

Some uncertainty may be associated with the use of soil sample results from the 0 to 2 feet bgs depth interval to estimate health risks from exposure to surface soil. In general, the preferred depth interval for evaluating surface soil exposure is 0 to 0.5 feet bgs rather than 0 to 2 feet bgs. The 0 to 0.5 feet bgs interval generally is a more realistic depth interval for exposure to current site conditions and future conditions with minimal soil disturbance. Inclusion of deeper soils (0.5 to 2 feet bgs) in the surface soil depth interval may result in an underestimate of health risks if chemical concentrations are lower at depths of 0.5 to 2 feet bgs than at 0 to 0.5 feet bgs. However, the HHRA methodology established for IR Site 12 and agreed to by the BCT was based on use of the 0 to 2 feet bgs depth interval to represent surface soil (SulTech 2006); use of this depth interval for surface soil is consistent with the approach used for HHRAs for other NAVSTA TI sites. Additionally, approximately 50 percent of the data for soil from 0 to 2 feet bgs were collected from 0.5 to 2 feet bgs; exclusion of data from 0.5 to 2 feet bgs from the surface soil data set would result in approximately a 50 percent reduction in the amount of data available for estimating health risks from exposure to surface soil. The uncertainty analysis of this HHRA qualitatively evaluates the likelihood that the use of 0 to 2 feet bgs to represent surface soil may result in an underestimate of health risks for surface soil (see Section C10.10).

C4.3.2 Grouping Data for Soil Gas

Soil gas data were collected for the following 16 of the 25 exposure areas at IR Site 12: EUs 1 through 5, EUs 8 through 13, EUs 15 through 17, EU 19, and AOI Mariner Drive. Soil gas data were grouped by each exposure area. Figures 4-27 and 4-28 of the RI report show the locations of the soil gas samples.

C4.3.3 Grouping Data for Groundwater

Groundwater data were grouped by source area, and health risks from exposure to groundwater were estimated on a source area basis rather than an EU or AOI basis. Five source areas for groundwater were identified based on the nature and extent of chemical contamination in groundwater at IR Site 12 (see Section 4.5 of the RI report): GW-S1, GW-S2, GW-S3, GW-S4, and GW-S5. Several monitoring wells for which analytical data are available are outside of the boundaries of the five identified groundwater source areas. These monitoring wells are located in EUs 5, 6, 7, 13, 14, and 16 and AOI Halyburton/Bigelow Court. Data from these wells were collectively evaluated as a sixth, non-source-based groundwater exposure area (GW-NS1).

C5.0 IDENTIFICATION OF CHEMICALS OF POTENTIAL CONCERN

COPCs are chemicals that are carried through the quantitative exposure assessment and risk characterization. COPCs for soil, groundwater, and soil gas were identified separately for each exposure area and data grouping. All chemicals detected in at least one sample, except essential human nutrients and TPH, were initially identified as COPCs. Chemicals considered essential human nutrients are calcium, magnesium, potassium, and sodium. TPH data were not evaluated in the HHRA because these data are not chemical-specific and are considered inadequate and insufficient for risk evaluation (DTSC 1993). Rather, the data for specific TPH indicator chemicals (for example, benzene, toluene, ethylbenzene, xylenes, and individual PAHs) were used to assess health risks from TPH contamination.

When detected, individual Aroclors (that is, Aroclor-1016, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260) and individual carcinogenic PAHs (that is, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, chrysene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene) were identified as individual COPCs. Accordingly, exposures, risks, and hazards were calculated separately for these individual Aroclors and PAHs. However, for presenting and discussing the results of the HHRA, risk results for these COPCs were summed and discussed as total Aroclors and benzo(a)pyrene equivalents, or BAP (EQ) (see Section C9.0).

The identified COPCs were used to estimate “total risk” at each exposure area; that is, the risk associated with exposure to all chemicals detected, regardless of whether the chemical is present at ambient concentrations. In addition to estimating total risk, “site risk” and “ambient risk” were estimated. Site risk excludes as COPCs those metals that are present at or below ambient concentrations. Ambient risk represents the risks associated with ambient concentrations. Further details on the methodology used to calculate total, site, and ambient risks are provided in Section C8.0. Appendix B to the RI report provides the results of statistical comparisons between site and ambient concentrations.

C6.0 EXPOSURE ASSESSMENT

An exposure assessment identifies potential human receptors that could be exposed to site-related chemicals, as well as the routes, magnitude, frequency, and duration of the potential exposures. Reasonable maximum exposure (RME) health risks were estimated in this HHRA. Estimates of health risks based on CTE were not included in the HHRA. The potential exposure scenarios and pathways for IR Site 12 were presented in Section C3.0, Conceptual Site Model. The remainder of this section describes the process used to estimate EPCs for COPCs for each exposure scenario and pathway.

C6.1 EXPOSURE POINT CONCENTRATIONS

The EPC is the concentration of a COPC in an exposure medium (for example, surface soil) that a receptor may be exposed to. The methods used to calculate EPCs for soil and groundwater are described in Appendix B. The EPCs calculated for each soil and groundwater COPC for each data grouping are summarized in the Table 3 series of Attachments C1 through C25. For example, for EU 1, the EPCs are presented in Tables C1-3.1 through C1-3.3 of Attachment C1. The EPC for each COPC is represented by the 95 percent upper confidence limit of the arithmetic mean (95UCL). For some COPCs, the calculated 95UCL exceeds the maximum detected concentration; for these cases, the maximum detected concentration is used as the EPC.

As discussed in Section C3.0, COPCs in soil may be transferred to outdoor and indoor air from wind erosion or volatilization. Samples were collected for outdoor (background samples only) or indoor air only at Halyburton Court and Bigelow Court and analyzed for PCB congeners at IR Site 12 (see Sections 1.3.14.1 and 1.3.14.2 in the RI). Because an RBC approach was used for this HHRA, transport models were incorporated in the development of RBCs to account for transfer mechanisms from soil and groundwater in the absence of direct measurements of chemical concentrations in air. These models are discussed below. Section C8.0 discusses the methods used calculate RBCs for IR Site 12.

C6.1.1 Outdoor Air – Particulate Chemicals Released from Soil

Particulate emission factors (PEF) that relate particulate concentrations in outdoor air from COPCs in soil were used to develop RBCs for soil. For all scenarios except the construction worker scenario, the HHRA used a default PEF of 1.36×10^9 cubic meters per kilogram (m^3/kg) provided in EPA (2011a). For the construction worker scenario, the HHRA used a construction activity-specific PEF of 1.0×10^6 m^3/kg (DTSC 2011a).

C6.1.2 Outdoor Air – Volatile Chemicals Released from Soil

Chemical-specific volatilization factors (VF) that relate concentrations in outdoor air from volatile COPCs in soil were used to develop RBCs for soil. VFs were taken from EPA (2011a) and are summarized in Table C-1A.

C6.1.3 Outdoor Air – Volatile Chemicals Released from Groundwater to Construction Trench Air

Chemical-specific volatilization factors that relate concentrations of volatile chemicals in groundwater accumulated in a construction trench to airborne concentrations that may be inhaled by construction workers were used to develop groundwater RBCs. VFs for this scenario were calculated based on guidance from the Virginia Department of Environmental Quality (VDEQ), which provides a combination of a vadose zone model to estimate volatilization of gaseous COPCs from groundwater into a trench and a box model to estimate dispersion of the COPCs from the air inside the trench into aboveground air (VDEQ 2005). The models used to estimate volatilization into a construction trench are described in Attachment C28 to this appendix.

C6.1.4 Indoor Air – Subsurface Vapor Intrusion

Soil gas data were collected for IR Site 12 to evaluate health risks from subsurface vapor intrusion of volatile chemicals in soil and groundwater to indoor air. Maximum detected concentrations in soil gas for each exposure area were used as soil gas EPCs. Maximum concentrations, rather than 95UCLs, were used as EPCs for soil gas because potential indoor air exposures from vapor intrusion are more likely to be building-specific, rather than exposure-area wide. For evaluation of current exposures, minimum sample requirements for calculation of 95UCLs were not met on a per-building basis. For evaluation of potential future exposures, use of maximum detected concentrations is recommended (DTSC 2011b).

Health risks from vapor intrusion exposure were estimated using site-specific RBCs for soil gas. This approach involved first calculating RBCs for indoor air, then using modeling to estimate the attenuation of chemical concentrations between soil gas and indoor air, and then applying the estimated attenuation to the indoor air RBCs to derive soil gas RBCs. Attachment C29 details the methodology used to develop soil gas RBCs.

C6.2 Exposure Assumptions and Daily Intake

Daily intake is the amount of a COPC that may be taken into an individual's body, averaged over the period that the individual is exposed. Estimates of daily intake of COPCs are based on the EPCs and exposure-scenario-specific assumptions and intake parameters. Because an RBC approach was used for this HHRA, estimates of daily intake are incorporated in the derivation of COPC-specific RBCs.

EPA-derived exposure algorithms were used to estimate the chemical intakes for each route of exposure (that is, oral, dermal, and inhalation). The generic equations for calculating chemical intake are provided below (EPA 1989, 2009a):

$$I\ (oral\ or\ dermal) = \frac{C \times CR \times EF \times ED}{BW \times AT}$$

$$I\ (inhalation) = \frac{C \times ET \times EF \times ED}{AT}$$

where:

I = Intake: the amount of chemical at the exchange boundary from oral or dermal exposure (milligram per kilogram per day for oral and dermal exposure; milligram per cubic meter for inhalation exposure)

C = Chemical concentration for the exposure medium: the EPC (for example, milligram per kilogram [mg/kg] for soil)

CR = Contact rate: the amount of contaminated medium contacted orally or dermally per unit of time or event; may be the ingestion rate or dermal contact rate (for example, milligram per day for the ingestion rate of soil). The contact rate is not applicable for inhalation exposures.

ET = Exposure time: number of hours the exposure occurs (hours per day [hr/day]); the exposure time is applicable only for inhalation exposures.

EF = Exposure frequency: how often the exposure occurs (days per year)

ED = Exposure duration: the number of years a receptor comes in contact with the contaminated medium (years)

BW = Body weight: the average body weight of the receptor over the exposure period (kilograms); applicable only for oral and dermal exposures

AT = Averaging time: the period over which exposure is averaged (days for oral and dermal exposures; hours for inhalation exposures)

For carcinogens, the averaging time is 25,550 days (oral and dermal exposures) and 613,200 hours (inhalation exposures) on the basis of a lifetime exposure of 70 years, which represents the average life expectancy.

For noncarcinogens, the averaging time is equal to the exposure duration expressed in days (ED x 365 days/year) for oral and dermal exposures and in hours (ED x 365 days/year x 24 hr/day) for inhalation exposures.

Pathway-specific variations of the generic equations above are used to calculate exposure-scenario-specific daily intakes of COPCs. Exposure assumptions for the parameters used to calculate daily intake were established in the RI work plan for IR Site 12 (SulTech 2006) and subsequent revisions to the work plan (Tetra Tech 2009). These assumptions are listed in Tables C-2A through C-2C.

For evaluation of the dermal exposure route for soil, chemical-specific dermal absorption factors (ABS) are used to estimate the fraction of COPCs that cross the skin barrier. ABS values used for this evaluation were taken from DTSC (1994) and EPA (2011a); the most conservative values from these two sources were used. ABS values are summarized in Table C-1A.

For evaluation of the dermal exposure route for groundwater, chemical-specific dermal permeability coefficients (Kp) are used to estimate the rate at which COPCs in groundwater cross the skin barrier. Kp values were taken from EPA (2009a) and are summarized in Table C-1B.

C7.0 TOXICITY ASSESSMENT

The toxicity assessment identifies the reference doses (RfD), reference concentrations (RfC), slope factors (SF), and inhalation unit risks (IUR) used to evaluate adverse noncancer health effects and cancer risks. Based on the methodology established for the IR Site 12 HHRA, two sets of risks were calculated: one set using federal (EPA) toxicity criteria, and the other set using Cal/EPA toxicity criteria. The hierarchy of sources used to obtain EPA and Cal/EPA toxicity criteria is described below. Special considerations on route-to-route extrapolations; selection of surrogates; chromium; dioxins, furans, and dioxin-like PCBs; nondioxin-like PCBs; lead; and mutagens are discussed in Sections C7.1 through C7.7.

The first set of risk estimates were calculated using the federal EPA toxicity criteria hierarchy. Sources used to obtain toxicity criteria for the EPA hierarchy are listed below, and follow EPA (2003).

- Tier 1: EPA's Integrated Risk Information System (IRIS). IRIS is an online database that contains EPA-approved RfDs, RfCs, SFs, and IURs (EPA 2012). The toxicity criteria provided in IRIS have undergone review and are recognized as agency-wide consensus information.
- Tier 2: EPA's Provisional Peer-Reviewed Toxicity Values (PPRTV) Database. EPA's PPRTVs are EPA-approved RfDs, RfCs, SFs, and IURs that have undergone review and are recognized as consensus information. The PPRTVs are obtained from EPA (2011a).
- Tier 3: Other toxicity values, from the following sources in the order in which they are listed below. The order of preference below for Tier 3 toxicity values is generally consistent with the order used by EPA (2011a) for developing regional screening levels (RSL), except that Cal/EPA criteria are given preference for Tier 3 values:
    a. Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA) online database (OEHHA 2012).
    b. Agency for Toxic Substances and Disease Registry (ATSDR) minimal risk levels (ATSDR 2012).
    c. EPA PPRTV appendix screening toxicity values, as cited EPA (2011a)
    d. EPA's Health Effects Assessment Summary Tables (EPA 2011b).

The second set of risk estimates were calculated using a similar toxicity criteria hierarchy, except that Cal/EPA SF and IUR toxicity criteria provided in the OEHHA database (OEHHA 2012), when available, were used preferentially over EPA criteria for estimating cancer risks.

These toxicity criteria hierarchies result in different cancer risk estimates because the hierarchy of sources used to identify cancer SFs and IURs differs between EPA and Cal/EPA. However, the hierarchy of sources used to identify noncancer RfDs and RfCs is the same between EPA and Cal/EPA. Therefore, for each exposure area, two sets of cancer risks and one set of noncancer hazards were calculated.

The EPA and Cal/EPA toxicity criteria used for the soil risk evaluation are presented in Tables C-3 through C-10.

C7.1 ROUTE-TO-ROUTE EXTRAPOLATION

Toxicity criteria are not available for the dermal exposure route; therefore, route-to-route extrapolations of oral toxicity criteria were used to evaluate dermal exposures for all COPCs. The oral absorption efficiency was assumed to be 100 percent for all COPCs; that is, oral toxicity criteria were not adjusted for absorption efficiency to evaluate dermal exposures (SulTech 2006).

Toxicity criteria are also not available for the inhalation exposure route for some COPCs. EPA (2009a) generally does not support simple route-to-route extrapolations (that is, use of oral toxicity criteria to evaluate inhalation exposures) because risks and hazards may be misrepresented when data from one route are substituted for another without any consideration of the pharmacokinetic differences between the routes. Therefore, route extrapolation was not used to evaluate inhalation exposures for COPCs lacking inhalation toxicity criteria. The uncertainty analysis of this HHRA provides a qualitative evaluation of this exposure route and addresses the implications of not quantitatively assessing risks from inhalation exposure for COPCs lacking inhalation toxicity criteria (see Section C10.7).

C7.2 CHEMICAL SURROGATES

The following chemical surrogates were used to avoid data gaps in the HHRA because of a lack of toxicity criteria for some COPCs. Chemical surrogates were selected based on structural similarity, chemical activity, and mechanisms of toxicity.

COPC Lacking Toxicity Information	Chemical Surrogate Used in HHRA
1,3-Dichlorobenzene	1,2-Dichlorobenzene
1-Methylphenanthrene	Anthracene
Phenanthrene	
2,3,5-Trimethylnaphthalene	2-Methylnaphthalene
2,6-Dimethylnaphthalene	
Acenaphthylene	Acenaphthene
alpha-Chlordane	Chlordane
gamma-Chlordane	
Aroclor-1242 (noncancer effects)	Aroclor-1254
PCB (total) (noncancer effects)	
Benzo(b,k)fluoranthene	Benzo(b)fluoranthene

COPC Lacking Toxicity Information	Chemical Surrogate Used in HHRA
Benzo(e)pyrene	Pyrene
Benzo(g,h,i)perylene	
Perylene	
Carbazole	Diphenylamine
Dibenzothiophene	Fluorene
di-n-Octylphthalate	Bis(2-ethylhexyl)phthalate
Endosulfan sulfate	Endosulfan
Endrin aldehyde	Endrin
Endrin ketone	
para-Isopropyl toluene	Cumene
sec-Butylbenzene	
tert-Butylbenzene	

C7.3 CHROMIUM

Valence-state specific analytical data are not available for chromium in soil at IR Site 12. For purposes of assessing toxicity from exposure to chromium, all chromium results were assumed to consist of a one-to-six ratio of hexavalent-to-trivalent chromium, and adjustment to the IUR for chromium was made following the approach recommended in EPA (2009c). Section C10.6 discusses the uncertainties associated with this approach for estimating health risks from chromium.

C7.4 DIOXINS, FURANS, AND DIOXIN-LIKE POLYCHLORINATED BIPHENYLS

Analytical results for dioxin, furan, and dioxin-like PCB congeners were used to calculate sample-specific toxicity equivalency quotient (TEQ) concentrations. Of the 2,740 soil samples analyzed for Arcolors, nine of these samples were analyzed for PCB congeners. PCB congener analysis was completed soil samples collected at EU 17, AOI 1201/1203/1220, AOI Halyburton/Bigelow Court, and AOI Mariner Drive. The TEQ concentrations for samples analyzed for PCB congeners were calculated by multiplying detected and nondetected concentrations for individual dioxin and furan congeners by their respective TEFs, based on toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), and summing the TEF-adjusted concentrations. One-half of the laboratory reporting limit was used to represent concentrations of nondetected congeners; this is a conservative approach that may overestimate actual concentrations. The sum of the TEF-adjusted dioxin, furan, and dioxin-like PCB congeners is represented as "2,3,7,8-TCDD TEQ." TEFs were based on Van den Berg and others (2006), and are shown below. The EPC for 2,3,7,8-TCDD TEQ was derived using the calculated sample-specific 2,3,7,8-TCDD TEQ concentrations. The toxicity criterion for 2,3,7,8-TCDD, the specific dioxin congener on which the TEFs for dioxin, furan, and dioxin-like PCBs are based, were used to evaluate cancer risks and noncancer hazards associated with exposure to 2,3,7,8-TCDD TEQ in soil.

Compound	TEF (Van den Berg and others 2006)
Polychlorinated Dibenzo-p-Dioxins	
2,3,7,8-Tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD)	1
1,2,3,4,6,7,8-Heptachlorinated dibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	0.01
1,2,3,4,7,8-Hexachlorinated dibenzo-p-dioxin (1,2,3,4,7,8-HxCDD)	0.1
1,2,3,6,7,8-Hexachlorinated dibenzo-p-dioxin (1,2,3,6,7,8-HxCDD)	0.1
1,2,3,7,8,9-Hexachlorinated dibenzo-p-dioxin (1,2,3,7,8,9-HxCDD)	0.1
1,2,3,7,8-Pentachlorinated dibenzo-p-dioxin (1,2,3,7,8-PeCDD)	1
Octachlorinated dibenzo-p-dioxin (OCDD)	0.0003
Polychlorinated Dibenzofurans	
2,3,7,8-Tetrachlorinated dibenzofuran (2,3,7,8-TCDF)	0.1
1,2,3,4,6,7,8-Heptachlorinated dibenzofuran (1,2,3,4,6,7,8-HpCDF)	0.01
1,2,3,4,7,8,9-Heptachlorinated dibenzofuran (1,2,3,4,7,8,9-HpCDF)	0.01
1,2,3,4,7,8-Hexachlorinated dibenzofuran (1,2,3,4,7,8-HxCDF)	0.1
1,2,3,6,7,8-Hexachlorinated dibenzofuran (1,2,3,6,7,8-HxCDF)	0.1
1,2,3,7,8,9-Hexachlorinated dibenzofuran (1,2,3,7,8,9-HxCDF)	0.1
1,2,3,7,8-Pentachlorinated dibenzofuran (1,2,3,7,8-PeCDF)	0.03
2,3,4,6,7,8-Hexachlorinated dibenzofuran (2,3,4,6,7,8-HxCDF)	0.1
2,3,4,7,8-Pentachlorinated dibenzofuran (2,3,4,7,8-PeCDF)	0.3
Octachlorinated dibenzofuran (OCDF)	0.0003
Dioxin-Like Polychlorinated Biphenyls	
PCB-77	0.0001
PCB-81	0.0003
PCB-105	0.00003
PCB-114	0.00003
PCB-118	0.00003
PCB-123	0.00003
PCB-126	0.1
PCB-156	0.00003
PCB-157	0.00003
PCB-167	0.00003
PCB-169	0.03
PCB-189	0.00003

C7.5 NONDIOXIN-LIKE POLYCHLORINATED BIPHENYLS

For nondioxin-like PCB congeners (those PCB congeners that are not associated with dioxin-like toxicity), calculation of the EPC involved summing detected and nondetected concentrations for nondioxin-like PCB congeners at each sample location. As stated in Section C7.4, PCB congener analysis was completed for a total of nine soil samples at EU 17, AOI 1201/1203/1220, AOI Halyburton/Bigelow Court, and AOI Mariner Drive. Nondioxin-like PCB congeners were detected only at AOI Halyburton/Bigelow Court. Similar to the approach used for dioxin-like PCB congeners, one-half of the laboratory reporting limit was used to represent concentrations of nondetected congeners; this is a conservative approach that may overestimate actual concentrations. The sum of nondioxin-like PCB congeners is represented as "PCB (total)." The EPC for PCB (total) was derived using the calculated sample-specific PCB (total) concentrations. The toxicity criteria for high health risk and environmentally persistent PCBs and Aroclor-1254 were used to evaluate cancer risks and noncancer hazards, respectively, associated with exposure to PCB (total).

As discussed in Section C7.4, the nine soil samples that were analyzed for PCB congeners were also analyzed for Aroclors. The HHRA evaluated risks and hazards for both Aroclors and total PCBs (based on nondioxin-like PCB congener results) for samples with both Aroclor and PCB congener analysis. Although this approach results in some double-counting of risks and hazards for PCBs, it is conservative because none of the samples for which PCB congener analysis was completed was analyzed for all 209 PCB congeners. In addition, only a small number of soil samples were analyzed for PCB congeners (a total of nine samples), while a large number of soil samples were analyzed for Aroclors (total of 2,740 samples). Therefore, the likelihood that this approach results is an overestimate of risks for PCBs is minimal.

C7.6 LEAD

Although toxicity criteria (SF and IUR) are available for lead from OEHHA (2012), risks from exposure to lead were characterized by comparison of EPCs for lead with Cal/EPA (2009) and EPA (1994, 2011a) screening concentrations for lead (see Section C8.3).

C7.7 MUTAGENS

EPA guidance regarding evaluation of risk from early-life exposure to carcinogens recommends a different approach to estimating chemical intake for carcinogenic chemicals with a mutagenic mode of action (EPA 2005). This approach for evaluating mutagens was not incorporated in the RI work plan or risk estimates for IR Site 12. Uncertainties associated with not evaluating the mutagenic mode of action in the HHRA are discussed in the uncertainty analysis (see Section C10.9).

C8.0 RISK CHARACTERIZATION

The risk characterization involves combining EPCs, daily intakes, and toxicity criteria to calculate the potential for health risks associated with exposure to COPCs. Cancer risks and noncancer health hazards are characterized separately. Based on the HHRA methodology,

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
17	Cancer risks, noncancer health hazards, and lead	Section 2.5.1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Appendix C, Section C8.0 through C8.3.

like PCB congeners were detected only at AOI Halyburton/Bigelow Court. Similar to the approach used for dioxin-like PCB congeners, one-half of the laboratory reporting limit was used to represent concentrations of nondetected congeners; this is a conservative approach that may overestimate actual concentrations. The sum of nondioxin-like PCB congeners is represented as "PCB (total)." The EPC for PCB (total) was derived using the calculated sample-specific PCB (total) concentrations. The toxicity criteria for high health risk and environmentally persistent PCBs and Aroclor-1254 were used to evaluate cancer risks and noncancer hazards, respectively, associated with exposure to PCB (total).

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health risks for IR Site 12 are estimated using an RBC approach, rather than the traditional, forward risk calculation approach (Tetra Tech 2009). This streamlined approach uses the ratio of EPCs to exposure scenario-specific RBCs to estimate health risks. The resulting risk estimates are numerically equivalent to the estimates obtained using the EPA (1989) "forward calculation methodology."

For each exposure scenario, RBCs were calculated for carcinogenic COPCs based on a target cancer risk of 1×10^{-6}, and for noncarcinogenic COPCs based on a target noncancer HI of 1. For COPCs associated with both cancer and noncancer effects, both cancer-based and noncancer-based RBCs were calculated. The RBC equations are shown in Tables C-11A, C-11B, and C-12. The RBC equations incorporate the scenario- and pathway-specific exposure assumptions identified in Tables C-2A through C-2C and chemical-specific toxicity criteria in Tables C-3 through C-10. As discussed in Section C7.0, two sets of cancer risks were calculated: one following the EPA toxicity criteria hierarchy, and the other following the Cal/EPA toxicity criteria hierarchy. Therefore, two sets of RBCs were developed, consistent with these two sets of toxicity criteria.

Tables C-13 through C-18 present the pathway-specific and combined, multi-pathway RBCs for IR Site 12 based on EPA toxicity criteria. Tables C-19 through C-24 present the pathway-specific and combined, multi-pathway RBCs for IR Site 12 based on Cal/EPA toxicity criteria.

For exposure scenarios for which both an adult and child receptor are evaluated (that is, residential and recreational), the estimated cancer risk is based on the sum of the risk estimated for the adult receptor plus the estimated risk for the child receptor. Hence, for the residential and recreational receptor, the RBCs for carcinogenic effects are based on combined child and adult exposures.

For the residential scenario, which includes evaluation of child and adult residents, the noncancer HI is based on the HI estimated for the child resident. Intake by children of soil, groundwater, and air per unit body mass is higher; thus, noncancer HIs for a child resident are always higher than noncancer HIs for an adult resident. Therefore, residential RBCs for noncarcinogenic effects are based on the child resident. This approach was also used to estimate noncancer HIs for the recreational scenario, which includes evaluation of child and adult recreational users.

The RBCs were used to calculate cancer risks and noncancer hazards for each receptor and COPC at each exposure area. Based on agreements regarding the HHRA methodology for IR Site 12, three types of risks were estimated: total, site, and ambient. Using each set of RBCs (EPA- and Cal/EPA-based), these risks were calculated as follows:

- Total risk – Total risk is the risk associated with exposure to all chemicals detected, regardless of whether the chemical is present at ambient concentrations. Specifically, all chemicals listed in the Table 2 series of Attachments C1 through C25 were included in the total risk estimates, regardless of ambient concentrations. The EPCs in the Table 3 series of Attachments C1 through C25 were used in the total risk calculations.

- Site risk – Site risk is calculated in the same manner as total risk, except inorganic COPCs that do not exceed ambient concentrations are excluded from the site risk estimates. Appendix B provides a statistical comparison of site concentrations with ambient concentrations for inorganic COPCs detected at each exposure area. The comparison is done separately for each soil and groundwater data set. The Table 2 series of Attachments C1 through C25 summarize the results of the ambient evaluation, and indicate whether the site concentrations of each inorganic COPC exceed ambient concentrations. Those inorganic COPCs for which "No" is indicated in the Table 2 series were excluded from the estimates of site risk, while those for which "Yes" is indicated in the Table 2 series were included in the estimates of site risk. The EPCs in the Table 3 series of Attachments C1 through C25 were used in the site risk calculations.

- Ambient risk – Ambient risk represents the risk associated with ambient concentrations of metals in soil and groundwater. Ambient risk was calculated only for those inorganic chemicals for which ambient data are available, using the ambient EPCs provided in the Table 3 series of Attachment C26.

The following sections describe how the RBCs for IR Site 12 were used to calculate health risks.

C8.1 CHARACTERIZATION OF CANCER RISKS

The cancer risk estimate associated with exposure to a carcinogenic COPC is calculated as follows:

$$Cancer\ risk = (EPC/RBC_c) \times 10^{-6}$$

where:

EPC = Exposure point concentration in mg/kg for soil, microgram per liter (µg/L) for groundwater, microgram per cubic meter (µg/m^3) for soil gas

RBC_c = Risk-based concentration for carcinogens in mg/kg for soil, µg/L for groundwater, µg/m^3 for soil gas

Individuals may be exposed to more than one COPC at an exposure area. The cancer risks for individual COPCs are summed by exposure pathway to calculate the cumulative cancer risk for the exposure pathway, using the following equation. Pathway cancer risks are then summed to calculate a cumulative, multi-pathway cancer risk.

$$Cumulative\ risk = 10\text{-}6 \times \{EPC1/RBCc1 + EPC2/RBCc2 + \ldots EPCn/RBCcn\}$$

where:

Cumulative risk	=	Cumulative cancer risk from exposure to all carcinogenic COPCs (unitless)
EPC	=	Exposure point concentration in mg/kg for soil, µg/L for groundwater, $\mu g/m^3$ for soil gas
RBC_c	=	Risk-based concentration for carcinogens in mg/kg for soil, µg/L for groundwater, $\mu g/m^3$ for soil gas

EPA guidance on exposure levels considered protective of human health is presented to aid in the interpretation of the results of the risk assessment. In the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), EPA defined general remedial action goals for sites on the National Priorities List (Title 40 of the *Code of Federal Regulations*, Section 300.430). The goals include a range for residual cancer risk, which is "an excess upper-bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6}," or 1 in 10,000 (1E-04) to 1 in 1,000,000 (1E-06).

The goals set out in the NCP are applied once a decision to remediate a site has been made. A subsequent EPA directive provides additional guidance on the role of the HHRA in supporting risk management decisions and, in particular, evaluating whether a response action is necessary (EPA 1991). Specifically, the guidance states, "Where cumulative carcinogenic risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10^{-4}, and the noncancer hazard quotient (HQ) is less than 1, action generally is not warranted unless there are adverse environmental impacts." This HHRA refers to the cancer risk range between 1E-06 and 1E-04 as the "risk management range." The lower end of the range, 1E-06, is referred to as the "point of departure." Risks that do not exceed the point of departure are considered negligible, and do not require action.

C8.2 CHARACTERIZATION OF NONCANCER HAZARDS

The potential for receptors to develop adverse health effects from inhalation exposure to COPCs that are not classified as carcinogens and for carcinogens known to cause adverse health effects other than cancer is calculated as follows:

$$Hazard\ Quotient\ (HQ) = EPC/RBCnc$$

where:

EPC	=	Exposure point concentration in soil (mg/kg)
RBC_{nc}	=	Risk-based concentration in mg/kg for soil, µg/L for groundwater, $\mu g/m^3$ for soil gas

The HQs for individual COPCs are summed by exposure pathway to evaluate the cumulative potential for noncancer effects from exposure to multiple COPCs, yielding an HI as shown below. Pathway HIs are then summed to calculate a cumulative, multi-pathway HI.

Hazard Index (HI) = EPC1/RBCnc1 + EPC2/RBCnc2 + . . .+ EPCn/RBCncn

where:

HI	=	Cumulative noncancer hazard index from exposure to all noncarcinogenic COPCs (unitless)
EPC	=	Exposure point concentration in mg/kg for soil, µg/L for groundwater, $\mu g/m^3$ for soil gas
RBC_{nc}	=	Risk-based concentration in mg/kg for soil, µg/L for groundwater, $\mu g/m^3$ for soil gas

An HI of less than 1 indicates that adverse noncancer health effects are not expected. If the total HI exceeds 1, further evaluation in the form of a segregation of the HI via a target organ analysis may be performed to assess whether the noncancer HIs are a concern (EPA 1989). Target organ HIs greater than 1 may indicate a potential adverse effect.

C8.3 CHARACTERIZATION OF RISKS FROM EXPOSURE TO LEAD

The HHRA evaluated the potential for health effects from exposure to lead in surface and subsurface soil using two methods. The first method involved comparing EPCs for lead with the DTSC-recommended screening concentration of 80 mg/kg for residential exposure and 320 mg/kg for industrial exposure (Cal/EPA 2009). The second method involved comparing EPCs for lead with the EPA (1994, 2011a) residential action level of 400 mg/kg and the EPA (2011a) industrial screening level of 800 mg/kg. These screening concentrations are based on a biomarker (blood lead levels); for this reason, the risks from exposure to lead were characterized separately, and were not included in cumulative risk calculations.

The Cal/EPA screening values for lead in soil represent concentrations that could result in up to a 1 microgram per deciliter (µg/dL) increase in blood lead, regardless of background exposures. The EPA screening values for lead in soil represent concentrations which, when combined with an assumed background lead exposure from food, dust, air, and water, would result in a predicted blood lead level that does not exceed 10 µg/dL. The 10 µg/dL blood lead level is based on analyses conducted by the Centers for Disease Control and Prevention and EPA that associated blood lead levels of 10 µg/dL and higher with health effects in children (EPA 1994). Both the Cal/EPA and EPA residential screening values are protective of a child exposed to lead-contaminated soil in a residential setting, and the industrial screening values are protective of the fetus of an adult worker exposed to lead-contaminated soil in a commercial/industrial setting.

The HHRA did not evaluate the potential for health effects from exposure to lead in groundwater. Exposure to groundwater at IR Site 12 is limited to the future construction worker scenario; the only potential exposure pathway for groundwater for the construction worker is dermal contact with groundwater during soil excavation or trenching. The EPA and State of California have established an action level for lead in groundwater of 15 µg/L based on residential use of groundwater as a drinking water source. This action level is not appropriate for evaluating dermal exposure to groundwater during construction activities.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
18	risks for each EU, AOI	Section 2.5.1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Appendix C, Section C9.0 through C9.26.2.

C9.0 RESULTS OF THE HUMAN HEALTH RISK ASSESSMENT

This section presents the estimated cancer risks and noncancer HIs for each of the EUs and AOIs at IR Site 12. For this HHRA, a COPC is identified as a chemical of concern (COC) when the COPC-specific risk exceeds 1×10^{-6} or the COPC-specific HI exceeds 1. In addition, if a COPC contributes to a site-related segregated HI that exceeds 1 but the COPC-specific HI itself does not exceed 1, the COPC is identified as a COC if the COPC-specific HI contributes to 50 percent or more of the site-related HI. Identification of COCs was based on site cancer risk and HI results, as discussed below.

Risks were estimated for the following exposure scenarios:

- Current resident – Exposure from direct contact with unpaved surface soil and subsurface vapor intrusion to indoor air. Direct contact with soil comprises three exposure pathways: incidental ingestion, dermal contact, and inhalation of chemicals released from soil to outdoor air from wind erosion or volatilization.
- Future resident – Exposure from direct contact with surface soil, direct contact with subsurface soil, and subsurface vapor intrusion to indoor air.
- Future industrial worker – Exposure from direct contact with surface soil, direct contact with subsurface soil, and subsurface vapor intrusion to indoor air.
- Future recreational user – Exposure from direct contact with surface soil and subsurface soil.
- Future construction worker – Exposure from direct contact with subsurface soil, dermal contact with groundwater during trenching, and inhalation of groundwater vapors during trenching.

Risks from groundwater exposure were evaluated for five groundwater source areas and one nonsource area, rather than on an EU or AOI basis. Results of the groundwater risk evaluation were assigned to EUs on the basis of location and areal extent of each groundwater source area with respect to the EU boundaries. Specifically, the estimated risks for groundwater were assumed to apply to each EU that is underlain by the areal extent of the groundwater source area. For example, the areal extent of GW-S1 encompasses EUs 2, 3, and 5; therefore the groundwater risk estimates for GW-S1 were applied to EUs 2, 3, and 5. Some EUs are encompassed by more than one groundwater source area (for example, groundwater source areas GW-S3 and GW-S4 both extend into EU 15). For these cases, multiple sets of multimedia risks were estimated (soil plus GW-S3 and soil plus GW-S4) and the groundwater source area associated with the highest risk results was summarized in Tables C-25 through C-50. Likewise, the groundwater source area associated with the highest risk results was used to identify COCs for groundwater for each EU. EUs associated with the nonsource-based groundwater exposure area GW-NS1 were identified on the basis of monitoring wells; that is, only those EUs with monitoring wells within GW-NS1 were considered to encompass GW-NS1.

As detailed in Section C8.0, for both soil and groundwater exposure, the HHRA estimated total, site, and ambient risks. These three types of risk estimates were calculated as follows:

- Total Risk: Total risks are based on all detected chemicals at each EU and AOI, regardless of ambient concentrations.

- Site Risk: Site risks exclude those metals for which site concentrations do not exceed ambient concentrations for NAVSTA TI (all detected organic chemicals and metals for which site concentrations exceed ambient concentrations are included in the estimates of site risk). Appendix B of the RI report provides the statistical comparison to background for soil and groundwater, and identifies for each EU and AOI those metals that were found to exceed ambient concentrations.

- Ambient Risk: Ambient risks were estimated based on ambient concentrations of metals in soil and groundwater measured at NAVSTA TI. The ambient risk evaluation was completed to understand the health risks associated with naturally occurring concentrations of metals at NAVSTA TI. A NAVSTA TI ambient concentration is also available for 2,3,7,8-TCDD TEQ, an organic chemical associated with anthropogenic activities that is also present at ambient concentrations; however, the evaluation of ambient risks was limited to naturally occurring chemicals (metals) (SulTech 2006; Tetra Tech 2009). Based on the HHRA methodology established for IR Site 12, site risks were calculated by excluding metals for which concentrations do not exceed ambient levels; all detected organic chemicals were included in the calculation of site risk (Tetra Tech 2009).

For evaluation of vapor intrusion exposure, estimates are the same for total and site risks because ambient or background concentrations are not associated with chemicals detected in soil gas. All chemicals detected in soil gas were included in vapor intrusion risk estimates.

As discussed in Section C8.0, for each of these three types of risks, the HHRA estimated risks based on both the federal EPA toxicity criteria hierarchy (referred to hereinafter as EPA criteria) and the Cal/EPA toxicity criteria hierarchy (referred to hereinafter as Cal/EPA criteria). EPA (1989) guidance for HHRAs indicates that risk and HI results should be rounded to one significant figure. To aid in review of calculations, the risk calculations provided in Attachments C1 through C26 for each pathway of exposure are presented with two significant figures. The summed, multi-pathway risk estimates for each chemical and the summed, multi-chemical risks for each exposure area are rounded to one significant figure.

Detailed calculations for total and site risks and HIs are presented in Attachments C1 through C25; calculations for ambient risks are presented in Attachment C26. Risk calculations based on EPA criteria are presented in the Table 4 series. Risk calculations based on Cal/EPA criteria are presented in the Table 5 series. The Tables 6 through 8 series of Attachments C1 through C26 summarize the risk results for each exposure area. Also included in Attachments C1 through C26 is the Table 9 series of tables, which shows the segregated HI results for each receptor and sampled medium. Segregated HIs are provided for each applicable target organ, and the highest (maximum) segregated HI calculated for each receptor is shown at the bottom of the table. Segregated HIs were calculated for each individual exposure medium (for example, soil), and for combined exposure media (for example, soil and soil gas).

The total and site risks and HIs presented in Attachments C1 through C25 are summarized in Tables C-25 through C-49 and are discussed below in Sections C9.1 through C9.25. Ambient risks for soil and groundwater are summarized in Table C-50 and are discussed in Section C9.26. Tables C-25 through C-50 include an "A," "B," and "C" series; for example, Table C-25 includes Tables C-25A, C-25B, and C-25C. The "A" series of tables provides summed risks for each exposure pathway evaluated (risks for all COPCs are summed by exposure pathway). The "B" series of tables provides summed risks for each exposure medium evaluated (risks for all exposure pathways are summed by exposure medium). The "C" series of tables provides summed risks for each exposure scenario evaluated (risks for all exposure media are summed by scenario) for each receptor. For each exposure area (EU and AOI), total risk results are included in these summary tables and in Attachments C1 through C25 for comparative purposes. Total risk results are not used to characterize risks for IR Site 12 because these risk estimates include ambient concentrations of metals. The contribution of ambient levels of metals at NAVSTA TI to overall risks at IR Site 12 is discussed further in Section C10.2.

In the discussion of risk results below, estimated cumulative cancer risks that exceed the point of departure of 1E-06 and HIs that exceed the threshold of 1 are shown in **boldface**. Likewise, chemicals identified as COCs for each EU and AOI are shown in **boldface**. COCs are not identified for the ambient risk evaluation. Summary tables are provided within the text for each exposure area to facilitate discussion of risk results. The summary tables show the cumulative site cancer risk and noncancer HI results for each exposure medium evaluated, identify COCs for each exposure medium, summarize the chemical-specific risk and HI results for chemicals identified as COCs, and show the percentage of the chemical-specific risk or HI for each COC to the cumulative risk or hazard (referred to in the tables as the "percent of cumulative"). For carcinogenic COCs, the percent of cumulative was calculated by dividing the chemical-specific cancer risk by the cumulative risk for the sample medium for the COC. for noncarcinogenic COCs, the percent of cumulative is similarly calculated by dividing the chemical-specific noncancer HI by the cumulative HI for the sample medium for the COC. For cases where the cumulative site HI for a sample medium exceeds 1, the highest segregated HI is also provided and is indicated within parentheses.

The risk characterization for IR Site 12 focuses on the results and COCs based on the evaluation of site risks. The calculation of total risk, which includes risks from metals present at ambient concentrations, is provided in the HHRA for information only and can be used as needed to support risk management decisions for each EU and AOI.

As stated in Section C5.0, while cancer risks and noncancer hazards were calculated for individual Aroclors, the cancer risks were summed and presented as cancer risks for total Aroclors, and the noncancer hazards were summed and presented as noncancer hazards for total Aroclors. Similarly, the cancer risks for the seven individual carcinogenic PAHs identified in Section C5.0 were summed and presented as BAP (EQ). This approach was used because Aroclors have similar mechanisms of toxicity and determination of whether Arcolors are COCs should be based on cumulative risks and hazards for all Aroclors. Likewise, the carcinogenic PAHs have similar mechanisms of toxicity (equivalent to BAP) and determination of whether these PAHs are COCs should be based on cumulative risks for these PAHs. The summations for

total Aroclors and BAP (EQ) are shown at the bottom of each of the risk calculation tables provided in Attachments C1 through C25.

As discussed in Section C8.3, the potential for health effects from exposure to lead in soil was evaluated by comparing EPCs with Cal/EPA and EPA health-based screening concentrations for lead. These comparisons are shown in Table C-51 and are discussed in the sections below.

An additional evaluation of risks and hazards associated with ambient concentrations of metals in soil and groundwater at NAVSTA TI is included in the HHRA. Calculations of ambient risks and hazards are provided in Attachment C26. COCs were not identified for the ambient risk evaluation. Results of the ambient risk evaluation are further discussed in Section C10.2.

C9.1 EXPOSURE UNIT 1

Risk estimates for EU 1 are summarized in Tables C-25A through C-25C. Detailed risk calculations for EU 1 are provided in Attachment C1.

C9.1.1 Soil

Cumulative site cancer risks for exposure to soil at EU 1 are within the EPA risk management range for all scenarios. Site cancer risks range from **4E-06** to **2E-05** based on EPA criteria and from **8E-06** to **1E-04** based on Cal/EPA criteria.

Arsenic, BAP (EQ), and chromium are soil COCs based on cancer risk for both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 1

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	Arsenic	2E-05	2E-05	86%	1E-04	1E-04	97%
		BAP (EQ)		2E-06	8%		3E-06	2%
Future Resident	Surface	Arsenic	2E-05	2E-05	86%	1E-04	1E-04	97%
		BAP (EQ)		2E-06	8%		3E-06	2%
	Subsurface	Arsenic	2E-05	2E-05	88%	1E-04	1E-04	98%
Future Commercial/ Industrial Worker	Surface	Arsenic	6E-06	5E-06	82%	4E-05	3E-05	96%
	Subsurface	Arsenic	7E-06	6E-06	85%	4E-05	4E-05	97%
Future Recreational User	Surface	Arsenic	9E-06	8E-06	85%	5E-05	5E-05	97%
	Subsurface	Arsenic	9E-06	8E-06	87%	5E-05	5E-05	97%
Future Construction Worker	Subsurface	Arsenic	4E-06	Not a COC	--	8E-06	5E-06	65%
		Chromium		2E-06	59%		2E-06	27%

With the exception of the construction worker scenario, cumulative site HIs do not exceed the threshold of 1 for any scenario. For the construction worker scenario, the cumulative site HI is

2 for exposure to subsurface soil. However, the highest segregated HI for this scenario is 1, which does not exceed the noncancer threshold. No COCs were identified for soil based on noncancer hazards.

C9.1.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompass EU 1. Therefore, exposure pathways for groundwater are incomplete for this EU and risks were not quantified.

C9.1.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for EU 1 are less than the EPA point of departure of 1E-06 for these scenarios. Likewise, cumulative noncancer HIs are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.1.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 1.

For the residential and commercial/industrial scenarios, the cumulative, multimedia risks are essentially equivalent to the risks discussed above for soil exposure because the risks associated with vapor intrusion exposure are negligible compared with those for soil. Multimedia risks were not estimated for the recreational and construction worker scenarios because soil was the only exposure medium identified at EU 1 for these scenarios.

C9.1.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 1 are below all screening criteria for lead.

C9.2 EXPOSURE UNIT 2

Risk estimates for EU 2 are summarized in Tables C-26A through C-26C. Detailed risk calculations for EU 2 are provided in Attachment C2.

C9.2.1 Soil

Cumulative site cancer risks for exposure to soil at EU 2 are within the EPA risk management range for all scenarios. Site cancer risks range from **3E-06** to **2E-05** based on EPA criteria and from **6E-06** to **1E-04** based on Cal/EPA criteria.

Arsenic, BAP (EQ), and chromium are soil COCs based on cancer risk for both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 2

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	Arsenic	2E-05	2E-05	81%	1E-04	1E-04	96%
		BAP (EQ)		2E-06	10%		3E-06	3%
Future Resident	Surface	Arsenic	2E-05	2E-05	81%	1E-04	1E-04	96%
		BAP (EQ)		2E-06	10%		3E-06	3%
	Subsurface	Arsenic	2E-05	2E-05	84%	1E-04	1E-04	97%
		BAP (EQ)		2E-06	11%		2E-06	2%
Future Commercial/ Industrial Worker	Surface	Arsenic	6E-06	5E-06	77%	3E-05	3E-05	95%
	Subsurface	Arsenic	6E-06	5E-06	80%	3E-05	3E-05	96%
Future Recreational User	Surface	Arsenic	8E-06	6E-06	80%	4E-05	4E-05	95%
	Subsurface	Arsenic	8E-06	7E-06	82%	4E-05	4E-05	96%
Future Construction Worker	Subsurface	Arsenic	3E-06	Not a COC	--	6E-06	4E-06	67%
		Chromium		2E-06	58%		2E-06	26%

With the exception of the future residential scenario for exposure to subsurface soil, cumulative site HIs do not exceed the threshold of 1 for any scenario. For the future residential scenario, the cumulative HI is 2 for exposure to subsurface soil. The highest segregated HI is also 2. While no chemical-specific HIs exceed 1, **antimony** was identified as a soil COC on the basis of contributing greater than 50 percent (77 percent) of the highest segregated HI.

C9.2.2 Groundwater

Groundwater exposure at EU 2 was evaluated for the future construction worker; exposure was based on contact with groundwater source area GW-S1. The cumulative site cancer risk for groundwater is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **2E-06**, slightly above the point of departure. **Arsenic** contributes nearly all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. Arsenic is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – EU 2

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S1	Arsenic	3E-07	Not a COC	--	2E-06	2E-06	99%

The cumulative site HI for construction worker exposure to groundwater is equal to, but does not exceed, the threshold HI of 1.

C9.2.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative cancer risks for vapor intrusion were not estimated for EU 2 because none of the soil gas COPCs is associated with cancer effects. The cumulative noncancer site HIs for vapor intrusion are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.2.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 2.

For the residential and commercial/industrial scenarios, the cumulative, multimedia risks are essentially equivalent to the risks discussed above for soil exposure because the risks associated with vapor intrusion exposure are negligible compared with those for soil.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for **arsenic**, which is a COC in groundwater for this EU.

Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at EU 2 for this scenario.

C9.2.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 2 are below all screening criteria for lead.

C9.3 EXPOSURE UNIT 3

Risk estimates for EU 3 are summarized in Tables C-27A through C-27C. Detailed risk calculations for EU 3 are provided in Attachment C3.

C9.3.1 Soil

Cumulative site cancer risks for exposure to soil at EU 3 are within the EPA risk management range for all scenarios. Site cancer risks range from **3E-06** to **2E-05** based on EPA criteria and from **7E-06** to **1E-04** based on Cal/EPA criteria.

Arsenic, **BAP (EQ)**, and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 3

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	Arsenic	2E-05	2E-05	82%	1E-04	1E-04	96%
		BAP (EQ)		3E-06	12%		3E-06	3%
Future Resident	Surface	Arsenic	2E-05	2E-05	82%	1E-04	1E-04	96%
		BAP (EQ)		3E-06	12%		3E-06	3%
	Subsurface	Arsenic	2E-05	2E-05	84%	1E-04	1E-04	97%
		BAP (EQ)		2E-06	10%		3E-06	2%
Future Commercial/ Industrial Worker	Surface	Arsenic	7E-06	5E-06	77%	3E-05	3E-05	95%
	Subsurface	Arsenic	6E-06	5E-06	80%	3E-05	3E-05	96%
Future Recreational User	Surface	Arsenic	9E-06	7E-06	80%	5E-05	5E-05	96%
		BAP (EQ)		Not a COC	--		2E-06	3%
	Subsurface	Arsenic	9E-06	7E-06	82%	5E-05	5E-05	96%
Future Construction Worker	Subsurface	Arsenic	3E-06	Not a COC	--	7E-06	5E-06	66%
		Chromium		2E-06	58%		2E-06	27%

Cumulative site HIs for exposure to soil do not exceed the threshold of 1 for any scenario, and no COCs were identified for soil based on noncancer hazards.

C9.3.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompass EU 3. Therefore, exposure pathways for groundwater are incomplete for this EU and risks were not quantified.

C9.3.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for EU 3 are less than the EPA point of departure of 1E-06 for these scenarios. Likewise, cumulative noncancer HIs are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.3.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 3.

For the residential and commercial/industrial scenarios, the cumulative, multimedia site risks are within the risk management range and are essentially equivalent to the risks for soil exposure. Risks associated with vapor intrusion exposure are negligible compared with those for soil. Multimedia risks were not estimated for the recreational and construction worker scenarios because soil was the only exposure medium identified at EU 3 for these scenarios.

C9.3.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. The EPC for lead for unpaved surface soil at EU 3 exceeds the Cal/EPA residential screening criterion for lead. **Lead** is therefore a

surface soil COC for the current residential scenario. EPCs for lead are below the Cal/EPA industrial screening criterion for lead, and are below EPA residential and industrial criteria.

C9.4 EXPOSURE UNIT 4

Risk estimates for EU 4 are summarized in Tables C-28A through C-28C. Detailed risk calculations for EU 4 are provided in Attachment C4.

C9.4.1 Soil

Cumulative site cancer risks for exposure to soil at EU 4 are within the EPA risk management range for all scenarios. Site cancer risks range from **5E-06** to **2E-05** based on EPA criteria and from **8E-06** to **1E-04** based on Cal/EPA criteria.

Arsenic, **BAP (EQ)**, and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 4

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	Arsenic	2E-05	2E-05	85%	1E-04	1E-04	97%
		BAP (EQ)		2E-06	10%		2E-06	2%
Future Resident	Surface	Arsenic	2E-05	2E-05	85%	1E-04	1E-04	97%
		BAP (EQ)		2E-06	10%		2E-06	2%
	Subsurface	Arsenic	2E-05	2E-05	79%	1E-04	1E-04	95%
		BAP (EQ)		2E-06	9%		3E-06	2%
Future Commercial/ Industrial Worker	Surface	Arsenic	6E-06	5E-06	81%	3E-05	3E-05	96%
	Subsurface	Arsenic	7E-06	5E-06	74%	3E-05	3E-05	94%
Future Recreational User	Surface	Arsenic	8E-06	7E-06	84%	5E-05	4E-05	97%
	Subsurface	Arsenic	9E-06	7E-06	78%	5E-05	5E-05	95%
Future Construction Worker	Subsurface	Arsenic	5E-06	Not a COC	--	8E-06	5E-06	55%
		Chromium		3E-06	66%		3E-06	36%

The cumulative site HI exceeds the threshold of 1 for the current residential, future residential, and future construction worker scenarios. For the residential scenarios, the cumulative site HI is **2**; however, the highest segregated HI does not exceed 1. For the construction worker scenario, the cumulative site HI is **4** and the highest segregated HI is **2**. **Manganese** is a soil COC for the construction worker scenario, and contributes 47 percent of the overall noncancer hazard, as shown in the table below.

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – EU 4

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Future Construction Worker	Subsurface	Manganese	4 (2)	2	47%

Cumulative site HIs do not exceed 1 for the commercial/industrial or recreational scenarios.

C9.4.2 Groundwater

Groundwater exposure at EU 4 was evaluated for the future construction worker; exposure was based on contact with groundwater source area GW-S5. The cumulative site cancer risk for groundwater is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **2E-06**, slightly above the point of departure. **Arsenic** contributes nearly all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. Arsenic is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – EU 4

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S5	Arsenic	5E-07	Not a COC	--	2E-06	2E-06	95%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1.

C9.4.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for EU 4 are less than the EPA point of departure of 1E-06 for these scenarios. Likewise, cumulative noncancer HIs are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.4.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 4.

For the residential and commercial/industrial scenarios, the cumulative, multimedia site risks are within the risk management range and are essentially equivalent to the risks for soil exposure. Risks associated with vapor intrusion exposure are negligible compared with those for soil.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for **arsenic**, which is a COC in groundwater for this EU.

Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at EU 4 for this scenario.

C9.4.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 4 are below all screening criteria for lead.

C9.5 EXPOSURE UNIT 5

Risk estimates for EU 5 are summarized in Tables C-29A through C-29C. Detailed risk calculations for EU 5 are provided in Attachment C5.

C9.5.1 Soil

Cumulative site cancer risks for exposure to soil at EU 5 are within the EPA risk management range for all scenarios. Site cancer risks range from **4E-06** to **2E-05** based on EPA criteria and from **7E-06** to **1E-04** based on Cal/EPA criteria.

Arsenic, BAP (EQ), total Aroclors, and chromium are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 5

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	Arsenic	2E-05	2E-05	71%	1E-04	1E-04	94%
		BAP (EQ)		3E-06	11%		3E-06	3%
		Total Aroclors		2E-06	9%		2E-06	2%
Future Resident	Surface	Arsenic	2E-05	2E-05	71%	1E-04	1E-04	94%
		BAP (EQ)		3E-06	11%		3E-06	3%
		Total Aroclors		2E-06	10%		2E-06	2%
	Subsurface	Arsenic	2E-05	2E-05	71%	1E-04	1E-04	94%
		BAP (EQ)		3E-06	11%		3E-06	3%
		Total Aroclors		2E-06	9%		2E-06	2%
Future Commercial/ Industrial Worker	Surface	Arsenic	7E-06	4E-06	64%	3E-05	3E-05	92%
	Subsurface	Arsenic	7E-06	4E-06	64%	3E-05	3E-05	92%
Future Recreational User	Surface	Arsenic	9E-06	6E-06	68%	4E-05	4E-05	93%
	Subsurface	Arsenic	9E-06	6E-06	69%	4E-05	4E-05	94%
Future Construction Worker	Subsurface	Arsenic	4E-06	Not a COC	--	7E-06	4E-06	58%
		Chromium		2E-06	59%		2E-06	31%

The cumulative site HI exceeds the threshold of 1 for the current residential, future residential, and future construction worker scenarios. For the residential scenarios, the cumulative site HI is **2** for surface soil exposure; the highest segregated HI does not exceed 1. For future residential exposure to subsurface soil, the cumulative site HI is **4** and the highest segregated HI is **2**. For the future construction worker scenario, the cumulative site HI is **16** and the highest segregated HI is **14**. **Manganese** is a soil COC for both of these scenarios, as shown in the table below.

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – EU 5

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Future Resident	Subsurface	Manganese	4 (2)	2	45%
Future Construction Worker	Subsurface	Manganese	16 (14)	14	87%

Cumulative site HIs do not exceed 1 for the commercial/industrial or recreational scenarios.

C9.5.2 Groundwater

Groundwater exposure at EU 5 was evaluated for the future construction worker; exposure was evaluated for contact at three exposure areas: GW-NS1, GW-S1, and GW-S5. The cumulative site cancer risk ranges from 1E-07 (GW-NS1) to 5E-07 (GW-S5) based on EPA criteria and 9E-07 (GW-NS1) to **2E-06** (GW-S1 and GW-S5) based on Cal/EPA criteria. Risks are based on results for GW-S5 because risks are highest for this exposure area. The cumulative site cancer risk for groundwater at GW-S5 is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **2E-06**, slightly above the point of departure. **Arsenic** contributes nearly all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. **Arsenic** is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – EU 5

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S5	Arsenic	5E-07	Not a COC	--	2E-06	2E-06	96%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1.

C9.5.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for EU 5 are less than the EPA point of departure of 1E-06 for these scenarios. Likewise, cumulative noncancer HIs are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.5.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA also estimated cumulative risks across all exposure media for EU 5.

For the residential and commercial/industrial scenarios, the cumulative, multimedia site risks are within the risk management range and are essentially equivalent to the risks for soil exposure. Risks associated with vapor intrusion exposure are negligible compared with those for soil.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for **arsenic**, which is a COC in groundwater for this EU.

Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at EU 5 for this scenario.

C9.5.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 5 are below all screening criteria for lead.

C9.6 EXPOSURE UNIT 6

Risk estimates for EU 6 are summarized in Tables C-30A through C-30C. Detailed risk calculations for EU 6 are provided in Attachment C6.

C9.6.1 Soil

Cumulative site cancer risks for exposure to soil at EU 6 are within the EPA risk management range for all scenarios. Site cancer risks range from **4E-06** to **2E-05** based on EPA criteria and from **7E-06** to **1E-04** based on Cal/EPA criteria.

Arsenic, **BAP (EQ)**, and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 6

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	Arsenic	2E-05	2E-05	75%	1E-04	1E-04	94%
		BAP (EQ)		4E-06	17%		5E-06	5%
Future Resident	Surface	Arsenic	2E-05	2E-05	76%	1E-04	1E-04	94%
		BAP (EQ)		4E-06	16%		5E-06	4%
	Subsurface	Arsenic	2E-05	2E-05	78%	1E-04	1E-04	94%
		BAP (EQ)		3E-06	15%		5E-06	4%
Future Commercial/ Industrial Worker	Surface	Arsenic	6E-06	4E-06	70%	3E-05	3E-05	92%
		BAP (EQ)		Not a COC	--		2E-06	6%
	Subsurface	Arsenic	7E-06	5E-06	73%	3E-05	3E-05	92%
		BAP (EQ)		Not a COC	--		2E-06	6%
Future Recreational User	Surface	Arsenic	9E-06	6E-06	73%	4E-05	4E-05	93%
		BAP (EQ)		2E-06	--		2E-06	5%
	Subsurface	Arsenic	9E-06	7E-06	76%	5E-05	4E-05	93%
		BAP (EQ)		2E-06	--		2E-06	5%
Future Construction Worker	Subsurface	Arsenic	4E-06	Not a COC	--	7E-06	4E-06	58%
		Chromium		2E-06	60%		2E-06	30%

The cumulative site HI exceeds the threshold of 1 for the current residential, future residential, and future construction worker scenarios. For the residential scenarios, the cumulative site HI is **2** for surface soil and **3** for subsurface soil; however, the highest segregated HI does not exceed 1. For the construction worker scenario, the cumulative site HI is **5** and the highest segregated HI is **3**. **Manganese** is a soil COC for the construction worker scenario, as shown in the table below.

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – EU 6

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Future Construction Worker	Subsurface	Manganese	5 (3)	3	52%

Cumulative site HIs do not exceed 1 for the commercial/industrial or recreational scenarios.

C9.6.2 Groundwater

Groundwater exposure at EU 6 was evaluated for the future construction worker; exposure was evaluated for contact at four exposure areas: GW-NS1, GW-S1, GW-S2, and GW-S5. The cumulative site cancer risk ranges from 1E-07 (GW-NS1) to 6E-07 (GW-S2) based on EPA criteria and 9E-07 (GW-NS1) to **2E-06** (GW-S1, GW-S2, and GW-S5) based on Cal/EPA criteria. Risks are based on results for GW-S2 because risks are highest for this exposure area. The cumulative site cancer risk for groundwater at GW-S2 is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **2E-06**, slightly above the point of departure. **Arsenic** contributes nearly all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. **Arsenic** is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – EU 6

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S2	Arsenic	5E-07	Not a COC	--	2E-06	2E-06	95%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1 for all exposure areas.

C9.6.3 Vapor Intrusion

Soil gas data were not collected for EU 6 because volatile chemical sources were not identified for this EU. Therefore, the vapor intrusion exposure pathway is incomplete for this EU and risks were not quantified.

C9.6.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA also estimated cumulative risks across all exposure media for EU 6.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for **arsenic**, which is a COC in groundwater for this EU.

Multimedia risks were not estimated for the residential, commercial/industrial, and recreational scenarios because soil was the only exposure medium identified at EU 6 for these scenarios.

C9.6.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead for unpaved surface soil, all surface soil, and subsurface soil at EU 6 exceed the Cal/EPA residential screening criterion for lead. **Lead** is therefore a surface and subsurface soil COC for the current and future residential scenarios. EPCs for lead are below the Cal/EPA industrial screening criterion for lead, and are below EPA residential and industrial criteria.

C9.7 EXPOSURE UNIT 7

Risk estimates for EU 7 are summarized in Tables C-31A through C-31C. Detailed risk calculations for EU 7 are provided in Attachment C7.

C9.7.1 Soil

Cumulative site cancer risks for exposure to soil at EU 7 are within the EPA risk management range for all scenarios. Site cancer risks range from **3E-06** to **2E-05** based on EPA criteria and from **7E-06** to **1E-04** based on Cal/EPA criteria.

Arsenic, **BAP (EQ)**, and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. In addition, **chlordane** is a COC based on Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 7

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	Arsenic	2E-05	2E-05	73%	1E-04	1E-04	92%
		BAP (EQ)		3E-06	15%		4E-06	4%
		Chlordane		Not a COC	--		3E-06	2%
Future Resident	Surface	Arsenic	2E-05	2E-05	73%	1E-04	1E-04	92%
		BAP (EQ)		3E-06	15%		4E-06	4%
		Chlordane		Not a COC	--		3E-06	2%
	Subsurface	Arsenic	2E-05	2E-05	75%	1E-04	1E-04	93%
		BAP (EQ)		3E-06	13%		4E-06	3%
		Chlordane		Not a COC	--		3E-06	2%
Future Commercial/ Industrial Worker	Surface	Arsenic	7E-06	5E-06	67%	3E-05	3E-05	90%
		BAP (EQ)		Not a COC	--		2E-06	5%
	Subsurface	Arsenic	7E-06	5E-06	69%	3E-05	3E-05	91%
		BAP (EQ)		Not a COC	--		2E-06	4%
Future Recreational User	Surface	Arsenic	1E-05	7E-06	70%	5E-05	4E-05	91%
		BAP (EQ)		2E-06	17%		2E-06	4%
	Subsurface	Arsenic	9E-06	7E-06	73%	5E-05	4E-05	92%
		BAP (EQ)		Not a COC	--		2E-06	4%
Future Construction Worker	Subsurface	Arsenic	3E-06	Not a COC	--	7E-06	4E-06	63%
		Chromium		2E-06	56%		2E-06	26%

The cumulative site HI exceeds the threshold of 1 for the current residential, future residential, and future construction worker scenarios. For the residential scenarios, the cumulative site HI is **2**; however, the highest segregated HI does not exceed 1. For the construction worker scenario, the cumulative site HI is **3** and the highest segregated HI is **2**. **Manganese** is a soil COC for the construction worker scenario, as shown in the table below.

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – EU 7

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Future Construction Worker	Subsurface	Manganese	3 (2)	2	54%

Cumulative site HIs do not exceed 1 for the commercial/industrial or recreational scenarios.

C9.7.2 Groundwater

Groundwater exposure at EU 7 was evaluated for the future construction worker; exposure was evaluated for contact at two exposure areas: GW-NS1 and GW-S2. The cumulative site cancer risk ranges from 1E-07 (GW-NS1) to 6E-07 (GW-S2) based on EPA criteria and from 9E-07 (GW-NS1) to **2E-06** (GW-S2) based on Cal/EPA criteria. Risks are based on results for GW-S2 because risks are highest for this exposure area. The cumulative site cancer risk for groundwater at GW-S2 is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **2E-06**, slightly above the point of departure. **Arsenic** contributes nearly all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. Arsenic is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – EU 7

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S2	Arsenic	6E-07	Not a COC	--	2E-06	2E-06	81%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1.

C9.7.3 Vapor Intrusion

Soil gas data were not collected for EU 7 because volatile chemical sources were not identified for this EU. Therefore, the vapor intrusion exposure pathway is incomplete for this EU and risks were not quantified.

C9.7.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA also estimated cumulative risks across all exposure media for EU 7.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for **arsenic**, which is a COC in groundwater for this EU.

Multimedia risks were not estimated for the residential, commercial/industrial, and recreational scenarios because soil was the only exposure medium identified at EU 7 for these scenarios.

C9.7.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. The EPC for lead for subsurface soil at EU 7 exceeds the Cal/EPA residential screening criterion for lead. **Lead** is therefore a subsurface soil COC for the future residential scenario. EPCs for lead are below the Cal/EPA industrial screening criterion for lead, and are below EPA residential and industrial criteria.

C9.8 EXPOSURE UNIT 8

Risk estimates for EU 8 are summarized in Tables C-32A through C-32C. Detailed risk calculations for EU 8 are provided in Attachment C8.

C9.8.1 Soil

Cumulative site cancer risks for exposure to soil at EU 8 are within the EPA risk management range for all scenarios. Site cancer risks range from **1E-06** to **4E-06** based on EPA criteria and from **2E-06** to **6E-06** based on Cal/EPA criteria.

BAP (EQ) and **chromium** are COCs for soil. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below. COCs were not identified for the future commercial/industrial scenario and for recreational user exposure to subsurface soil.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 8

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	4E-06	2E-06	45%	6E-06	3E-06	59%
Future Resident	Surface	BAP (EQ)	4E-06	2E-06	45%	6E-06	3E-06	59%
	Subsurface	BAP (EQ)	4E-06	Not a COC	--	5E-06	3E-06	51%
Future Recreational User	Surface	BAP (EQ)	2E-06	Not a COC	--	3E-06	2E-06	63%
Future Construction Worker	Subsurface	Chromium	3E-06	2E-06	79%	3E-06	2E-06	77%

The cumulative site HI exceeds the threshold of 1 for the current residential, future residential, and future construction worker scenarios. For each of these scenarios, the cumulative site HI is **2**; however, the highest segregated HI does not exceed 1. Cumulative site HIs do not exceed 1 for the commercial/industrial or recreational scenarios.

C9.8.2 Groundwater

Groundwater exposure at EU 8 was evaluated for the future construction worker; exposure was based on contact with groundwater source area GW-S2. The cumulative site cancer risk for groundwater is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **2E-06**, slightly above the point of departure. **Arsenic** contributes nearly all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. Arsenic is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – EU 8

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S2	Arsenic	6E-07	Not a COC	--	2E-06	2E-06	81%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1.

C9.8.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative cancer risks for vapor intrusion were not estimated for EU 8 because none of the soil gas COPCs is associated with cancer effects. The

cumulative noncancer site HIs for vapor intrusion are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.8.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA also estimated cumulative risks across all exposure media for EU 8.

For the residential and commercial/industrial scenarios, the cumulative, multimedia site risks are within the risk management range and are equivalent to the risks for soil exposure because none of the soil gas COPCs is carcinogenic. Noncancer hazards associated with vapor intrusion exposure are negligible compared with those for soil.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for **arsenic**, which is a COC in groundwater for this EU.

Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at EU 8 for this scenario.

C9.8.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead for unpaved surface soil, all surface soil, and subsurface soil at EU 8 exceed the Cal/EPA residential screening criterion for lead. **Lead** is therefore a surface and subsurface soil COC for the current and future residential scenarios. EPCs for lead are below the Cal/EPA industrial screening criterion for lead, and are below EPA residential and industrial criteria.

C9.9 EXPOSURE UNIT 9

Risk estimates for EU 9 are summarized in Tables C-33A through C-33C. Detailed risk calculations for EU 9 are provided in Attachment C9.

C9.9.1 Soil

Cumulative site cancer risks for exposure to soil at EU 9 are within the EPA risk management range for all scenarios. Site cancer risks range from **4E-06** to **3E-05** based on both EPA and Cal/EPA criteria.

BAP (EQ), **total Aroclors**, and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 9

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	8E-06	5E-06	67%	1E-05	9E-06	77%
		Total Aroclors		2E-06	21%		2E-06	15%
Future Resident	Surface	BAP (EQ)	1E-05	5E-06	47%	1E-05	9E-06	59%
		Total Aroclors		5E-06	44%		5E-06	34%
	Subsurface	BAP (EQ)	3E-05	1E-05	46%	3E-05	2E-05	59%
		Total Aroclors		1E-05	49%		1E-05	37%
Future Commercial/ Industrial Worker	Surface	BAP (EQ)	4E-06	2E-06	49%	6E-06	3E-06	61%
		Total Aroclors		2E-06	46%		2E-06	35%
	Subsurface	BAP (EQ)	1E-05	5E-06	47%	1E-05	8E-06	59%
		Total Aroclors		5E-06	50%		5E-06	38%
Future Recreational User	Surface	BAP (EQ)	5E-06	3E-06	49%	7E-06	4E-06	61%
		Total Aroclors		2E-06	45%		2E-06	35%
	Subsurface	BAP (EQ)	1E-05	6E-06	47%	2E-05	9E-06	59%
		Total Aroclors		6E-06	49%		6E-06	38%
Future Construction Worker	Subsurface	Chromium	4E-06	2E-06	50%	4E-06	2E-06	44%

The cumulative site HI exceeds the threshold of 1 for all scenarios except the future commercial/industrial scenario (surface and subsurface soil) and the future recreational scenario (surface soil). However, the highest segregated HI exceeds 1 only for the future residential scenario (subsurface soil exposure only) and future construction worker scenario. For the residential subsurface soil exposure scenario, the cumulative site HI is **4** and the highest segregated HI is **2**. For the construction worker scenario, the cumulative site HI is **5** and the highest segregated HI is **3**. **Total Aroclors** is a soil COC for the residential scenario (subsurface soil), and **manganese** is a soil COC for the construction worker scenario, as shown in the table below.

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – EU 9

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Future Resident	Subsurface	Total Aroclors	4 (2)	3	58%
Future Construction Worker	Subsurface	Manganese	5 (3)	2	40%

Cumulative site HIs do not exceed 1 for the commercial/industrial scenario and recreational user exposure to surface soil.

C9.9.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompass EU 9. Therefore, exposure pathways for groundwater are incomplete for this EU and risks were not quantified.

C9.9.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative cancer risks for vapor intrusion were not estimated for EU 9 because none of the soil gas COPCs is associated with cancer effects. The

cumulative noncancer site HIs for vapor intrusion are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.9.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 9.

For the residential and commercial/industrial scenarios, the cumulative, multimedia site risks are within the risk management range and are essentially equivalent to the risks for soil exposure. Risks associated with vapor intrusion exposure are negligible compared with those for soil. Multimedia risks were not estimated for the recreational and construction worker scenarios because soil was the only exposure medium identified at EU 9 for these scenarios.

C9.9.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead for unpaved surface soil, all surface soil, and subsurface soil at EU 9 exceed the Cal/EPA residential screening criterion for lead. **Lead** is therefore a surface and subsurface soil COC for the current and future residential scenarios. EPCs for lead are below the Cal/EPA industrial screening criterion for lead, and are below EPA residential and industrial criteria.

C9.10 EXPOSURE UNIT 10

Risk estimates for EU 10 are summarized in Tables C-34A through C-34C. Detailed risk calculations for EU 10 are provided in Attachment C10.

C9.10.1 Soil

Cumulative site cancer risks for exposure to soil at EU 10 are within the EPA risk management range for all scenarios. Site cancer risks range from **3E-06** to **2E-05** based on EPA criteria and from **3E-06** to **1E-04** based on Cal/EPA criteria.

BAP (EQ), **arsenic**, and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 10

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	6E-06	4E-06	66%	7E-06	5E-06	69%
Future Resident	Surface	BAP (EQ)	7E-06	5E-06	68%	8E-06	6E-06	72%
	Subsurface	Arsenic	2E-05	2E-05	74%	1E-04	1E-04	94%
		BAP (EQ)		4E-06	16%		4E-06	4%
Future Commercial/ Industrial Worker	Surface	BAP (EQ)	3E-06	2E-06	73%	3E-06	2E-06	77%
	Subsurface	Arsenic	7E-06	5E-06	67%	3E-05	3E-05	92%
		BAP (EQ)		2E-06	22%		2E-06	5%
Future Recreational User	Surface	BAP (EQ)	3E-06	2E-06	72%	4E-06	3E-06	76%
	Subsurface	Arsenic	1E-05	7E-06	71%	5E-05	4E-05	93%
		BAP (EQ)		2E-06	19%		2E-06	5%
Future Construction Worker	Subsurface	Arsenic	3E-06	Not a COC	--	7E-06	4E-06	64%
		Chromium		2E-06	55%		2E-06	26%

Cumulative site HIs do not exceed the threshold of 1 for any scenario.

C9.10.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompass EU 10. Therefore, exposure pathways for groundwater are incomplete for this EU and risks were not quantified.

C9.10.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for EU 10 are less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative vapor intrusion cancer risk is 8E-08 for the commercial/industrial scenario and 1E-06 for the residential scenarios. The cumulative noncancer HIs are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.10.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 10.

For the residential and commercial/industrial scenarios, the cumulative, multimedia risks are essentially equivalent to the risks discussed above for soil exposure because the risks associated with vapor intrusion exposure are negligible compared with those for soil. Multimedia risks were not estimated for the recreational and construction worker scenarios because soil was the only exposure medium identified at EU 10 for these scenarios.

C9.10.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 10 are below all screening criteria for lead.

C9.11 EXPOSURE UNIT 11

Risk estimates for EU 11 are summarized in Tables C-35A through C-35C. Detailed risk calculations for EU 11 are provided in Attachment C11.

C9.11.1 Soil

Cumulative site cancer risks for exposure to soil at EU 11 are within the EPA risk management range for all scenarios. Site cancer risks range from **3E-06** to **2E-05** based on EPA criteria and from **7E-06** to **1E-04** based on Cal/EPA criteria.

Arsenic, BAP (EQ), and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 11

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	Arsenic	2E-05	2E-05	79%	1E-04	1E-04	95%
		BAP (EQ)		Not a COC	--		2E-06	2%
Future Resident	Surface	Arsenic	2E-05	2E-05	79%	1E-04	1E-04	95%
		BAP (EQ)		2E-06	7%		2E-06	2%
	Subsurface	Arsenic	2E-05	2E-05	81%	1E-04	1E-04	96%
		BAP (EQ)		Not a COC	--		2E-06	2%
Future Commercial/ Industrial Worker	Surface	Arsenic	6E-06	5E-06	74%	3E-05	3E-05	94%
	Subsurface	Arsenic	6E-06	5E-06	77%	3E-05	3E-05	95%
Future Recreational User	Surface	Arsenic	8E-06	6E-06	77%	4E-05	4E-05	95%
	Subsurface	Arsenic	9E-06	7E-06	80%	5E-05	4E-05	96%
Future Construction Worker	Subsurface	Arsenic	3E-06	Not a COC	--	7E-06	4E-06	66%
		Chromium		2E-06	57%		2E-06	26%

The cumulative site HI exceeds the threshold of 1 for the current residential, future residential, and future construction worker scenarios. For the residential scenarios, the cumulative site HI is **2**; however, the highest segregated HI does not exceed 1. For the construction worker scenario, the cumulative site HI is **3** and the highest segregated HI is **2**. **Manganese** is a soil COC for the construction worker scenario, as shown in the table below.

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – EU 11

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Future Construction Worker	Subsurface	Manganese	3 (2)	2	55%

Cumulative site HIs do not exceed 1 for the commercial/industrial or recreational scenarios.

C9.11.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompass EU 11. Therefore, exposure pathways for groundwater are incomplete for this EU and risks were not quantified.

C9.11.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for EU 11 are less than the EPA point of departure of 1E-06 for these scenarios. Likewise, cumulative noncancer HIs are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.11.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 11.

For the residential and commercial/industrial scenarios, the cumulative, multimedia risks are essentially equivalent to the risks discussed above for soil exposure because the risks associated with vapor intrusion exposure are negligible compared with those for soil. Multimedia risks were not estimated for the recreational and construction worker scenarios because soil was the only exposure medium identified at EU 11 for these scenarios.

C9.11.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 11 are below all screening criteria for lead.

C9.12 EXPOSURE UNIT 12

Risk estimates for EU 12 are summarized in Tables C-36A through C-36C. Detailed risk calculations for EU 12 are provided in Attachment C12.

C9.12.1 Soil

Cumulative site cancer risks for exposure to soil at EU 12 are within the EPA risk management range for all scenarios. Site cancer risks range from **3E-06** to **1E-05** based on EPA criteria and from **2E-06** to **9E-06** based on Cal/EPA criteria.

BAP (EQ) and chromium are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 12

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	1E-05	9E-06	76%	9E-06	7E-06	70%
Future Resident	Surface	BAP (EQ)	1E-05	9E-06	77%	9E-06	7E-06	70%
	Subsurface	BAP (EQ)	1E-05	9E-06	76%	9E-06	6E-06	69%
Future Commercial/ Industrial Worker	Surface	BAP (EQ)	5E-06	4E-06	80%	4E-06	3E-06	75%
	Subsurface	BAP (EQ)	4E-06	3E-06	80%	3E-06	2E-06	73%
Future Recreational User	Surface	BAP (EQ)	5E-06	4E-06	80%	4E-06	3E-06	74%
	Subsurface	BAP (EQ)	5E-06	4E-06	79%	4E-06	3E-06	72%
Future Construction Worker	Subsurface	Chromium	3E-06	2E-06	63%	2E-06	2E-06	67%

Cumulative site HIs do not exceed the threshold of 1 for any scenario.

C9.12.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompass EU 12. Therefore, exposure pathways for groundwater are incomplete for this EU and risks were not quantified.

C9.12.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. For the current and future residential scenarios, the cumulative vapor intrusion cancer risk is **2E-06** based on EPA criteria, and slightly exceeds the point of departure. **Chloroform** is a COC for soil gas based on EPA criteria, as shown in the table below. Chloroform is not a COC for vapor intrusion based on Cal/EPA criteria.

CHEMICALS OF CONCERN IN SOIL GAS BASED ON CANCER RISK – EU 12

Scenario	Soil Gas Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Building 1412 (12SG308)	Chloroform	2E-06	2E-06	100%	5E-07	Not a COC	--
Future Resident	Building 1412 (12SG308)	Chloroform	2E-06	2E-06	100%	5E-07	Not a COC	--

The cumulative vapor intrusion cancer risk is less than the EPA point of departure of 1E-06 for the residential scenarios based on Cal/EPA criteria, and for the future commercial/industrial scenario based on both EPA and Cal/EPA criteria.

Cumulative noncancer HIs for vapor intrusion are all less than the threshold HI of 1.

C9.12.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA also estimated cumulative risks across all exposure media for EU 12.

For the residential and commercial/industrial scenarios, the cumulative, multimedia risks are essentially equivalent to the risks for soil exposure. Although the cancer risk associated with vapor intrusion exposure exceeds the point of departure for the residential scenarios (EPA criteria only), the vapor intrusion cancer risk is approximately 5 times lower than the risk for soil exposure. Multimedia risks were not estimated for the recreational and construction worker scenarios because soil was the only exposure medium identified at EU 12 for these scenarios.

C9.12.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 12 are below all screening criteria for lead.

C9.13 EXPOSURE UNIT 13

Risk estimates for EU 13 are summarized in Tables C-37A through C-37C. Detailed risk calculations for EU 13 are provided in Attachment C13.

C9.13.1 Soil

Cumulative site cancer risks for exposure to soil at EU 13 are within the EPA risk management range for all scenarios. Site cancer risks range from **1E-06** to **3E-06** based on EPA criteria and from **2E-06** to **5E-06** based on Cal/EPA criteria.

BAP (EQ) and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 13

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	3E-06	3E-06	82%	5E-06	4E-06	89%
Future Resident	Surface	BAP (EQ)	3E-06	3E-06	82%	5E-06	4E-06	89%
	Subsurface	BAP (EQ)	3E-06	3E-06	82%	5E-06	4E-06	89%
Future Commercial/Industrial Worker	Surface	BAP (EQ)	1E-06	Not a COC	--	2E-06	2E-06	93%
	Subsurface	BAP (EQ)	1E-06	Not a COC	--	2E-06	2E-06	93%
Future Recreational User	Surface	BAP (EQ)	1E-06	Not a COC	--	2E-06	2E-06	93%
	Subsurface	BAP (EQ)	1E-06	Not a COC	--	2E-06	2E-06	93%
Future Construction Worker	Subsurface	Chromium	2E-06	2E-06	89%	2E-06	2E-06	83%

Cumulative site HIs do not exceed the threshold of 1 for any scenario.

C9.13.2 Groundwater

Groundwater exposure at EU 13 was evaluated for the future construction worker; exposure was based on contact with groundwater nonsource area GW-NS1. The cumulative site cancer risk for groundwater is less than the point of departure and the cumulative site noncancer HI is less than 1. No COCs were identified for groundwater.

C9.13.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for EU 13 are less than the EPA point of departure of 1E-06 for these scenarios. Likewise, cumulative noncancer HIs are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.13.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 13.

For the residential and commercial/industrial scenarios, the cumulative, multimedia risks are also essentially equivalent to the risks for soil exposure because the risks associated with vapor intrusion exposure are negligible compared with those for soil. Likewise, cumulative multimedia risks for the construction worker scenario are essentially equivalent to risks for soil exposure because the risks associated with groundwater exposure are negligible compared with those for soil. Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at EU 13 for this scenario.

C9.13.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 13 are below all screening criteria for lead.

C9.14 EXPOSURE UNIT 14

Risk estimates for EU 14 are summarized in Tables C-38A through C-38C. Detailed risk calculations for EU 14 are provided in Attachment C14.

C9.14.1 Soil

Cumulative site cancer risks for exposure to soil at EU 14 are within the EPA risk management range for all scenarios. Site cancer risks range from **3E-06** to **2E-05** based on EPA criteria and from **4E-06** to **1E-04** based on Cal/EPA criteria.

2,3,7,8-TCDD TEQ, **BAP (EQ), arsenic**, **and chromium** and are soil COCs based on both EPA and Cal/EPA criteria. **Chlordane** is also a soil COC based on Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 14

			EPA Criteria			Cal/EPA Criteria		
Scenario	Soil Interval	COC	Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	2,3,7,8-TCDD TEQ	9E-06	6E-06	62%	1E-05	6E-06	56%
		BAP (EQ)		3E-06	31%		4E-06	37%
Future Resident	Surface	2,3,7,8-TCDD TEQ	8E-06	3E-06	36%	1E-05	3E-06	23%
		BAP (EQ)		3E-06	34%		4E-06	30%
		Chlordane		Not a COC	--		5E-06	37%
	Subsurface	2,3,7,8-TCDD TEQ	2E-05	3E-06	12%	1E-04	3E-06	3%
		Arsenic		2E-05	67%		1E-04	90%
		BAP (EQ)		2E-06	10%		3E-06	3%
		Chlordane		Not a COC	--		5E-06	4%
Future Commercial/ Industrial Worker	Surface	BAP (EQ)	3E-06	Not a COC	--	4E-06	2E-06	37%
	Subsurface	Arsenic	7E-06	4E-06	64%	3E-05	3E-05	88%
Future Recreational User	Surface	BAP (EQ)	3E-06	Not a COC	--	5E-06	2E-06	33%
		Chlordane		Not a COC	--		2E-06	36%
	Subsurface	Arsenic	9E-06	6E-06	66%	4E-05	4E-05	89%
		Chlordane		Not a COC	--		2E-06	4%
Future Construction Worker	Subsurface	Arsenic	3E-06	Not a COC	--	6E-06	4E-06	59%
		Chromium		2E-06	55%		2E-06	26%

The cumulative site HI exceeds the threshold of 1 for the current residential, future residential, and future construction worker scenarios. For the residential scenarios, the cumulative site HI is **2**; however, the highest segregated HI does not exceed 1. For the construction worker scenario, the cumulative site HI is **3** and the highest segregated HI is **2**. **Manganese** is a soil COC for the construction worker scenario, as shown in the table below.

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – EU 14

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Future Construction Worker	Subsurface	Manganese	3 (2)	2	47%

Cumulative site HIs do not exceed 1 for the commercial/industrial or recreational scenarios.

C9.14.2 Groundwater

Groundwater exposure at EU 14 was evaluated for the future construction worker; exposure was based on contact with groundwater at source area GW-S3 and nonsource area GW-NS1. The cumulative site cancer risk ranges from 1E-07 (GW-NS1) to 2E-07 (GW-S3) based on EPA criteria and from 8E-07 (GW-S3) to 9E-07 (GW-NS1) based on Cal/EPA criteria. Risks are based on results for GW-SNS1 because risks are highest for this exposure area. The cumulative site cancer risk for groundwater at GW-NS1 is less than the EPA point of departure of 1E-06 based on EPA and Cal/EPA criteria, and the cumulative site noncancer HI is less than 1. No COCs were identified for groundwater.

C9.14.3 Vapor Intrusion

Soil gas data were not collected for EU 14 because volatile chemical sources were not identified for this EU. Therefore, the vapor intrusion exposure pathway is incomplete for this EU and risks were not quantified.

C9.14.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA also estimated cumulative risks across all exposure media for EU 14.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for.

Multimedia risks were not estimated for the residential, commercial/industrial, and recreational scenarios because soil was the only exposure medium identified at EU 14 for these scenarios.

C9.14.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. The EPC for lead for subsurface soil at EU 14 exceeds the Cal/EPA residential screening criterion for lead. **Lead** is therefore a subsurface soil COC for the future residential scenario. EPCs for lead are below the Cal/EPA industrial screening criterion for lead, and are below EPA residential and industrial criteria.

C9.15 EXPOSURE UNIT 15

Risk estimates for EU 15 are summarized in Tables C-39A through C-39C. Detailed risk calculations for EU 15 are provided in Attachment C15.

C9.15.1 Soil

Cumulative site cancer risks for exposure to soil at EU 15 are within the EPA risk management range for all scenarios. Site cancer risks range from **2E-06** to **5E-06** based on EPA criteria and from **2E-06** to **8E-06** based on Cal/EPA criteria.

BAP (EQ) and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 15

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	5E-06	4E-06	74%	8E-06	7E-06	83%
Future Resident	Surface	BAP (EQ)	5E-06	4E-06	74%	8E-06	7E-06	83%
	Subsurface	BAP (EQ)	5E-06	4E-06	73%	8E-06	7E-06	82%
Future Commercial/ Industrial Worker	Surface	BAP (EQ)	2E-06	2E-06	81%	3E-06	3E-06	88%
	Subsurface	BAP (EQ)	2E-06	2E-06	82%	3E-06	3E-06	88%
Future Recreational User	Surface	BAP (EQ)	2E-06	2E-06	80%	4E-06	3E-06	87%
	Subsurface	BAP (EQ)	2E-06	2E-06	85%	4E-06	3E-06	90%
Future Construction Worker	Subsurface	Chromium	2E-06	2E-06	76%	2E-06	2E-06	70%

Cumulative site HIs do not exceed the threshold of 1 for any scenario.

C9.15.2 Groundwater

Groundwater exposure at EU 15 was evaluated for the future construction worker; exposure was based on contact with groundwater at source areas GW-S3 and GW-S4. The cumulative site cancer risk ranges from 2E-07 (GW-S3) to 9E-07 (GW-S4) based on EPA criteria and from 8E-07 (GW-S3) to 5E-06 (GW-S4) based on Cal/EPA criteria. Risks are based on results for GW-S4 because risks are highest for this exposure area. The cumulative site cancer risk for groundwater at GW-S4 is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **5E-06**, exceeding the point of departure. **Arsenic** contributes all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. Arsenic is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – EU 15

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S4	Arsenic	9E-07	Not a COC	--	5E-06	5E-06	100%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1.

C9.15.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for EU 15 are less than the EPA point of departure of 1E-06 for these scenarios. Likewise, cumulative noncancer HIs are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.15.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 15.

For the residential and commercial/industrial scenarios, the cumulative, multimedia site risks are within the risk management range and are essentially equivalent to the risks for soil exposure. Risks associated with vapor intrusion exposure are negligible compared with those for soil.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for **arsenic**, which is a COC in groundwater for this EU.

Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at EU 15 for this scenario.

C9.15.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 15 are below all screening criteria for lead.

C9.16 EXPOSURE UNIT 16

Risk estimates for EU 16 are summarized in Tables C-40A through C-40C. Detailed risk calculations for EU 16 are provided in Attachment C16.

C9.16.1 Soil

Cumulative site cancer risks for exposure to soil at EU 16 are within the EPA risk management range for all scenarios. Site cancer risks range from **2E-06** to **7E-06** based on EPA criteria and from **2E-06** to **9E-06** based on Cal/EPA criteria.

2,3,7,8-TCDD TEQ, **BAP (EQ)**, and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 16

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	2,3,7,8-TCDD TEQ	7E-06	7E-06	96%	7E-06	7E-06	96%
Future Resident	Surface	2,3,7,8-TCDD TEQ	7E-06	7E-06	96%	7E-06	7E-06	96%
	Subsurface	2,3,7,8-TCDD TEQ	7E-06	4E-06	53%	9E-06	4E-06	39%
		BAP (EQ)		3E-06	44%		5E-06	58%
Future Commercial/ Industrial Worker	Surface	2,3,7,8-TCDD TEQ	2E-06	2E-06	96%	2E-06	2E-06	95%
	Subsurface	BAP (EQ)	2E-06	Not a COC	--	3E-06	2E-06	67%
Future Recreational User	Surface	2,3,7,8-TCDD TEQ	3E-06	3E-06	97%	3E-06	3E-06	97%
	Subsurface	BAP (EQ)	3E-06	Not a COC	--	4E-06	3E-06	63%
Future Construction Worker	Subsurface	Chromium	2E-06	2E-06	82%	2E-06	2E-06	76%

Cumulative site HIs do not exceed the threshold of 1 for any scenario.

C9.16.2 Groundwater

Groundwater exposure at EU 16 was evaluated for the future construction worker; exposure was based on contact with groundwater at source area GW-S4 and nonsource area GW-NS1. The cumulative site cancer risk ranges from 1E-07 (GW-NS1) to 9E-07 (GW-S4) based on EPA criteria and from 9E-07 (GW-NS-1) to 5E-06 (GW-S4) based on Cal/EPA criteria. Risks are based on results for GW-S4 because risks are highest for this exposure area. The cumulative site cancer risk for groundwater at GW-S4 is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **5E-06** and is above the point of departure. **Arsenic** contributes all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. Arsenic is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – EU 16

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S4	Arsenic	9E-07	Not a COC	--	5E-06	5E-06	100%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1.

C9.16.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. For the current and future residential scenario, the cumulative vapor intrusion cancer risk is **2E-06** based on EPA criteria and **6E-06** based on Cal/EPA criteria. **Benzene** is a COC for soil gas based on Cal/EPA criteria only, and contributes almost all of the cumulative residential risk estimate for vapor intrusion, as shown in the table below. The cumulative vapor intrusion cancer risk is less than the EPA point of departure of 1E-06 for the future commercial/industrial scenario based on both EPA and Cal/EPA criteria.

CHEMICALS OF CONCERN IN SOIL GAS BASED ON CANCER RISK – EU 16

Scenario	Soil Gas Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Building 1306 (12SG341)	Benzene	2E-06	Not a COC	--	6E-06	6E-06	99%
Future Resident	Building 1306 (12SG341)	Benzene	2E-06	Not a COC	--	6E-06	6E-06	99%

Cumulative noncancer HIs for vapor intrusion are all less than the threshold HI of 1.

C9.16.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA also estimated cumulative risks across all exposure media for EU 16.

For the residential scenarios, multimedia exposures result in an increase to the overall cancer site risk estimate. The multimedia site cancer risk for the residential scenario is **9E-06** based on EPA criteria and **1E-05** based on Cal/EPA criteria. Eighty percent (**7E-06**) of the risk is associated with soil exposure and the remaining 20 percent (**2E-06**) is associated with subsurface vapor intrusion exposure, based on EPA criteria. Based on Cal/EPA criteria, the percentage of overall site risk associated with vapor intrusion exposure increases to 40 percent (**6E-06**) and the percentage associated with soil exposure decreases to 60 percent (**7E-06**). This difference results from differences between EPA and Cal/EPA toxicity criteria for evaluating inhalation (vapor intrusion) exposure to **benzene**.

For the commercial/industrial scenario, the cumulative, multimedia site risks are essentially equivalent to the risks for soil exposure because the risks associated with vapor intrusion exposure are negligible compared with those for soil.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for **arsenic**, which is a COC in groundwater for this EU.

Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at EU 16 for this scenario.

C9.16.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 16 are below all screening criteria for lead.

C9.17 EXPOSURE UNIT 17

Risk estimates for EU 17 are summarized in Tables C-41A through C-41C. Detailed risk calculations for EU 17 are provided in Attachment C17.

C9.17.1 Soil

Cumulative site cancer risks for exposure to soil at EU 17 are within the EPA risk management range for all scenarios. Site cancer risks range from **3E-06** to **3E-05** based on EPA and Cal/EPA criteria.

2,3,7,8-TCDD TEQ, **BAP (EQ)**, and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 17

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	2,3,7,8-TCDD TEQ	3E-05	5E-06	18%	3E-05	5E-06	17%
		BAP (EQ)		2E-05	79%		3E-05	80%
Future Resident	Surface	2,3,7,8-TCDD TEQ	3E-05	5E-06	18%	3E-05	5E-06	17%
		BAP (EQ)		2E-05	79%		3E-05	80%
	Subsurface	2,3,7,8-TCDD TEQ	2E-05	3E-06	12%	2E-05	3E-06	12%
		BAP (EQ)		2E-05	84%		2E-05	81%
Future Commercial/ Industrial Worker	Surface	2,3,7,8-TCDD TEQ	1E-05	2E-06	13%	1E-05	2E-06	12%
		BAP (EQ)		1E-05	85%		1E-05	85%
	Subsurface	BAP (EQ)	1E-05	8E-06	88%	9E-06	8E-06	87%
Future Recreational User	Surface	2,3,7,8-TCDD TEQ	1E-05	2E-06	15%	1E-05	2E-06	15%
		BAP (EQ)		1E-05	82%		1E-05	83%
	Subsurface	BAP (EQ)	1E-05	1E-05	87%	1E-05	9E-06	86%
Future Construction Worker	Subsurface	Chromium	3E-06	2E-06	52%	3E-06	2E-06	53%

Cumulative noncancer HIs for vapor intrusion are all less than the threshold HI of 1.

C9.17.2 Groundwater

Groundwater exposure at EU 17 was evaluated for the future construction worker; exposure was based on contact with groundwater nonsource area GW-NS1. The cumulative site cancer risk for groundwater is less than the point of departure and the cumulative site noncancer HI is less than 1. No COCs were identified for groundwater.

C9.17.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. The cumulative vapor intrusion cancer risk for EU 17 is less than the EPA point of departure of 1E-06 for the residential and commercial/industrial scenarios. No COCs were identified for soil gas.

C9.17.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 17.

For the residential and commercial/industrial scenarios, the cumulative, multimedia risks are essentially equivalent to the risks for soil exposure because the risk associated with vapor intrusion exposure is a small percentage of the risks associated with soil exposure. Likewise, cumulative multimedia risks for the construction worker scenario are essentially equivalent to risks for soil exposure because the risks associated with groundwater exposure are negligible compared with those for soil. Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at EU 17 for this scenario.

C9.17.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 17 are below all screening criteria for lead.

C9.18 EXPOSURE UNIT 18

Risk estimates for EU 18 are summarized in Tables C-42A through C-42C. Detailed risk calculations for EU 18 are provided in Attachment C18.

C9.18.1 Soil

Cumulative site cancer risks for exposure to soil at EU 18 are within the EPA risk management range for all scenarios. Site cancer risks range from 1E-06 to **3E-06** based on EPA criteria and 1E-06 to **5E-06** based on Cal/EPA criteria.

BAP (EQ) and **chromium** are COCs for soil. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk

results are provided below. COCs were not identified for the future commercial/industrial and recreational scenarios.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 18

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	3E-06	2E-06	77%	5E-06	4E-06	85%
Future Resident	Surface	BAP (EQ)	3E-06	2E-06	78%	3E-06	3E-06	82%
	Subsurface	BAP (EQ)	3E-06	2E-06	72%	3E-06	3E-06	77%
Future Construction Worker	Subsurface	Chromium	2E-06	2E-06	91%	2E-06	2E-06	89%

Cumulative site HIs do not exceed 1 for any scenarios.

C9.18.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompass EU 18. Therefore, exposure pathways for groundwater are incomplete for this EU and risks were not quantified.

C9.18.3 Vapor Intrusion

Soil gas data were not collected for EU 18 because volatile chemical sources were not identified for this EU. Therefore, the vapor intrusion exposure pathway is incomplete for this EU and risks were not quantified.

C9.18.4 Multimedia, Cumulative Exposures

Soil is the only exposure medium for EU 18; therefore, multimedia risks were not estimated for this EU.

C9.18.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil with the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 18 are below all screening criteria for lead.

C9.19 EXPOSURE UNIT 19

Risk estimates for EU 19 are summarized in Tables C-43A through C-43C. Detailed risk calculations for EU 19 are provided in Attachment C19.

C9.19.1 Soil

Cumulative site cancer risks for exposure to soil at EU 19 are within the EPA risk management range for all scenarios. Site cancer risks range from **2E-06** to **1E-05** based on both EPA and Cal/EPA criteria.

BAP (EQ) and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – EU 19

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	1E-05	1E-05	80%	1E-05	1E-05	78%
Future Resident	Surface	BAP (EQ)	1E-05	1E-05	80%	1E-05	1E-05	79%
	Subsurface	BAP (EQ)	1E-05	9E-06	81%	1E-05	7E-06	76%
Future Commercial/ Industrial Worker	Surface	BAP (EQ)	5E-06	4E-06	85%	5E-06	4E-06	83%
	Subsurface	BAP (EQ)	4E-06	4E-06	85%	4E-06	3E-06	81%
Future Recreational User	Surface	BAP (EQ)	6E-06	5E-06	84%	6E-06	5E-06	82%
	Subsurface	BAP (EQ)	5E-06	4E-06	84%	4E-06	3E-06	80%
Future Construction Worker	Subsurface	Chromium	2E-06	2E-06	70%	2E-06	2E-06	72%

Cumulative site HIs do not exceed 1 for any scenarios.

C9.19.2 Groundwater

Groundwater exposure at EU 19 was evaluated for the future construction worker; exposure was based on contact with groundwater at source area GW-S4. The cumulative site cancer risk for groundwater is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **5E-06**, above the point of departure. **Arsenic** contributes all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. Arsenic is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – EU 19

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S4	Arsenic	9E-07	Not a COC	--	5E-06	5E-06	100%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1.

C9.19.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for EU 19 do not exceed the EPA point of departure of 1E-06 for these scenarios. Cumulative noncancer HIs for vapor intrusion exposure are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.19.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for EU 19.

For the residential and commercial/industrial scenarios, the cumulative, multimedia risks are essentially equivalent to the risks discussed above for soil exposure because the risks associated with vapor intrusion exposure are negligible compared with those for soil.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria.

Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at EU 19 for this scenario.

C9.19.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil with the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at EU 19 are below all screening criteria for lead.

C9.20 AREA OF INTEREST 1201/1203/1220

Risk estimates for AOI 1201/1203/1220 are summarized in Tables C-44A through C-44C. Detailed risk calculations for this AOI are provided in Attachment C20.

C9.20.1 Soil

Cumulative site cancer risks for exposure to soil at AOI 1201/1203/1220 are within the EPA risk management range for all scenarios. Site cancer risks range from **5E-06** to **5E-05** based on EPA criteria and from **9E-06** to **1E-04** based on Cal/EPA criteria.

2,3,7,8-TCDD TEQ, **BAP (EQ)**, **arsenic**, and **chromium** are soil COCs based on both EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – AOI 1201/1203/1220

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	2,3,7,8-TCDD TEQ	3E-05	3E-05	91%	3E-05	3E-05	87%
		BAP (EQ)		2E-06	6%		3E-06	10%
Future Resident	Surface	2,3,7,8-TCDD TEQ	3E-05	3E-05	91%	3E-05	3E-05	87%
		BAP (EQ)		2E-06	6%		3E-06	10%
	Subsurface	2,3,7,8-TCDD TEQ	5E-05	3E-05	54%	1E-04	3E-05	18%
		Arsenic		2E-05	39%		1E-04	79%
		BAP (EQ)		2E-06	5%		4E-06	3%
Future Commercial/ Industrial Worker	Surface	2,3,7,8-TCDD TEQ	8E-06	7E-06	88%	9E-06	7E-06	82%
	Subsurface	2,3,7,8-TCDD TEQ	1E-05	7E-06	53%	4E-05	7E-06	17%
		Arsenic		5E-06	38%		3E-05	78%
		BAP (EQ)		Not a COC	--		2E-06	4%
Future Recreational User	Surface	2,3,7,8-TCDD TEQ	1E-05	1E-05	90%	1E-05	1E-05	85%
	Subsurface	2,3,7,8-TCDD TEQ	2E-05	1E-05	54%	6E-05	1E-05	17%
		Arsenic		7E-06	38%		5E-05	79%
		BAP (EQ)		Not a COC	--		2E-06	3%
Future Construction Worker	Subsurface	Arsenic	5E-06	Not a COC	--	9E-06	5E-06	52%
		Chromium		2E-06	49%		2E-06	28%

For the current and future residential scenarios, the cumulative site HI is **4** and the highest segregated HI is **2**. **2,3,7,8-TCDD TEQ** is also a soil COC based on noncancer HI results, as shown in the table below.

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – AOI 1201/1203/1220

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Current Resident	Surface	2,3,7,8-TCDD TEQ	4 (2)	2	58%
Future Resident	Surface	2,3,7,8-TCDD TEQ	4 (2)	2	58%
	Subsurface	2,3,7,8-TCDD TEQ	4 (2)	2	61%

The cumulative site HI for the construction worker scenario is **2**; however, the highest segregated HI for this scenario does not exceed 1. The cumulative site HIs for the remaining scenarios are below the threshold HI of 1.

C9.20.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompass 1201/1203/1220. Therefore, exposure pathways for groundwater are incomplete for this AOI and risks were not quantified.

C9.20.3 Vapor Intrusion

Soil gas data were not collected for AOI 1201/1203/1220 because volatile chemical sources were not identified for this AOI. Therefore, the vapor intrusion exposure pathway is incomplete for this AOI and risks were not quantified.

C9.20.4 Multimedia, Cumulative Exposures

Soil is the only exposure medium for AOI 1201/1203/1220; therefore, multimedia risks were not estimated for this AOI.

C9.20.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil with the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead in surface soil and subsurface soil at AOI 1201/1203/1220 exceed Cal/EPA and EPA residential screening criteria for lead, and the Cal/EPA industrial screening criterion for lead, for all soil intervals. **Lead** is therefore a surface soil COC for the current residential scenario and a surface and subsurface soil COC for the future residential and commercial/industrial scenarios. EPCs for lead in surface and subsurface soil are below the EPA industrial screening criterion.

C9.21 AOI 1246

Risk estimates for AOI 1246 are summarized in Tables C-45A through C-45C. Detailed risk calculations for AOI 1246 are provided in Attachment C21.

C9.21.1 Soil

Cumulative site cancer risks for exposure to soil at AOI 1246 are below the point of departure for the future construction worker scenario based on EPA and Cal/EPA criteria. Cumulative site cancer risks are also below the point of departure for the future commercial/industrial scenario (subsurface soil exposure) based on EPA criteria. For the remaining scenarios, cumulative site cancer risks are in the low end of the risk management range, and range from 1E-06 to **3E-06** based on EPA criteria and 1E-06 to **4E-06** based on Cal/EPA criteria.

BAP (EQ) is a COC for soil based on Cal/EPA criteria. The chemical-specific risk results for this COC and an analysis of the percent contribution of BAP to the overall cumulative risk results are provided below. COCs were not identified for the future commercial/industrial (subsurface soil), recreational (subsurface soil), and construction worker scenarios.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – AOI 1246

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	3E-06	2E-06	90%	4E-06	4E-06	92%
Future Resident	Surface	BAP (EQ)	3E-06	2E-06	90%	4E-06	4E-06	92%
	Subsurface	BAP (EQ)	2E-06	2E-06	87%	3E-06	3E-06	90%
Future Commercial/Industrial Worker	Surface	BAP (EQ)	1E-06	Not a COC	--	2E-06	2E-06	93%
Future Recreational User	Surface	BAP (EQ)	1E-06	Not a COC	--	2E-06	2E-06	93%

Cumulative site HIs do not exceed 1 for any scenarios.

C9.21.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompass AOI 1246. Therefore, exposure pathways for groundwater are incomplete for this AOI and risks were not quantified.

C9.21.3 Vapor Intrusion

Soil gas data were not collected for AOI 1246 because volatile chemical sources were not identified for this AOI. Therefore, the vapor intrusion exposure pathway is incomplete for this AOI and risks were not quantified.

C9.21.4 Multimedia, Cumulative Exposures

Soil is the only exposure medium for AOI 1246; therefore, multimedia risks were not estimated for this AOI.

C9.21.5 Lead

Table C-51 compares the EPC for lead in subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. The EPC for lead for subsurface soil at AOI 1246 exceeds the Cal/EPA residential screening criterion for lead. **Lead** is therefore a subsurface soil COC for the future residential scenario. The EPCs for lead are below the Cal/EPA industrial screening criterion for lead, and are below EPA residential and industrial criteria.

Comparisons of the EPC for lead in surface soil to screening criteria were not made because concentrations of lead in surface soil at AOI 1246 do not exceed ambient levels (see Appendix B).

C9.22 AOI 1248

Risk estimates for AOI 1248 are summarized in Tables C-46A through C-46C. Detailed risk calculations for AOI 1248 are provided in Attachment C22.

C9.22.1 Soil

Cumulative site cancer risks for exposure to soil at AOI 1248 are below the risk management range for the future construction worker scenario based on both EPA and Cal/EPA criteria. For the remaining scenarios, cumulative site cancer risks are in the risk management range; risks range from 1E-06 to **3E-06** based on EPA criteria and from **2E-06** to **5E-06** based on Cal/EPA criteria.

BAP (EQ) is a COC for soil for the residential scenarios. An analysis of the percent contribution of BAP to the overall cumulative risk results is provided below. COCs were not identified for the future commercial/industrial (subsurface soil) and construction worker scenarios.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – AOI 1248

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	3E-06	3E-06	92%	5E-06	4E-06	87%
Future Resident	Surface	BAP (EQ)	3E-06	3E-06	92%	5E-06	4E-06	87%
	Subsurface	BAP (EQ)	3E-06	3E-06	93%	4E-06	4E-06	91%
Future Commercial/Industrial Worker	Surface	BAP (EQ)	1E-06	Not a COC	--	2E-06	2E-06	89%
Future Recreational User	Surface	BAP (EQ)	1E-06	Not a COC	--	2E-06	2E-06	88%
	Subsurface	BAP (EQ)	1E-06	Not a COC	--	2E-06	2E-06	92%

Cumulative site HIs do not exceed 1 for any scenarios.

C9.22.2 Groundwater

Groundwater exposure at AOI 1248 was evaluated for the future construction worker; exposure was based on contact with groundwater source area GW-S5. The cumulative site cancer risk for groundwater is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **2E-06**, slightly above the point of departure. **Arsenic** contributes nearly all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. **Arsenic** is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – AOI 1248

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S5	Arsenic	5E-07	Not a COC	--	2E-06	2E-06	95%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1.

C9.22.3 Vapor Intrusion

Soil gas data were not collected for AOI 1248 because volatile chemical sources were not identified for this AOI. Therefore, the vapor intrusion exposure pathway is incomplete for this AOI and risks were not quantified.

C9.22.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for AOI 1248.

For the construction worker scenario, the cumulative, multimedia risks are essentially equivalent to the risks discussed above for groundwater exposure because the risks associated with soil exposure are negligible compared with those for groundwater.

Multimedia risks were not estimated for the residential, commercial/industrial, or recreational scenarios because soil was the only exposure medium identified at this AOI for these scenarios.

C9.22.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at AOI 1248 are below all screening criteria for lead.

C9.23 AOI 1254

Risk estimates for AOI 1254 are summarized in Tables C-47A through C-47C. Detailed risk calculations for AOI 1254 are provided in Attachment C23.

C9.23.1 Soil

Cumulative site cancer risks for exposure to soil at AOI 1254 are below the risk management range for the future construction worker scenario based on EPA and Cal/EPA criteria. For the remaining scenarios, cumulative site cancer risks are in the risk management range; risks range from **2E-06** to **1E-05** based on both EPA and Cal/EPA criteria.

BAP (EQ) and **total Aroclors** are COCs for soil. The chemical-specific risk results for these COCs and an analysis of the percent contribution of these COCs to the overall cumulative risk results are provided below. COCs were not identified for subsurface soil exposure for the future commercial/industrial and construction worker scenarios.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – AOI 1254

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	BAP (EQ)	1E-05	3E-06	32%	1E-05	5E-06	39%
		Total Aroclors		7E-06	68%		7E-06	59%
Future Resident	Surface	BAP (EQ)	9E-06	3E-06	36%	1E-05	5E-06	44%
		Total Aroclors		6E-06	63%		6E-06	54%
	Subsurface	BAP (EQ)	5E-06	2E-06	48%	6E-06	4E-06	59%
		Total Aroclors		2E-06	51%		2E-06	40%
Future Commercial/ Industrial Worker	Surface	BAP (EQ)	4E-06	Not a COC	--	4E-06	2E-06	44%
		Total Aroclors		2E-06	63%		2E-06	55%
Future Recreational User	Surface	BAP (EQ)	4E-06	2E-06	36%	5E-06	2E-06	44%
		Total Aroclors		3E-06	63%		3E-06	54%
	Subsurface	BAP (EQ)	2E-06	Not a COC	--	3E-06	2E-06	59%

Cumulative site HIs do not exceed 1 for any scenarios.

C9.23.2 Groundwater

None of the groundwater exposure areas identified for IR Site 12 encompasses AOI 1254. Therefore, exposure pathways for groundwater are incomplete for this AOI and risks were not quantified.

C9.23.3 Vapor Intrusion

Soil gas data were not collected for AOI 1254 because volatile chemical sources were not identified for this AOI. Therefore, the vapor intrusion exposure pathway is incomplete for this AOI and risks were not quantified.

C9.23.4 Multimedia, Cumulative Exposures

Soil is the only exposure medium for AOI 1254; therefore, multimedia risks were not estimated for this AOI.

C9.23.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. The EPC for lead for unpaved surface soil and all surface soil at AOI 1254 exceeds the Cal/EPA residential screening criterion for lead. **Lead** is therefore a surface soil COC for the current and future residential scenarios. The EPCs for lead are below the Cal/EPA industrial screening criterion for lead, and are below EPA residential and industrial criteria.

C9.24 AOI HALYBURTON/BIGELOW COURT

Risk estimates for AOI Halyburton/Bigelow Court are summarized in Tables C-48A through C-48C. Detailed risk calculations for this AOI are provided in Attachment C24.

C9.24.1 Soil

Cumulative site cancer risks for exposure to soil at AOI Halyburton/Bigelow Court are within the EPA risk management range for all scenarios. Site cancer risks range from **8E-06** to **1E-04** based on both EPA and Cal/EPA criteria.

2,3,7,8-TCDD TEQ, **BAP (EQ)**, **total Aroclors**, and **chromium** are soil COCs based on EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – AOI HALYBURTON/BIGELOW COURT

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	2,3,7,8-TCDD TEQ	8E-05	2E-06	2%	8E-05	2E-06	2%
		BAP (EQ)		2E-06	3%		3E-06	4%
		Total Aroclors		7E-05	95%		7E-05	94%
Future Resident	Surface	2,3,7,8-TCDD TEQ	7E-05	2E-06	3%	7E-05	2E-06	3%
		BAP (EQ)		2E-06	3%		3E-06	4%
		Total Aroclors		7E-05	94%		7E-05	97%
	Subsurface	2,3,7,8-TCDD TEQ	1E-04	2E-06	2%	1E-04	2E-06	2%
		BAP (EQ)		Not a COC	--		2E-06	2%
		Total Aroclors		1E-04	97%		1E-04	96%
Future Commercial/ Industrial Worker	Surface	Total Aroclors	3E-05	3E-05	95%	3E-05	3E-05	94%
	Subsurface	Total Aroclors	4E-05	4E-05	97%	4E-05	4E-05	96%
Future Recreational User	Surface	Total Aroclors	3E-05	3E-05	95%	3E-05	3E-05	94%
	Subsurface	Total Aroclors	5E-05	5E-05	97%	5E-05	5E-05	96%
Future Construction Worker	Subsurface	Chromium	8E-06	2E-06	19%	8E-06	2E-06	19%
		Total Aroclors		6E-06	75%		6E-06	74%

Cumulative noncancer HIs exceed the threshold of 1 for all scenarios. **Total Aroclors**, which is a soil COC based on cancer risk, is also a soil COC for all scenarios based on noncancer HI results. The highest cumulative site HI is **22** and the highest HI based on segregation of target organs is **20** (future residential exposure to subsurface soil). The highest segregated HI is predominantly associated with exposure to **total Aroclors**, which contributes 89 to 94 percent of the overall HI for each scenario (see below).

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – AOI HALYBURTON/BIGELOW COURT

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Current Resident	Subsurface	Total Aroclors	15 (14)	14	91%
Future Resident	Surface	Total Aroclors	15 (13)	13	91%
	Subsurface	Total Aroclors	22 (20)	20	89%
Future Commercial/ Industrial Worker	Surface	Total Aroclors	2 (2)	2	94%
	Subsurface	Total Aroclors	3 (3)	3	94%
Future Recreational User	Surface	Total Aroclors	7 (6)	6	93%
	Subsurface	Total Aroclors	10 (9)	9	91%
Future Construction Worker	Subsurface	Total Aroclors	12 (11)	11	89%

C9.24.2 Groundwater

Groundwater exposure at AOI Halyburton/Bigelow Court was evaluated for the future construction worker; exposure was based on contact with groundwater nonsource area GW-NS1. The cumulative site cancer risk for groundwater is less than the point of departure and the cumulative site noncancer HI is less than 1. No COCs were identified for groundwater.

C9.24.3 Vapor Intrusion

Soil gas data were not collected for AOI Halyburton/Bigelow Court because volatile chemical sources were not identified for this AOI. Therefore, the vapor intrusion exposure pathway is incomplete for this AOI and risks were not quantified.

C9.24.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for AOI Halyburton/Bigelow Court.

For the construction worker scenario, cumulative, multimedia site risks are essentially equivalent to the risks for soil exposure because the risks associated with groundwater exposure are minor compared with those for soil.

Multimedia risks were not estimated for the residential, commercial/industrial, and recreational scenarios because soil was the only exposure medium identified at this AOI for these scenarios.

C9.24.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. EPCs for lead at AOI Halyburton/Bigelow Court are below all screening criteria for lead.

C9.25 AOI MARINER DRIVE

Risk estimates for AOI Mariner Drive are summarized in Tables C-49A through C-49C. Detailed risk calculations for this AOI are provided in Attachment C25.

C9.25.1 Soil

Cumulative site cancer risks for exposure to soil at AOI Mariner Drive are within the EPA risk management range for all scenarios. Site cancer risks range from **7E-06** to **3E-05** based on EPA criteria and from **7E-06** to **1E-04** based on Cal/EPA criteria.

2,3,7,8-TCDD TEQ, **arsenic**, **BAP (EQ)**, **total Aroclors**, and **chromium** are soil COCs based on EPA and Cal/EPA criteria. The chemical-specific risk results for these COCs and an analysis of the percent contribution of each COC to the overall cumulative risk results are provided below.

CHEMICALS OF CONCERN IN SOIL BASED ON CANCER RISK – AOI MARINER DRIVE

Scenario	Soil Interval	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Current Resident	Surface	2,3,7,8-TCDD TEQ	3E-05	5E-06	17%	1E-04	5E-06	4%
		Arsenic		2E-05	59%		1E-04	89%
		BAP (EQ)		6E-06	22%		9E-06	7%
Future Resident	Surface	2,3,7,8-TCDD TEQ	3E-05	5E-06	17%	1E-04	5E-06	4%
		Arsenic		2E-05	59%		1E-04	89%
		BAP (EQ)		6E-06	21%		8E-06	7%
	Subsurface	2,3,7,8-TCDD TEQ	3E-05	2E-05	59%	3E-05	2E-05	59%
		BAP (EQ)		4E-06	15%		5E-06	16%
		Total Aroclors		3E-06	11%		3E-06	11%
Future Commercial/ Industrial Worker	Surface	Arsenic	9E-06	5E-06	53%	4E-05	3E-05	86%
		BAP (EQ)		3E-06	29%		3E-06	9%
	Subsurface	2,3,7,8-TCDD TEQ	9E-06	5E-06	50%	9E-06	5E-06	51%
		BAP (EQ)		2E-06	19%		2E-06	21%
Future Recreational User	Surface	2,3,7,8-TCDD TEQ	1E-05	2E-06	16%	5E-05	2E-06	4%
		Arsenic		7E-06	57%		4E-05	88%
		BAP (EQ)		3E-06	25%		4E-06	8%
	Subsurface	2,3,7,8-TCDD TEQ	1E-05	7E-06	55%	1E-05	7E-06	56%
		BAP (EQ)		2E-06	17%		2E-06	19%
Future Construction Worker	Subsurface	Chromium	7E-06	5E-06	67%	7E-06	5E-06	67%

The cumulative site HI exceeds the threshold of 1 for the current residential, future residential, and future construction worker scenarios. For the residential scenarios, the cumulative site HI ranges from **2** to **6**; the highest segregated HI is 3. For the construction worker scenario, the cumulative site HI is **7** and the highest segregated HI is **2**. **Thallium** is a COC for residential exposure to subsurface soil; **manganese** and **nickel** are soil COCs based on noncancer hazards for the construction worker scenario, as shown in the table below.

CHEMICALS OF CONCERN IN SOIL BASED ON NONCANCER HAZARD – AOI MARINER DRIVE

Scenario	Soil Interval	COC	Noncancer Hazard Index		
			Cumulative Site HI	COC-Specific HI	% of Cumulative
Future Resident	Subsurface	Thallium	6 (3)	2	29%
Future Construction Worker	Subsurface	Manganese	7 (2)	2	29%
		Nickel		2	24%

C9.25.2 Groundwater

Groundwater exposure at AOI Mariner Drive was evaluated for the future construction worker; exposure was based on contact with groundwater at source area GW-S5. The cumulative site cancer risk for groundwater is less than the EPA point of departure of 1E-06 based on EPA criteria. Based on Cal/EPA criteria, the cumulative site cancer risk is **2E-06**, slightly above the point of departure. **Arsenic** contributes nearly all of the cancer risk for groundwater, as shown below, and is a COC for groundwater based on Cal/EPA criteria. Arsenic is not a COC for groundwater based on EPA criteria.

CHEMICALS OF CONCERN IN GROUNDWATER BASED ON CANCER RISK – MARINER DRIVE

Scenario	Groundwater Exposure Area	COC	EPA Criteria			Cal/EPA Criteria		
			Cumulative Site Risk	COC-Specific Risk	% of Cumulative	Cumulative Site Risk	COC-Specific Risk	% of Cumulative
Future Construction Worker	GW-S5	Arsenic	5E-07	Not a COC	--	2E-06	2E-06	95%

The cumulative site HI for construction worker exposure to groundwater is below the threshold HI of 1.

C9.25.3 Vapor Intrusion

Soil gas data were used to estimate health risks from subsurface vapor intrusion for residential and commercial/industrial scenarios. Cumulative vapor intrusion cancer risks for AOI Mariner Drive are less than the EPA point of departure of 1E-06 for these scenarios. Likewise, cumulative noncancer HIs are all less than the threshold HI of 1. No COCs were identified for soil gas.

C9.25.4 Multimedia, Cumulative Exposures

In addition to estimating cumulative risks for each exposure medium, the HHRA estimated cumulative risks across all exposure media for AOI Mariner Drive.

For the residential and commercial/industrial scenarios, the cumulative, multimedia site risks are essentially equivalent to the risks for soil exposure because the risks associated with vapor intrusion exposure are negligible compared with those for soil.

For the construction worker scenario, the addition of groundwater risks to soil risks results in an increase to overall risks for this scenario based on Cal/EPA criteria, whereas the difference is negligible based on EPA criteria. This difference results from differences between EPA and Cal/EPA criteria for **arsenic**, which is a COC in groundwater for this EU.

Multimedia risks were not estimated for the recreational scenario because soil was the only exposure medium identified at AOI Mariner Drive for this scenario.

C9.25.5 Lead

Table C-51 compares EPCs for lead in surface soil and subsurface soil to the Cal/EPA (2009) and EPA (1994, 2011a) screening criteria for lead. The EPC for lead for subsurface soil at AOI Mariner Drive exceeds the Cal/EPA residential screening criterion for lead. **Lead** is therefore a subsurface soil COC for the future residential scenario. The EPCs for lead are below the Cal/EPA industrial screening criterion for lead, and are below EPA residential and industrial criteria.

C9.26 AMBIENT RISKS

Tables C-50A, C-50B, and C-50C summarize the risks associated with exposure to ambient metals in soil and groundwater at NAVSTA TI by exposure pathway, exposure medium, and receptor. The methods used to estimate ambient risks are the same as those used to estimate site risks. Risks were estimated for residential, commercial/industrial, recreational, and construction worker scenarios, for the same soil and groundwater exposure pathways included in the estimate of site risks. Similarly, EPCs for ambient levels of metals at NAVSTA TI were calculated using the same methods used to calculate EPCs for site COPCs; that is, 95UCL concentrations were used to represent ambient levels of metals. Analytical data for ambient metals were based on PRC (1996) and Tetra Tech (2001). COCs were not identified for the ambient risk evaluation.

Further discussion of the ambient risk results is provided in Section C10.2. Specifically, Section C10.2 discusses the likelihood that site risk estimates are overestimated (especially for those EUs and AOIs for which arsenic is identified as COC), based on the portion of site risks that may be attributable to ambient concentrations.

C9.26.1 Soil

For exposure to ambient levels of metals in soil, cancer risks range from **2E-06** for the construction worker scenario to **1E-05** for the residential scenario based on EPA criteria. Based on Cal/EPA criteria, cancer risks range from **5E-06** for the construction worker scenario to **9E-05** for the residential scenario. For all scenarios, cancer risks from exposure to ambient levels of metals in soil exceed the point of departure for cancer risks of 1E-06, but are within the EPA risk management range of 1E-06 to 1E-04. For the residential scenario, the cancer risk from exposure to ambient levels of metals based on Cal/EPA criteria is near the upper end of the risk management range. In all cases, exposure to ambient levels of **arsenic** in soil contributes nearly all of the cancer risk estimated for ambient metals.

Noncancer HIs for exposure to ambient levels of metals in soil range from 0.1 for the commercial/industrial scenario to **3** for the construction worker scenario. The highest segregated HI by target organ for the construction worker scenario is **2**; most of the HI estimate is associated with ambient levels of **manganese** in soil. For the residential scenario, the noncancer HI associated with exposure to ambient metals is **2**; however, the highest segregated HI by target organ for the residential scenario is 1.

C9.26.2 Groundwater

Risks from exposure to ambient levels of metals in groundwater were evaluated for the construction worker scenario, which is the only scenario for which complete exposure pathways for metals in groundwater were identified. The cancer risk for the construction worker scenario for ambient levels of metals in groundwater is 7E-08 based on EPA criteria and 5E-07 based on Cal/EPA criteria. The noncancer HI associated with exposure to ambient metals in groundwater is 0.3. The risks and hazards associated with ambient levels in metals in groundwater are below the point of departure and below the threshold HI.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
19	uncertainties	Section 2.5.1	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Appendix C, Section C10.0 through C10.10.

C10.0 UNCERTAINTY ANALYSIS

Varying degrees of uncertainty at each stage of the HHRA arise from assumptions made in the risk assessment and from the limitations of the data used to calculate risks. Uncertainty and variability are also inherent in the exposure assessment, toxicity values, and risk characterization. Table C-52 lists the general uncertainties associated with HHRAs.

The effect of uncertainties is overestimation or underestimation of the actual cancer risk or HI. In general, the risk assessment process is based on use of conservative (health-protective) assumptions that, when combined, are intended to overestimate the actual risk. However, a small possibility exists that risks were underestimated.

The remainder of this discussion focuses on the following site-specific uncertainties associated with this HHRA:

- Extrapolation of exposure and risk from entire EUs to individual back yards
- The influence of metals in soil at ambient levels on health risks estimates
- Use of soil gas sampling results for characterizing risks from subsurface vapor intrusion to indoor air
- Use of the last four events of monitoring well sample results per chemical and per well on estimates of groundwater risk
- Exclusion of composite sample results from health risk estimates for soil
- Use of a total chromium approach that assumes a one-to-six ratio of hexavalent-to-trivalent chromium to estimate risks from chromium exposure
- Lack of risk estimates for inhalation exposure for COPCs lacking inhalation toxicity criteria
- Elevated detection limits for soil, groundwater, and soil gas samples
- Exclusion of potential mutagenic effects from cancer risk estimates
- Use of data from 0 to 2 feet bgs to represent surface soil

C10.1 EXTRAPOLATION OF RISKS AND EXPOSURES FROM ENTIRE EUS TO INDIVIDUAL BACKYARDS

As discussed in the RI report (see Section 1.4.3), the distribution of contaminants in soil at Site 12 is expected to be heterogeneous. This heterogeneity results from the historical placement, release, and transport of contaminants at the site and redistribution of the contaminants from soil grading and excavation during site development. The majority of individual back yards have not been sampled at Site 12, except for back yards within the SWDAs. The HHRA assumed that soil-related exposures, risks, and hazards based on EU-wide calculations are representative of the exposures, risks, and hazards for individual back yards within a particular

EU. This assumption may result in a moderate to large amount of uncertainty on the HHRA results, as discussed below.

Soil data IR Site 12 were grouped by EI and AOI, and COPC-specific EPCs were calculated based on soil samples collected throughout an entire EU (or AOI). The soil EPCs are calculated using conservative, regulator-recommended statistical procedures designed to produce conservative estimates, with 95 percent confidence, of the mean concentration. This approach assumes that potential current and future exposure occurs, on average, throughout an entire EU or AOI. Nonetheless, it is acknowledged that the EPCs are based on a range of sample-specific analytical results, some of which exceed, while others are less than, the calculated EPCs. Receptors exposed in individual back yards located currently or in the future at locations with COPC-specific soil concentrations that differ from the EU-wide EPCs will necessarily have "actual" risks and hazards that differ (either exceed or are less than) the EU-wide COPC-specific risks and hazards calculated for and discussed in the HHRA.

The distributions of the concentration of different COPCs are not all the same. Therefore, at specific locations (for example, individual back yards) the concentrations of some COPCs may be greater than or less than EU-wide EPCs for the same COPCs. As a result, the cumulative risk or hazard at individual backyards may be greater than or less than cumulative risks and hazards calculated based on EU-wide EPCs. Areas of localized, elevated contaminant concentrations (that is "hot spots) are discussed in Sections 4.3.15 and 4.4.12 of the RI report; these areas are the most likely locations where current or future individual back yards may have actual risks and hazards that exceed risks and hazards estimated in the HHRA. The number of areas with localized, elevated contaminant concentrations is limited at Site 12; therefore, the number of locations where current or future individual back yards may have actual risks and hazards that exceed risks and hazards estimated in the HHRA is limited. Locations identified with localized, elevated contaminant concentrations are assessed separately in the RI to determine whether additional evaluation of these locations is warranted in the feasibility study (FS) for IR Site 12, regardless of whether the HHRA identifies COCs for the EUs associated with these locations.

Finally, it should be noted that the discussion above regarding current and potential future residents exposed in individual back yards also applies to other receptors (such as future commercial/industrial workers or future recreational users) who may be exposed at specific locations at an EU or AOI rather than throughout an entire EU (or AOI).

C10.2 RISKS FROM EXPOSURE TO METALS IN SOIL AND GROUNDWATER AT AMBIENT LEVELS

The HHRA included an assessment of total risk in addition to site risk to evaluate the contribution of ambient concentrations of metals at NAVSTA TI to health risk estimates for IR Site 12. The specific methods used to calculate total and site risks are provided in Section C8.0. The evaluation of total risk included all chemicals, regardless of ambient concentrations, whereas estimates of site risks excluded those metals for which site concentrations do not exceed ambient concentrations for NAVSTA TI. As discussed in

Section C9.0, the results of the site risk evaluation are used to characterize risks and identify COCs for IR Site 12.

Differences between risk and hazard results for total and site risk results are attributable to risks and hazards associated with ambient levels of metals at NAVSTA TI. Attachment C26 presents risk estimates based on exposure to ambient levels of metals in soil and groundwater at NAVSTA TI. The methods used to estimate ambient risks are the same as those used to estimate site risks. Risks were estimated for residential, commercial/industrial, recreational, and construction worker scenarios, for the same soil and groundwater exposure pathways included in the estimate of site risks. Similarly, EPCs for ambient levels of metals at NAVSTA TI were calculated using the same methods used to calculate EPCs for site COPCs; that is, 95UCL concentrations were used to represent ambient levels of metals. Analytical data for ambient metals were based on PRC (1996) and Tetra Tech (2001).

Tables C-50A, C-50B, and C-50C summarize the risks associated with ambient metals by exposure pathway, exposure medium, and receptor. For exposure to ambient levels of metals in soil, cancer risks range from 2E-06 for the construction worker scenario to 1E-05 for the residential scenario based on EPA criteria. Based on Cal/EPA criteria, cancer risks range from 6E-06 for the construction worker scenario to 9E-05 for the residential scenario. For all scenarios, cancer risks from exposure to ambient levels of metals in soil exceed the point of departure for cancer risks of 1E-06, but are within the EPA risk management range of 1E-06 to 1E-04. For the residential scenario, the cancer risk from exposure to ambient levels of metals based on Cal/EPA criteria is near the upper end of the risk management range. In all cases, exposure to ambient levels of arsenic in soil contributes nearly all of the cancer risk estimates for ambient metals.

Noncancer HIs for exposure to ambient levels of metals in soil range from 0.1 for the commercial/industrial scenario to 3 for the construction worker scenario. The highest segregated HI by target organ for the construction worker scenario is 2; most of the HI estimate is associated with ambient levels of manganese in soil. For the residential scenario, the noncancer HI associated with exposure to ambient metals is 2; however, the highest segregated HI by target organ for the residential scenario is 1.

This evaluation shows that the cancer risks and HIs associated with exposure to metals present at ambient levels, particularly with ambient levels of arsenic in soil, are relatively significant. That is, ambient levels of metals at NAVSTA TI are associated with cancer risks above the point of departure for all scenarios and are associated with cancer risks approaching the upper end of the risk management range for the residential scenario when Cal/EPA criteria are used for the evaluation. The characterization of risks detailed in Section C9.0 shows that for those EUs and AOIs for which arsenic was identified as a COC for soil, the percent of the cumulative risk associated with arsenic is high, and in most cases makes up 90 to 99 percent of the overall site cancer risk estimate for soil. In those cases, the majority of the site risk estimate for arsenic is attributable to ambient levels of arsenic in soil at NAVSTA TI.

The risk characterization results for the construction worker scenario shows that for those EUs and AOIs for which manganese was identified as a COC for soil, the COC-specific HI for

manganese is 2. The chemical-specific HI associated with construction worker exposure to ambient levels of manganese is also 2, indicating that the HI estimate for manganese is attributable to ambient levels of manganese in soil at NAVSTA TI.

Risks from exposure to ambient levels of metals in groundwater were evaluated for the construction worker scenario, which is the only scenario for which complete exposure pathways for metals in groundwater were identified. The cancer risk for the construction worker scenario for ambient levels of metals in groundwater is 7E-08 based on EPA criteria and 5E-07 based on Cal/EPA criteria. The noncancer HI associated with exposure to ambient metals in groundwater is 0.3. The risks and hazards associated with ambient levels in metals in groundwater are below the point of departure and below the threshold HI.

Figures 9-1 through 9-5 of the RI report show, in graphical format, comparisons of the site risk and HI results for soil for each EU and AOI to the ambient risk and HI results for soil. Comparisons of site risk and HI results to ambient risks and HIs for groundwater were not made because the ambient risk and HI associated with groundwater is not considered significant. The portion of potential health risks that is attributable to ambient levels of metals in soil at IR Site 12 are discussed further in Section 9.0 of the RI report with respect to RI conclusions and recommendations for each EU and AOI.

C10.3 USE OF SOIL GAS RESULTS FOR CHARACTERIZING RISKS FOR VAPOR INTRUSION

The original methodology for the HHRA, established as part of the RI work plan for IR Site 12 (SulTech 2006), involved use of soil and groundwater analytical data to estimate health risks from subsurface vapor intrusion to indoor air. Subsequent to completion of the RI work plan, a soil gas investigation was completed for IR Site 12 to address the BCT's concerns that use of soil data to evaluate vapor intrusion was not acceptable (SulTech 2009). This concern was based on EPA (2002) and DTSC (2011b) guidance for evaluation of the inhalation exposure pathway from subsurface vapor intrusion. The BCT requested that soil gas data be collected at IR Site 12 to more accurately estimate potential indoor air concentrations from subsurface vapors and more accurately estimate inhalation risks in the HHRA from vapor intrusion (SulTech 2009).

The soil gas investigation for the HHRA was completed in late 2008, and results of the investigation were incorporated into the health risk estimates presented in Section C9.0. DTSC (2011b) guidance for evaluation of subsurface vapor intrusion into indoor air recommends that risks from vapor intrusion be quantified using both soil gas and groundwater data to see which provides the greater health threat; if the media are in equilibrium, then the associated vapor intrusion risk should be the same. Use of both soil gas and groundwater data is also recommended because the soil gas investigation for IR Site 12 was limited to a single sampling event, and may not account for seasonal or temporal variations. However, contemporaneous groundwater data were not collected during the 2008 soil gas investigation for IR Site 12. Rather, the HHRA groundwater data set for IR Site 12 consists of a mix of samples collected between 1992 and 2010. In addition, sample locations for groundwater data evaluated in the HHRA are generally not collocated with soil gas sample locations at IR Site 12. This lack of

collocation occurs because the objective of the soil gas investigation was to confirm volatile detections in bulk soil data, rather than in groundwater data (SulTech 2009). In addition, no soil gas plumes (that is, no subsurface vapor sources) were identified for IR Site 12 (SulTech 2009). For these reasons, health risks from groundwater vapor intrusion were evaluated as part of an uncertainty analysis; lack of contemporaneous, collocated groundwater data limits the usefulness of comparing risk results based on soil gas data with results based on groundwater data. Attachment C31 presents the groundwater vapor intrusion evaluation for IR Site 12; the results of the evaluation show that exclusion of groundwater data from the vapor intrusion risk evaluation does not result in an underestimate of risks for vapor intrusion.

C10.4 GROUNDWATER DATA USED FOR RISK ESTIMATES

Risk estimates for exposure to groundwater, evaluated for the construction worker scenario, were based on groundwater analytical results from the four most recent sampling events on a per-well and per-chemical basis. Use of this approach is conservative because some groundwater wells and some chemicals have been excluded from recent monitoring and analysis because screening criteria are no longer exceeded.

Arsenic was the only chemical identified in the HHRA as a COC for groundwater based on Cal/EPA criteria. Arsenic was identified as a groundwater COC for GW-S1, GW-S2, GW-S4, and GW-S5. Data for groundwater were reviewed to evaluate whether risk results for arsenic were based on recent monitoring results or historical data. As indicated in Section C4.2, the June 2010 sampling event was the most recent event included in the groundwater data set evaluated in this HHRA. For arsenic, the most recent groundwater analytical data included in the HHRA were data collected in December 2009; these results were used in the health risk estimates for arsenic in GW-S2, GW-S4, and GW-S5. Therefore, risk estimates for construction worker exposure to arsenic at these exposure areas are based on relatively recent measurements of arsenic and are likely reflective of current conditions.

Risk estimates for arsenic at GW-S1, however, are based on historical data. The most recent sample for arsenic in groundwater at GW-S1 was collected in October 2001; no sampling has occurred for any monitoring wells at GW-S1 since October 2001 because routine monitoring prior to October 2001 indicated that monitoring criteria were not exceeded. In 2007, a non-time-critical removal action (NTCRA) was conducted at SWDA 1231/1233, which is located within GW-S1. Arsenic concentrations in groundwater may have decreased in GW-S1 as the result of the removal of contaminated soil as part of this NTCRA. To the extent that arsenic concentrations in groundwater at GW-S1 have decreased since 2001, the risk estimates for construction worker exposure to arsenic at GW-S1 may overestimate actual risks. It should also be noted that the assumptions used to estimate exposures by construction workers to groundwater contaminants are very conservative. Specifically, the exposures assume that an exposed surface area of 5,700 per square centimeter (cm^2) (based on head, hands, forearms, and lower legs) is available for dermal contact with groundwater for 8 hours/day, 250 days/year for an entire year. It is unlikely that any construction worker would regularly have this much dermal contact with groundwater. Dewatering in construction trenches is a common and recommended procedure and the regular build-up of a sizeable amount of groundwater in a construction trench is unlikely to be tolerated. As a result, risk estimates for construction

worker exposure to arsenic at GW-S1 may overestimate actual risks based the assumed exposure assumptions in addition to the assumed arsenic concentration in groundwater.

C10.5 EXCLUSION OF COMPOSITE SAMPLES FROM RISK ESTIMATES

As discussed in Section C4.2, analytical data from composite samples of soil were excluded from the HHRA. Composite samples were collected for soil at EU 1, EU 5, EU 12, AOI 1248, and AOI 1254. Discrete data from grab samples of soil were also collected for these EUs. The analytical data used in the HHRA for IR Site 12 were statistically analyzed to develop EPCs. In addition, the analytical data for each EU and AOI were statistically compared with ambient concentrations for NAVSTA TI. Data obtained from composite samples at IR Site 12 were excluded from the HHRA because information about sample variability, important in statistical analyses, is lost in composite samples.

Of the five exposure areas for which composite samples are available, composite samples compose the minority of soil samples, as shown below:

- For EU 1, 10 of 122 soil samples collected (approximately 8 percent) are composite samples.
- For EU 5, 37 of 350 soil samples collected (approximately 11 percent) are composite samples.
- For EU 12, 5 of 170 soil samples collected (approximately 3 percent) are composite samples.
- For AOI 1248, 23 of 72 soil samples collected (approximately 32 percent) are composite samples.
- For AOI 1254, 52 of 142 soil samples collected (approximately 37 percent) are composite samples.

Analytical results for composite samples are provided in Appendix I. Exclusion of composite samples from the HHRA may result in an underestimate of risk for those EUs and AOIs for which detected results from composite sample results are higher than detected results from discrete samples. Section 4.0 of the RI report includes a sample-by-sample comparison of composite sample results with residential RBCs to ensure that composite sample results are addressed; as shown in Section 4.0, composite sample results indicate the presence of localized contamination at AOI 1254.

C10.6 RISK ESTIMATES FOR CHROMIUM

As discussed in Section C7.3, valence-state specific analytical data are not available for chromium in soil at IR Site 12. For purposes of assessing toxicity from exposure to chromium, chromium results were assumed to consist of a one-to-six ratio of hexavalent-to-trivalent chromium, and the IUR developed for total chromium in EPA (2009c) was used to estimate health risks from inhalation exposure to chromium. Hexavalent chromium is considered

carcinogenic, especially for the inhalation route of exposure, while trivalent chromium is associated only with noncarcinogenic effects. The IUR developed in EPA (2009c) for total chromium is similarly calculated based on a one-to-six ratio of hexavalent-to-trivalent chromium. Although valence-state specific data for chromium are not available, previous historical activities at IR Site 12, described in Section 1.2 of the RI report, do not indicate activities associated with hexavalent chromium releases.

Using this approach, chromium was identified as a COC in soil for the construction worker scenario for all exposure areas where site concentrations of chromium were statistically found to exceed ambient concentrations. Chromium was not identified as a COC for soil for the current or future residential scenarios for any exposure area. Although a residential scenario generally represents the greatest potential for exposure to site chemicals, inhalation exposure to particulate chemicals in soil is highest for the construction worker for this HHRA because of the PEF used to estimate particulate concentrations in ambient air. Specifically, a PEF of 1.0 x 10^6 m^3/kg (DTSC 2011a) was used to estimate airborne particulate concentrations for the construction worker scenario, while a PEF of 1.36 x 10^9 m^3/kg (EPA 2011a) was used for all other scenarios evaluated in the HHRA.

The PEF for the construction worker scenario is approximately 1,000 times higher than the PEF used to evaluate residential, commercial/industrial, and recreational exposures (the reciprocal of the PEF value is used to calculate risks). Although increased particulate emissions are expected during construction activities, the HHRA assumes that the increased emissions occur continually without cessation through the entire duration of construction-related activities. Specifically, inhalation risk estimates for the construction worker assume higher levels of particulate emissions for 8 hours per day, 250 days per year, for an entire year (SulTech 2006). The assumptions used to estimate particulate exposures for the construction worker are conservative, and when coupled with the assumption that one-seventh of the chromium in soil throughout IR Site 12 is hexavalent chromium, are likely to result in overestimates of inhalation health risks for chromium for the construction worker scenario.

In summary, the cancer risks associated with hexavalent chromium (and, in turn, total cancer risks) may be overestimated if the proportion of hexavalent chromium is less than one-seventh of the total (as assumed in the HHRA). In contrast, the cancer risks associated with hexavalent chromium may be underestimated if the proportion of hexavalent chromium is greater than one-seventh of the total. The Navy intends to collect a limited number of samples for chromium in soil for speciation analysis. Those samples will be collected at locations where the highest total chromium concentrations have been measured. The results of the speciation analysis can be used to refine the results of the HHRA as part of a subsequent project document, such as the FS for IR Site 12.

C10.7 LACK OF INHALATION TOXICITY CRITERIA FOR SOME COPCS

As discussed in Section C7.1, toxicity criteria are not available for the inhalation exposure route for some COPCs. EPA RAGS Part F generally does not support simple route-to-route extrapolations (that is, use of oral toxicity criteria to evaluate inhalation exposures) because

risks and hazards may be misrepresented when data from one route are substituted for another without any consideration of the pharmacokinetic differences between the routes (EPA 2009a). Therefore, route extrapolation was not used to evaluate inhalation exposures for COPCs lacking inhalation toxicity criteria.

This approach may result in an underestimate of health risks for the inhalation route of exposure; however, the level of uncertainty is likely to be low. Of the 107 chemicals identified as COPCs at IR Site 12 (based on all 25 exposure areas), 35 of the COPCs lack inhalation toxicity criteria. Of these 35 chemicals, two chemicals are VOCs (1,3,5-trimethylbenzene and cis-1,2-dichloroethene).

1,3,5-Trimethylbenzene was detected in one of 54 soil samples at EU 15 and in two of 39 soil samples at EU 17. The maximum detected concentration of 1,3,5-trimethylbenzene between both EUs is 0.003 mg/kg, which is an estimated concentration below the laboratory reporting limit. Cis-1,2-dichloroethene was detected in one of 39 soil samples at EU 16 and in one of 62 soil samples at EU 19. The maximum detected concentration of cis-1,2-dichloroethene between both of these EUs is 0.007 mg/kg. Although 1,3,5-trimethylbenzene and cis-1,2-dichloroethene were detected in samples of soil, detections were minimal and neither chemical was detected in samples of soil gas (including soil gas samples collocated or located near the locations where these two chemicals were detected in soil), indicating that vapor-phase concentrations of these chemicals is minimal to negligible. Likewise, inhalation exposure to these chemicals is likely to be minimal to negligible.

The remaining 33 chemicals are metals, pesticides, SVOCs, and PAHs. Outdoor inhalation exposure would be estimated using chemical-specific soil-to-outdoor air VF for a few these 33 chemicals (except metals). Outdoor inhalation exposure would be estimated using a soil-to-outdoor air PEF for most of these chemicals. For chemicals that are only semivolatile (that is, semivolatile chemicals for which a soil-to-outdoor air VF is used to estimate outdoor inhalation exposure) and nonvolatile chemicals (that is, chemicals for which a PEF is used to estimate outdoor inhalation exposure) the contribution of the inhalation route of exposure to health risks is negligible compared with the oral and dermal routes of exposure. In summary, the uncertainty associated with the lack of inhalation toxicity criteria for some COPCs is expected to be small and the impact on the HHRA results is likely to be minimal to negligible.

C10.8 ELEVATED DETECTION LIMITS FOR NONDETECTED CHEMICALS

Analytical detection limits were elevated for nondetected compounds in some samples of soil, groundwater, and soil gas. Specifically, for some chemicals that were not detected in samples of soil, groundwater, and soil gas, sample-specific detection limits exceeded RBCs established for the IR Site 12 HHRA. Nondetected results with elevated detection limits may cause an underestimate of health risks. Risks may be underestimated if a chemical is consistently or frequently not detected and detection limits are consistently greater than RBCs, because the chemical may actually be present at concentrations associated with health risk.

For this evaluation, the following criteria were selected to assess whether nondetected results with elevated detection limits could result in an underestimate of health risks: (1) nondetected results comprise more than 50 percent of the samples for a given COPC, and (2) of the nondetected samples, 50 percent or greater of nondetected results exceed RBCs for IR Site 12. The following sections provide an evaluation of chemicals with elevated detection limits that meet these criteria.

In general, sample results for which detection limits were elevated are unlikely to result in underestimation of health risks because a large number of samples were collected at IR Site 12, which reduces the uncertainty associated with characterization of chemical concentrations at IR Site 12. In addition, in most cases, sampling data were biased toward areas of potential impacts; that is, samples tended to be collected from locations with known contamination.

C10.8.1 Soil

Table C-53 shows the number of chemical-specific results for soil samples with detection limits greater than the respective residential soil RBCs. The following chemicals have nondetected sample results for soil that meet the criteria discussed in Section C10.8:

- Arolcor-1260 at AOI 1254. Elevated detection limits for nondetected samples of Aroclor-1260 at this exposure area may result in an underestimate of risks; however, risk calculations based on detected results indicate that Aroclor-1260 is a COC. An additional evaluation of Aroclor results is provided in Table C-54. This table compares Aroclor concentrations to the NAVSTA TI action level for PCBs in soil of 1 mg/kg. To complete this comparison, total PCB concentrations for each soil sample were calculated by summing detected concentrations of Aroclors for each sample. This comparison was completed to help evaluate the exposure areas where Aroclors were identified as COCs and assess whether concentrations of Aroclors in these areas also exceed the action level for PCBs.
- BAP at EU 6, EU 8, EU 14, EU 16, EU 19, AOI 1201/1203/1220, and AOI Mariner Drive. Elevated detection limits for nondetected samples of BAP at these exposure areas may result in an underestimate of risks; however, risk calculations based on detected samples indicate that BAP is a COC for these EUs and AOIs. In addition, samples for carcinogenic PAHs, including BAP, are evaluated in Section 4.0 of the RI as BAP (EQ) concentrations, and compared with the NAVSTA TI action level for BAP (EQ) to identify areas that may warrant further evaluation.

- Dibenz(a,h)anthracene at EU 6, EU 8, EU 15, EU 16, EU 19, AOI 1201/1203/1220, AOI 1248, and AOI Mariner Drive. Dibenz(a,h)anthracene was identified as a COC at two of these eight exposure areas (EU 19 and AOI Mariner Drive); elevated detection limits for nondetected samples of dibenz(a,h)anthracene at these two exposure areas are unlikely to result in an underestimate of risks. For the remaining six exposure areas, elevated detection limits for nondetected samples of dibenz(a,h)anthracene may result in an underestimate of risks; however, this issue is unlikely to affect whether remedial action is needed for PAHs because carcinogenic PAHs are evaluated using a BAP (EQ) approach and compared with the NAVSTA TI action level for BAP (EQ) of 0.62 mg/kg to identify areas that may warrant further evaluation (see Sections 4.1 and 4.2 of the RI report).

- Dieldrin at EU 8. Three samples were analyzed for dieldrin at EU 8; one of the three samples has an elevated detection limit. Dieldrin was not identified as a COC for this EU. It is possible that risks for this EU are underestimated for dieldrin, based on the limited sampling and the elevated detection limit in one of the nondetected samples.

C10.8.2 Groundwater

Table C-55 shows the number of chemical-specific results for groundwater samples with detection limits greater than the respective RBCs for groundwater. RBCs for groundwater are based on the construction worker scenario, which is the only scenario for which groundwater exposure pathways were identified as potentially complete for IR Site 12.

Aroclor-1260 is the only chemical in groundwater for which nondetected sample results for groundwater meet the criteria discussed in Section C10.8. Elevated detection limits for nondetected results of Aroclor-1260 occurred for samples collected at all five source-based exposure areas for groundwater, as well as in the nonsource exposure area. Across all of the groundwater exposure areas, Aroclor-1260 was detected in only one sample (96 total samples were analyzed for Aroclor-1260). The percentage of nondetected results with elevated detection limits for Aroclor-1260 is between 50 and 64 percent for five of the groundwater exposure areas, but is 100 percent for GW-S4. It is unlikely, however, that risks from construction worker exposure to Aroclor-1260 in groundwater are underestimated. Except for GW-S4, detection limits for Aroclor-1260 were sufficient in 39 to 50 percent of groundwater samples analyzed for Aroclor-1260; however, Arcolor-1260 was only detected in one sample. Therefore, the occurrence of Aroclor-1260 in groundwater at IR Site 12 is minimal, and the likelihood of exposure during construction activities is likewise minimal.

C10.8.3 Soil Gas

Table C-56 shows the number of chemical-specific results for soil gas samples with detection limits greater than respective residential RBCs for soil gas. The occurrence of elevated detection limits in soil gas samples for IR Site 12 is minimal, and the criteria discussed in Section C10.8 were not met for any chemicals.

C10.9 MUTAGENIC MODE OF ACTION

Evaluation of potential cancer risks from the mutagenic mode of action (MOA) was excluded from the HHRA (SulTech 2006; Tetra Tech 2009). Chemicals with a mutagenic MOA may cause irreversible damage to deoxyribonucleic acid (DNA), and would exhibit a greater effect on DNA in early-life versus later-life exposure. EPA (2005) provides guidelines for evaluating cancer risks for mutagens; these guidelines are applicable to exposure scenarios such as residential and recreational, for which potential receptors include children that may be exposed to mutagens in early life.

Seven PAHs detected at IR Site 12 are associated with a mutagenic MOA: the carcinogenic PAHs benzo(a)anthracene, BAP, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. A review of EPA RSLs for residential land use for these PAHs shows that incorporation of the mutagenic MOA results in RSLs that are approximately four times lower than RSLs that are calculated by excluding the mutagenic MOA. By this comparison, a general conclusion can be drawn that the residential cancer risk estimates for IR Site 12 are four times lower than residential cancer risks that would be estimated if the mutagenic MOA were incorporated into risk estimates. Although risks for carcinogenic PAHs may be underestimated, remedial action needs for carcinogenic PAHs are based on comparison to the NAVSTA TI action level for BAP (EQ); the action level for BAP (EQ) is a higher concentration than the risk-based concentration for BAP (EQ) (see Section 4.2.1.3 of the RI report). As indicated in Section 4.0 of the RI report, for most of the exposure areas, BAP (EQ) concentrations for only one or two samples exceed the action level.

Hexavalent chromium is also considered mutagenic. Because valence-state specific data are not available for chromium, the HHRA assumed that all chromium detected at IR Site 12 consists of a one-to-six ratio of hexavalent-to-trivalent chromium. Review of EPA soil RSLs for residential land use shows incorporation of the mutagenic MOA results in RSLs that are approximately 25 percent lower than RSLs that are calculated by excluding the mutagenic MOA. This difference would result in risk estimates that are 25 percent higher for hexavalent chromium if the mutagenic MOA is incorporated into risk calculation. However, because total chromium is assumed to consist of a one-to-six ratio of hexavalent-to-trivalent chromium, and the mutagenic MOA is not applicable to trivalent chromium, the effect of the mutagenic MOA on the RBC is significantly less than 25 percent. As a result, health risks from exposure to total chromium at IR Site 12 may only be slightly underestimated based on exclusion of the mutagenic MOA from risk estimates.

C10.10 USE OF SAMPLE RESULTS FROM 0 TO 2 FEET BGS TO REPRESENT SURFACE SOIL

As discussed in Section C4.3.1, some uncertainty may be associated with the use of soil sample results from the 0 to 2 feet bgs depth interval, rather than the 0 to 0.5 feet bgs interval, to estimate health risks from exposure to surface soil. In general, the preferred depth interval for evaluating surface soil exposure is 0 to 0.5 feet bgs, which is generally a more realistic depth interval for exposure to current site conditions and future conditions with minimal soil disturbance. The inclusion of deeper soils (0.5 to 2 feet bgs) in the surface soil depth interval may result in an underestimation of health risks if chemical concentrations are higher from 0.5 to

2 feet bgs than from 0 to 0.5 feet bgs. Conversely, the inclusion of deeper soils (0.5 to 2 feet bgs) in the surface soil depth interval may result in an overestimation of health risks if chemical concentrations are lower from 0.5 to 2 feet bgs than from 0 to 0.5 feet bgs.

To qualitatively assess the likelihood that the use of 0 to 2 feet bgs data to represent surface soil in the HHRA might result in an underestimation of health risks for surface soil, the following comparisons were completed:

For each exposure area (EU and AOI), maximum detected concentrations for soil data collected from 0 to 0.5 feet bgs were compared with respective residential RBCs calculated for IR Site 12. For purposes of this evaluation, residential RBCs based on State of California toxicity criteria were used.

For each exposure area, maximum detected concentrations for soil data collected from 0.5 to 2 feet bgs were compared with respective residential RBCs (based on State of California toxicity criteria) calculated for IR Site 12.

Table C-57 summarizes the results of these comparisons for each exposure area. The chemicals shown on Table C-57 are limited to those for which maximum detected concentrations exceed respective residential RBCs in either the 0 to 0.5 feet bgs or the 0.5 to 2 feet bgs depth interval. Chemicals for which maximum detected concentrations do not exceed RBCs in either interval are not included in this evaluation because these chemicals are not as likely to contribute significantly to cumulative risk results as chemicals that exceed RBCs. The following conclusions can be drawn from these comparisons:

For chemicals that are detected in both the 0 to 0.5 feet bgs and 0.5 to 2 feet bgs depth intervals and that exceed RBCs in both intervals, maximum concentrations do not differ significantly except for a few chemicals. That is, in most cases, the difference between the ratio of the maximum concentration to the RBC in the 0 to 0.5 feet bgs interval and the ratio of the maximum concentration to the RBC in the 0.5 to 2 feet bgs interval is less than a factor of 2. In these cases, maximum concentrations in both depth intervals are considered similar because they exceed the RBC by a similar degree. The difference is greater than a factor of 5 in only a few instances:

- EU 1, EU 17, EU 19, AOI 1254, AOI Mariner Drive: BAP
- EU 9: Aroclor-1260

In each of these cases, the above-listed chemicals were identified as COCs in surface soil (0 to 2 feet bgs) for the exposure area indicated. As a result, the use of the 0 to 2 feet bgs interval to represent surface soil is not likely to significantly underestimate risks for these chemicals.

In a few instances the ratio of the maximum concentration to the RBC in the 0.5 to 2 feet bgs interval exceeds the ratio of the maximum concentration to the RBC in the 0 to 0.5 feet bgs interval by more than a factor of 5:

- EU 9: BAP, benzo(k)fluoranthene
- AOI 1201/1203/1220: 2,3,7,8-TCDD TEQ
- AOI Halyburton/Bigelow Court: Aroclor-1260

In these instances, the above-listed chemicals were identified as COCs in surface soil for the exposure area indicated. As a result, inclusion of the 0.5 to 2 feet bgs depth interval in the 0 to 2 feet bgs surface soil interval may contribute to an overestimate of potential risks for these exposure areas.

For chemicals that are detected in both the 0 to 0.5 feet bgs and 0.5 to 2 feet bgs depth intervals but that exceed RBCs only in the 0 to 0.5 feet bgs interval, risks for surface soil may be potentially underestimated. For roughly half of the cases where this occurs ("<1" listed in Table C-57 as the ratio of the maximum concentration from 0.5 to 2 feet bgs to the residential RBC), the ratio of the maximum concentration to the RBC in the 0 to 0.5 interval is less than a factor of 2. In other words, in these cases, the maximum concentration is not significantly higher than the RBC, and it is likely that the EPCs for the 0 to 0.5 feet bgs interval, based on 95UCL concentrations, may not exceed RBCs.

For the other half of the cases, where the ratio of the maximum concentration in the 0 to 0.5 feet bgs interval to the residential RBC exceeds 2, risks are more likely to be underestimated. The exposure areas and chemicals for which this occurs are summarized below:

Exposure Area	Antimony	Lead	2,3,7,8-TCDD TEQ	BAA	BAP	BBF	BKF	DAHA	ICDP
EU 3					**X**				
EU 4	X	X							
EU 6	X					X			
EU 8	X								
EU 9	X	**X**							
EU 10		X							
EU 11							X		
EU 12				X			X	X	
EU 13					**X**				
EU 16			**X**						
EU 17			**X**	X		X	X	X	X
EU 18					**X**				
EU 19				X		X	X	**X**	X
AOI 1201/1203/1220		**X**							
AOI 1246		**X**							
AOI Halyburton/ Bigelow Court		X							

Notes:

AOI	Area of interest	DAHA	Dibenz(a,h)anthracene
BAA	Benzo(a)anthracene	EU	Exposure unit
BAP	Benzo(a)pyrene	HHRA	Human health risk assessment
BBF	Benzo(b)fluoranthene	ICDP	Indeno(1,2,3-cd)pyrene

bgs	Below ground surface	RBC	Risk-based concentration
BLF	Benzo(k)fluoranthene	TCDD	Tetrachlorodibenzo-p-dioxin
COC	Chemical of concern	TEQ	Toxic equivalent quotient

X Maximum concentration in 0 to 0.5 feet bgs interval exceeds residential RBC by more than a factor of 2, and maximum concentration in 0.5 to 2 feet bgs interval does not exceed RBC.

Boldface X represents chemicals that were identified as COCs for surface soil (0 to 2 feet bgs) in the HHRA.

Some of these chemicals (where the "X" is shown in **boldface**) were identified as COCs for surface soil; the use of 0 to 2 feet bgs to represent surface soil in the HHRA is not likely to significantly underestimate risks for these chemicals.

For the remaining chemicals (antimony, lead, PAHs), risks for surface soil may potentially be underestimated. However, findings from evaluation of the nature and extent of contamination (see Section 4.0 of the RI report) indicate that this is unlikely to be the case for PAHs because BAP (EQ) concentrations are below the NAVSTA TI action level for BAP (EQ) for most locations.

manner. Even among adults of the same population, there may be considerable individual variation in factors that affect exposure.

14.3.10 Interactions Among Chemicals

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
20	aquatic habitat assessment	Section 2.5.2	Final Remedial Investigation Offshore Sediments Operable Unit, Naval Station treasure Island, San Francisco, California, Volume I (Text, Tables, Figures). Tetra Tech EM Inc. December 28, 2001. Section 14.4.

14.4 RISK MANAGEMENT

The risk assessment is intended to determine whether the chemical concentrations likely to be encountered by organisms are higher than the levels identified as causing significant adverse effects. While a number of chemicals in the offshore areas of NAVSTA TI exceeded the greater of the ER -L or ambient, none were found at high concentrations or were widely distributed. Overall, HIs based on ER-Ls were less than 10 and ER-Ms were rarely exceeded.

Overall, sediment concentrations were similar to ambient concentrations and the potential for incremental risk to representative species from chemicals in sediment attributable to activities or releases at NAVSTA TI, was considered minimal. Although adverse effects on some aquatic invertebrates may result from maximum levels of mercury, nickel, selenium, and total DDTs as indicated by HIs greater than one and toxicity results, low survival may also be the result of high percent fines. Low survival (< 68 percent) was observed in 74 percent of the bioassays when fines was greater than 80 percent. Low percent survival was also observed for the Paradise Cove reference area bioassays where fines was near 100 percent. Because nickel and total DDTs were only slightly above ambient, these chemicals were not considered to contribute significantly to the overall incremental risk. In area E, mercury and lead may also cause a small incremental risk to avian receptors.

Based on the degree of risk identified in this risk assessment, no further investigation of the offshore sediment OU is recommended. The conclusions of the risk assessment are summarized below:

- Area A - No further investigation or action is recommended for Area A. Incremental risk to benthic invertebrate receptors from exposure to sediments was considered minimal. Additionally, chemical concentrations do not suggest incremental risk to higher trophic level receptors from either ingestion of contaminated prey or direct exposure to the sediment.

- Area B - No further investigation or action is recommended for Area B. Incremental risk to benthic invertebrate receptors from exposure to sediments was considered minimal. Selenium at locations B8 and B11, although equal to the ER-M, is only slightly elevated above ambient levels. In porewater, HIs were elevated due to the contribution of mercury; however, mercury was not detected at elevated levels in sediment. Chemical concentrations do not suggest incremental risk to higher trophic level receptors from either ingestion of contaminated prey or direct exposure to the sediment

- Area C - No further investigation or action is recommended for Area C. Incremental risk to benthic invertebrate receptors from exposure sediments was considered minimal. Concentrations of selenium at locations C3, C4, C9, and C12, are greater than ambient sediment; however, concentrations are not substantially greater than TI and YBI background soils. The results of the food chain model indicate minimal incremental risk to avian receptors resulting from exposure to C sediments or prey.

- Area D - No further investigation or action is recommended for Area D. Based on the evaluation of the chemical and toxicity data, a small amount of risk to benthic invertebrate receptors from exposure to mercury in sediment is indicated at location D6. The results of the food chain model indicate minimal incremental risk to avian receptors resulting from exposure to area D sediments or prey.

- Area E - No further investigation or action is recommended for Area E. Based on the evaluation of the chemical and toxicity data, minimal incremental risk to benthic invertebrate receptors from exposure to mercury and selenium in sediment is indicated at locations E2, E5, and E9. The results of the food chain model, using conservative assumptions, indicate minimal incremental risk to avian receptors resulting from exposure to mercury and lead in area E sediments.

- Area G - No further investigation or action is recommended for Area G. Incremental risk to benthic invertebrate receptors from exposure to area G sediments was considered minimal. The risk to aquatic birds from exposure to area G sediments is also expected to be minimal. Overall, chemical concentrations measured in area G do not suggest an incremental risk to higher trophic level receptors from either ingestion of contaminated prey or direct exposure to the sediment.

- Skeet Range - No further investigation is recommended for the Skeet Range. Based on an evaluation of the chemical and toxicity data, risk to benthic invertebrate and vertebrate receptors from exposure to lead and total PAHs in the Clipper Cove Skeet Range was considered minimal. While lead exceeded the ER-L in several subsurface locations it was not found at high concentrations and was below ambient in all surface samples. The results of the food chain model indicate minimal incremental risk to avian receptors resulting from exposure to lead in area C and D sediments or prey. No further action is

recommended at the Skeet Range; however, possible future reuse plans may include sediment dredging. In this case, specifically, buried lead shot may resuspend and settle on the sediment surface, where it would remain as a possible source of ecological risk to foraging, diving ducks. Dregding or sediment disruption at the Skeet Range may warrant future land use controls to inhibit ecological exposure of lead shot to receptors.

In conclusion, based on the information and data evaluated as part of the offshore investigation at NAVSTA TI, the Navy does not consider chemical levels present to pose an unacceptable level of risk to aquatic and avian receptors that requires action. No further investigation or action is recommended for any of the offshore area of NAVSTA TI, with the exception that possible future sediment dredging at the Skeet Range may warrant land use controls to protect diving ducks.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
21	protective of ecological species	Section 2.5.2	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Section 3.1.3 and Table 3-3.

3.1.3 SLERA Review to Address Potential Future Uses

Based on the proposed changes to land uses during redevelopment of IR Site 12, there is a potential for ecological receptors to use areas where remedial actions to address human health risks have been implemented. It is important that the remedial goals (RGs) established through the HHRA will also be protective of ecological uses. To address this, an additional analysis of ecological risk was performed to assess whether the RGs established through the HHRA would also meet ecological risk levels, under the assumption that future site use would include suitable habitat. Three types of open space uses are proposed as part of IR Site 12 redevelopment, Northern Shoreline Park, the Wilds, and Stormwater Wetlands. Of these three types, the Stormwater Wetlands and the Wilds were identified for further risk analysis (Figure 2-8). The Northern Shoreline Park was considered an equivalent use to the analysis completed in the SLERA. Since this use and potential species had been considered in the SLERA, further evaluation was not conducted.

For each of the IR Site 12 COCs identified for soil, ecological screening levels (EcoSLs) were derived for representative birds and mammals that would be typical users of upland and marshland areas. These EcoSLs are derived using food-chain models that consider transfer of COCs to upper tropic levels (e.g., birds and mammals) through incidental ingestion of soil and through ingestion of food (forage and/or prey) that has accumulated COCs from the site. Food-chain uptake models for birds and mammals require input of species-specific exposure factors and chemical-specific bioaccumulation/bioconcentration factors. Species-specific life history factors include body weight, food, and abiotic media ingestion rates; dietary composition; and respective proportion of each dietary component. Tables 3-1 and 3-2 provide the ecological exposure assumptions and toxicity values used to derive the food-chain-based EcoSLs for the IR Site 12 COCs.

The EcoSLs were derived for representative species of the lower and upper trophic levels as follows:

- Herbivorous mammals are represented by the California ground squirrel (*Spermophilus beecheyi*).
- Insectivorous mammals are represented by the deer mouse (*Peromyscus maniculatus*).
- Carnivorous mammals are represented by the American badger (*Taxidea taxus*).
- Herbivorous birds represented by the mourning dove (*Zenaida macrocura*).
- Insectivorous birds are represented by the horned lark (*Eremophila alpestris*).
- Carnivorous birds (raptors) are represented by the red-tailed hawk (*Buteo jamaicensis*).

These receptors are common across California and are anticipated to be representative of other birds and mammals of the same feeding guild that typically forage in upland and marshland areas. Generally, the same mammal or bird toxicity information (from literature) is used irrespective of the specific species selected.

Table 3-3 provides a comparison of the EcoSLs for the IR Site 12 COCs with their respective RGs. The RGs for high molecular weight polycyclic aromatic hydrocarbons (PAHs) and dioxin toxicity equivalent (TEQ) are lower (more restrictive) than the calculated EcoSLs for

all species evaluated, such that the RGs are fully protective of ecological receptors. The table further shows that the high EcoSLs for the horned lark for polychlorinated biphenyls (PCBs) and lead are lower (more restrictive) than the established RGs. Tables 3-4 through 3-7 identify the anticipated post-excavation exposure point concentrations for total PCB and lead at depth intervals of 0-0.5 foot, 0-1 foot, 0-2 feet, 0-3 feet, 0-4 feet, and 0-6 feet for both the Wilds and Stormwater Wetlands Areas. Tables G-1 through G-4 in Appendix G show the data points and concentrations utilized to calculate the 95 percent upper confidence limit (UCL)[1] for the Wilds and Storm Water Wetlands areas. Although the lark EcoSLs for PCBs and lead are lower than the RG, the residual 95 percent UCL calculated for both COCs at both the Wilds and the Stormwater Wetlands Areas are lower than the high EcoSL after remedial action to HHRA RGs. The highest 95 percent UCL for PCBs is 0.169 milligram per kilogram (mg/kg) at both 0-0.5 foot and 0-1 foot in the Stormwater Wetlands Area and 0.265 mg/kg at 0-1 foot in the Wilds area. The highest 95 percent UCL for lead is 72.7 mg/kg at 0-0.5 foot in the Stormwater Wetlands area and 70.5 mg/kg at 0-0.5 foot in the Wilds area. Based on this analysis, implementation of remedial action to meet RAOs related to HHRA RGs for PCBs and lead will attain residual concentrations that are protective of representative ecological receptors for all open space uses at IR Site 12. All of the RGs previously established for IR Site 12 remain applicable.

[1] The 95 percent UCL is typically used to estimate exposure point concentrations for risk assessments, in accordance with CERCLA risk assessment guidance (USEPA, 1989).

TABLE 3-3

Ecological Soil Screening Levels for Chemicals of Concern at IR Site 12

Feasibility Study Addendum - IR Site 12, Former Naval Station Treasure Island, San Francisco, California

Analyte	Recommended Remedial Goal (Final FS Table 6-1)	Receptor	Receptor-specific EcoSLs (mg/kg)[a]	
			Low EcoSSL	High EcoSSL
PCBs	1.0 mg/kg	American badger	47.0	167
		Deer mouse	0.53	1.87
		Horned lark	0.090	**1.28**
		Ground squirrel	200	713
		Mourning dove	17.7	249
		Red-tailed hawk	7.40	104
High Molecular Weight PAHs	0.62 mg/kg	Soil Inverts	18	
		Mammals	**1.1**	
Dioxin TEQ (ng/kg)	12 ng/kg	American badger	137	1,371
		Deer mouse	2.8	**19.6**
		Horned lark	19.7	138
		Ground squirrel	91	913
		Mourning dove	707	7,072
		Red-tailed hawk	1,245	12,453
Lead	400 mg/kg	American badger	202	76,002
		Deer mouse	17.8	13,868
		Horned lark	0.069	**187**
		Ground squirrel	423	134,498
		Mourning dove	0.62	1,571
		Red-tailed hawk	0.015	7,110

Notes:

[a] EcoSLs for PCBs, dioxin TEQ, and lead derived using exposure assumptions and toxicity values provided in Tables 3-1 and 3-2. EcoSL for high molecular weight PAHs are from USEPA Ecological Soil Screening Levels (USEPA, 2007). Values for dioxin TEQ are expressed as ng/kg.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
22	sediment	Section 2.5.2	Installation Restoration Site 13 Offshore Sediments Record of Decision, Naval Station Treasure Island, Treasure Island, San Francisco, California. Department of the Navy. April 7, 2005. Sections 1.4 and 1.5.

The results of these two offshore investigations indicated metals, polychlorinated biphenyls (PCB), polycyclic aromatic hydrocarbons (PAH), dichlorodiphenyltrichloroethane, and other organics were the chemicals most frequently detected in sediment samples. The majority of samples where these chemicals were detected were at low concentrations when compared with the sediment screening criteria. The sample locations where these chemicals were detected were generally randomly distributed throughout Site 13 and did not identify any offshore area contaminated by onshore sources.

Two additional investigations were conducted in 2001 and 2002 to assess specific areas identified by the regulatory agencies as requiring further assessment of the offshore sediments at TI. Specifically, the regulatory agencies requested the Navy further investigate the sediments adjacent to possible onshore source areas at IR Sites 11 and 12, which may have deposited burned materials in the form of solid waste or PCB-contaminated material. Offshore samples were collected and analyzed for metals, total petroleum hydrocarbons (TPH), and PCBs. Concentrations of metals, PCBs, and TPH in the offshore sediments were found not to be elevated. These assessments indicated that no additional investigation was required.

1.4 STATUTORY DETERMINATIONS

The no action decision was made for Site 13 because the sediments do not pose an unacceptable risk to human health or the environment. Because the no action decision was made, there are no CERCLA Section 121 statutory determinations for this ROD, and a 5-year review will not be required for Site 13.

1.5 DECLARATION STATEMENT

Based on the RI evaluation of analytical data, historical information, and site inspections, the Navy, with the concurrence of the Cal/EPA DTSC and Cal/EPA Water Board, has concluded no remedial action is necessary for Site 13, Offshore Sediments, at NAVSTA TI. Furthermore, hazardous substances are not present in Site 13 sediments at concentrations above unacceptable risk levels, therefore, the 5-year review requirement of CERCLA Section 121(c) is not applicable.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
23	potential risk to aquatic receptors	Section 2.5.2	Final Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, Naval Station Treasure Island, San Francisco, California. TriEco-Tt. June 2012. Sections 7.2 through 7.2.3 and Table 7-1.

7.1.3 Results and Conclusions

Typically, a SLERA would proceed to Step 2 of the SLERA process only if high-quality habitat to support ecologically relevant ecosystems or receptors was identified in Step 1; however, the Navy agreed to the regulatory agencies' request to conduct a complete SLERA (Steps 1 and 2) even though such habitat was absent at IR Site 12. Step 2 of the SLERA indicated that the maximum concentrations of a number of COPECs at IR Site 12 pose potentially unacceptable risks to plant, invertebrate, and vertebrate receptors based on the conservative assumptions of the SLERA; however, the SLERA recommended no further action for COPECs at IR Site 12 because of the poor quality of habitat on TI. As described previously, much of IR Site 12 is paved, and the habitat is limited to opportunistic species that can adapt to high disturbance regimes. If a significant ecological habitat develops in the future as a result of changes in land use or future development, the Navy will conduct further evaluation of ecological hazard at IR Site 12.

7.2 AQUATIC HABITAT ASSESSMENT

This section discusses the potential risk to aquatic receptors. Specifically, this section addresses the potential risks discharged groundwater may have on aquatic receptors located adjacent to the shoreline at IR Site 12. As discussed in Section 1.3.6, the Navy has already completed an RI report for offshore sediments at Treasure Island, which concluded that sediments do not pose unacceptable risk to human health or the environment (Tetra Tech 2001d). In addition, the Navy and the regulatory agencies signed a no-action ROD for the offshore sediments in 2005 (Navy 2005).

7.2.1 Groundwater Results

Aquatic organisms living along the shoreline of NAVSTA TI may be exposed to contaminants if contaminated groundwater discharges to the Bay. To evaluate this potential, the Navy has been monitoring the groundwater at IR Site 12 since 1994. Based upon the monitoring results, it has been established that contamination of groundwater at IR Site 12 has resulted primarily from (1) former SWDAs, (2) petroleum associated with former USTs, and (3) past site activities. Initially the monitoring program was broad, including the sampling of up to 44 monitoring wells. Over time, with the concurrence of the BCT, the scope of the monitoring program was reduced to focus on areas that could pose a threat to aquatic receptors. Results of groundwater monitoring since 2007 indicate that two areas from IR Site 12 have the potential to impact aquatic organisms living along the shoreline of IR Site 12 (Figure 1-5). These two areas are:

- SWDA A&B – Groundwater GW-S3
- Building 1311/1313 Petroleum Area – Groundwater GW-S4

Analysis of the data from the 2007 to 2009 groundwater monitoring events is described below.

7.2.1.1 SWDA A&B

SWDA A&B is located along the shoreline in the western portion of IR Site 12. This SWDA has five groundwater monitoring wells designated for sample collection that are included in GW-S3. However, as stated in Section 1.3.13, removal actions being conducted in this area since 2007 have disrupted the schedule for continued monitoring of this SWDA. After the removal actions are complete, the Navy plans to collect additional groundwater samples from wells at SWDA A&B to evaluate its potential impact on the Bay. When all removal action activities are complete, a residual risk evaluation for the SWDAs will be addressed in the removal action completion report, the proposed plan, or FS.

7.2.1.2 Building 1311/1313 Petroleum Area

The Building 1311/1313 Petroleum Area, groundwater GW-S4, is located adjacent to the shoreline in the southwest portion of IR Site 12. Based on its proximity to the shoreline and the reported concentrations of arsenic and total TPH in groundwater, this area has the potential to impact aquatic organisms at the shoreline. Arsenic has been detected in groundwater at concentrations exceeding both the NAVSTA TI ambient concentration of 15 µg/L and the screening criterion of 36 µg/L. In 2009, arsenic concentrations ranged from 13.1 µg/L in well 12-MW20 to 172 µg/L in well 12-MW22. Also in 2009, total TPH exceeded the screening criterion of 1,400 µg/L.

Based on the concentration of arsenic and total TPH in groundwater, the site's proximity to the Bay, and the fact that groundwater flows across this site toward the Bay, groundwater fate and transport modeling was conducted for this portion of IR Site 12.

7.2.2 Groundwater Modeling

To evaluate the potential migration of chemicals to the Bay, a conservative screening-level solute transport model was developed. The modeling and analysis was based on the BIOSCREEN-AT (Neville and Karanovic 2006) solute transport model. BIOSCREEN-AT is an exact three-dimensional analytical solution for solute transport from a patch boundary condition within a semi-infinite aquifer. The model has well documented applications to risk-based corrective action analyses (EPA 1996b; American Society for Testing and Materials [ASTM] 1995, 1998). The Navy used the BIOSCREEN-AT model to estimate chemical concentrations discharged to the Bay by estimating advective attenuation between source locations and points of groundwater discharge to the Bay. For IR Site 12, only arsenic and TPH in the Building 1311/1313 Petroleum Area were evaluated using groundwater modeling. Copper, nickel, silver and zinc in groundwater were not evaluated in the groundwater modeling for the following reasons:

- For copper, where present, the concentration trend has decreased significantly since 2007 to levels below screening criteria in all but one well (12MW-17). The level in this well had dropped from 480 µg/L in 2007 to 13 µg/L in 2009. This well is within an SWDA, and the groundwater quality is expected to continue to improve as a result of the removal action.

- For nickel, the elevated results are only slightly above the screening criteria and there is no identifiable source for nickel contamination where it was detected above the screening criterion (exposure area GW-S4).
- For silver, only one elevated result occurred, and the concentration was an estimated low concentration near the detection limit.
- For zinc, only one elevated result occurred in 2007 in well 12MW-22, and the concentrations in 2008 and 2009 have since dropped to below the screening criterion.

Although arsenic and TPH concentration trends over time back to 2007 were considered, groundwater modeling was conducted using available monitoring data through December 2009. The 2010 groundwater monitoring report has not been finalized and the data are not available for use in modeling. The groundwater data collected as part of the treatability study (12-MW38-43) were not included in the modeling data set due to the different sampling objectives associated with the study and possible inconsistencies with the sampling methodology used for the basewide monitoring program. Specifically, data from monitoring well 12-MW22 were used, because these data had exhibited the highest concentrations of arsenic and TPH. This well is approximately 100 feet from the shoreline. Table 7-1 provides the results of this modeling, and Appendix O provides details of the model formulation, input data, and output of the BIOSCREEN-AT model.

The results of the BIOSCREEN-AT model are considered highly conservative estimates of potential discharge concentrations to the Bay. As depicted in Appendix O, conservative assumptions were incorporated into the estimates of concentrations at points of groundwater discharge to the Bay, including the use of infinite (that is, constant concentration) point sources, the simplified (steady-state and one-dimensional solution) formulation of the BIOSCREEN-AT model, and the absence of a wide range of attenuation processes (for example, adsorption and chemical and biological transformation reactions) applicable to the chemicals along their path of migration to the Bay. In addition to the documented conservatism associated with the modeling, considerable tidal mixing occurs near the shoreline in the groundwater, which likely results in dilution of the contaminants before they are discharged to the Bay (Tetra Tech 2002b). The results of the modeling at the shoreline show very little attenuation based on dispersion, primarily because of the monitoring well's close proximity to the shoreline and the model's assumption of a nondiminishing source.

7.2.3 Summary and Conclusions

In summary, TPH and arsenic in groundwater from the Building 1311/1313 Petroleum Area may discharge to the Bay at concentrations above the screening levels, although concentrations are likely quickly diluted to below screening criteria once they discharge. Consequently, the Navy has implemented additional investigative activities to address the TPH and arsenic in this area. This area is identified for further investigation and remedial alternatives for TPH and arsenic will be developed and evaluated in the FS. TPH and arsenic are expected to cease discharging to the Bay after the TPH is remediated from soil at the site based on the change from reducing to oxidizing conditions that is expected to occur after TPH is remediated. In the remaining areas of IR Site 12, groundwater does not pose unacceptable risks to aquatic organisms living along the shoreline because the source area concentrations in groundwater are at or below ambient or screening-level concentrations.

TABLE 7-1: GROUNDWATER MODELING RESULTS
IR Site 12 Remedial Investigation Report, NAVSTA Treasure Island, San Francisco, California

Source Location	Contaminant	Source Area Concentration in Groundwater (µg/L)	Concentration at Shoreline (µg/L)	Screening Criterion (µg/L)
12-MW22	Arsenic	172	171	36
12-MW20	Total TPH	1849	1848	1400

Notes:
µg/L Microgram per liter
TPH Total petroleum hydrocarbon

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
24	**Net Present Value Cost: $2,419,000**	Table 5	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-2.

TABLE D−2

Cost Estimate Details for Alternative S-2: Engineered Cover, Excavation

Feasibility Study Addendum - IR Site 12, Former Naval Station Treasure Island, San Francisco, California

Technology Name	Calendar Year 1	Calendar Year 2	Calendar Year 3	Calendar Year 4	Calendar Year 5	Calendar Year 6	Calendar Year 7	Calendar Year 8	Calendar Year 9	Calendar Year 10
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Capital Cost										
Remedial design, work plan, and SAP	$206,662									
LUC implementation plan	$41,975									
Excavation	$191,166									
Radiological screening	$15,000									
Establishment of radiologically controlled screening pad	$50,000									
Memorandum of Agreement with RASO, Establishment of Radiological Investigation Limit and Radiological Screening Report	$25,000									
Engineered cover	$37,882									
Residual waste management	$354,202									
Professional labor management	$57,022									
Interim remedial action completion report	$38,187									
O&M										
ICs review and reporting	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166
Engineered cover O&M	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845
Five-year reviews					$31,836					$31,836
Final remedial action completion report										
Close-out documentation										
Subtotal (With Markups)	**$1,052,107**	**$35,011**	**$35,011**	**$35,011**	**$66,847**	**$35,011**	**$35,011**	**$35,011**	**$35,011**	**$66,847**
Contingency (20 Percent)	$210,421	$7,002	$7,002	$7,002	$13,369	$7,002	$7,002	$7,002	$7,002	$13,369
Subtotal (With Contingency and Markups)	$1,262,528	$42,013	$42,013	$42,013	$80,216	$42,013	$42,013	$42,013	$42,013	$80,216
Escalation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost	**$1,262,528**	**$42,013**	**$42,013**	**$42,013**	**$80,216**	**$42,013**	**$42,013**	**$42,013**	**$42,013**	**$80,216**
NET PRESENT VALUE FACTOR [a]	1.000000	0.981354	0.963056	0.945099	0.927477	0.910184	0.893213	0.876558	0.860214	0.844175
NET PRESENT VALUE [b]	**$1,262,528**	**$41,230**	**$40,461**	**$39,706**	**$74,399**	**$38,240**	**$37,527**	**$36,827**	**$36,140**	**$67,716**

Notes:

a The net present value of future cash flows was calculated using a real discount rate of 1.9 percent per year (adjusted for inflation) from Office of Management and Budget Circular A-94 Appendix C, revised December 2013.

b Totals may not sum exactly due to rounding.

LUC = land use control

O&M = operation and maintenance

SAP - sampling and analysis plan

TABLE D−2

Cost Estimate Details for Alternative S-2: Engineered Cover, Excavation

Feasibility Study Addendum - IR Site 12, Former Naval Station

Treasure Island, San Francisco, California

Technology Name	Calendar Year 11	Calendar Year 12	Calendar Year 13	Calendar Year 14	Calendar Year 15	Calendar Year 16	Calendar Year 17	Calendar Year 18	Calendar Year 19	Calendar Year 20	Calendar Year 21
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Capital Cost											
Remedial design, work plan, and SAP											
LUC implementation plan											
Excavation											
Radiological screening											
Establishment of radiologically controlled screening pad											
Memorandum of Agreement with RASO, Establishment of Radiological Investigation Limit and Radiological Screening Report											
Engineered cover											
Residual waste management											
Professional labor management											
Interim remedial action completion report											
O&M											
ICs review and reporting	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166
Engineered cover O&M	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845
Five-year reviews					$31,836					$31,836	
Final remedial action completion report											
Close-out documentation											
Subtotal (With Markups)	**$35,011**	**$35,011**	**$35,011**	**$35,011**	**$66,847**	**$35,011**	**$35,011**	**$35,011**	**$35,011**	**$66,847**	**$35,011**
Contingency (20 Percent)	$7,002	$7,002	$7,002	$7,002	$13,369	$7,002	$7,002	$7,002	$7,002	$13,369	$7,002
Subtotal (With Contingency and Markups)	$42,013	$42,013	$42,013	$42,013	$80,216	$42,013	$42,013	$42,013	$42,013	$80,216	$42,013
Escalation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost	**$42,013**	**$42,013**	**$42,013**	**$42,013**	**$80,216**	**$42,013**	**$42,013**	**$42,013**	**$42,013**	**$80,216**	**$42,013**
NET PRESENT VALUE FACTOR [a]	0.828434	0.812988	0.797829	0.782953	0.768354	0.754028	0.739968	0.726171	0.712631	0.699343	0.686304
NET PRESENT VALUE [b]	**$34,805**	**$34,156**	**$33,519**	**$32,894**	**$61,634**	**$31,679**	**$31,088**	**$30,509**	**$29,940**	**$56,099**	**$28,834**

Notes:

a The net present value of future cash flows was calculated using a real dis

b Totals may not sum exactly due to rounding.

LUC = land use control

O&M = operation and maintenance

SAP - sampling and analysis plan

TABLE D−2

Cost Estimate Details for Alternative S-2: Engineered Cover, Excavation

Feasibility Study Addendum - IR Site 12, Former Naval Station

Treasure Island, San Francisco, California

Technology Name	Calendar Year 22	Calendar Year 23	Calendar Year 24	Calendar Year 25	Calendar Year 26	Calendar Year 27	Calendar Year 28	Calendar Year 29	Calendar Year 30	Row Total
	2037	2038	2039	2040	2041	2042	2043	2044	2045	
Capital Cost										
Remedial design, work plan, and SAP										$207,000
LUC implementation plan										$42,000
Excavation										$191,000
Radiological screening										$15,000
Establishment of radiologically controlled screening pad										$50,000
Memorandum of Agreement with RASO, Establishment of Radiological Investigation Limit and Radiological Screening Report										$25,000
Engineered cover										$38,000
Residual waste management										$354,000
Professional labor management										$57,000
Interim remedial action completion report										$38,000
O&M										
ICs review and reporting	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$27,166	$815,000
Engineered cover O&M	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$7,845	$235,000
Five-year reviews				$31,836					$31,836	$191,000
Final remedial action completion report									$38,187	$38,000
Close-out documentation									$42,906	$43,000
Subtotal (With Markups)	**$35,011**	**$35,011**	**$35,011**	**$66,847**	**$35,011**	**$35,011**	**$35,011**	**$35,011**	**$147,940**	**$2,339,000**
Contingency (20 Percent)	$7,002	$7,002	$7,002	$13,369	$7,002	$7,002	$7,002	$7,002	$29,588	$286,000
Subtotal (With Contingency and Markups)	$42,013	$42,013	$42,013	$80,216	$42,013	$42,013	$42,013	$42,013	$177,528	**$2,625,000**
Escalation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost	**$42,013**	**$42,013**	**$42,013**	**$80,216**	**$42,013**	**$42,013**	**$42,013**	**$42,013**	**$177,528**	**$2,625,000**
NET PRESENT VALUE FACTOR [a]	0.673507	0.660949	0.648625	0.636531	0.624662	0.613015	0.601585	0.590368	0.579360	
NET PRESENT VALUE [b]	**$28,296**	**$27,768**	**$27,251**	**$51,060**	**$26,244**	**$25,755**	**$25,274**	**$24,803**	**$102,853**	**$2,419,000**

Notes:

a The net present value of future cash flows was calculated using a real dis

b Totals may not sum exactly due to rounding.

LUC = land use control

O&M = operation and maintenance

SAP - sampling and analysis plan

TABLE D−3

Cost Estimate Details for Alternative S-3: Excavation

Feasibility Study Addendum - IR Site 12, Former Naval Station Treasure Island, San Francisco, California

Technology Name	Calendar Year 1	Row Total
	2014	
Capital Cost		
Remedial design, work plan, and SAP	$206,662	$207,000
Buildings demolition	$2,393,065	$2,393,000
Excavation	$352,769	$353,000
Radiological screening	$30,000	$30,000
Establishment of radiologically controlled screening pad	$50,000	$50,000
Memorandum of Agreement with RASO, Establishment of Radiological Investigation Limit and Radiological Screening Report	$25,000	$25,000
Residual waste management	$855,917	$856,000
Professional labor management	$118,598	$119,000
O&M		
Final remedial action completion report	$38,187	$38,000
Close-out documentation	$42,906	$43,000
Subtotal (With Markups)	**$4,113,104**	**$4,114,000**
Contingency (20 Percent)	$822,621	$823,000
Subtotal (With Contingency and Markups)	$4,935,724	**$4,937,000**
Escalation	$0	$0
Total Cost	**$4,935,724**	**$4,937,000**
NET PRESENT VALUE FACTOR [a]	1.000000	
NET PRESENT VALUE [b]	**$4,935,724**	**$4,936,000**

Notes:

a The net present value of future cash flows was calculated using a real discount rate of -0.7 percent per year (adjusted for inflation) from Office of Management and Budget Circular A-94 Appendix C, revised December 2013.

b Totals may not sum exactly due to rounding.

LUC = land use control

O&M = operation and maintenance

SAP - sampling and analysis plan

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
25	**Net Present Value Cost: $4,936,000**	Table 5	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-3.

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
26	**Net Present-Value Cost: $8,425,000**	Table 6	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-4.

TABLE D-4

Cost Estimate Details for Alternative GW-2: Permeable Reactive Barrier

Feasibility Study Addendum - IR Site 12, Former Naval Station Treasure Island, San Francisco, California

Technology Name	Calendar Year 1	Calendar Year 2	Calendar Year 3	Calendar Year 4	Calendar Year 5	Calendar Year 6	Calendar Year 7	Calendar Year 8	Calendar Year 9	Calendar Year 10	Calendar Year 11
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Capital Cost											
Remedial design, work plan, and SAP, treatability study	$307,196										
PRB	$537,649										
Residual waste management	$130,033										
Radiological screening	$3,000										
Establishment of radiologically controlled screening pad	$50,000										
Memorandum of Agreement with RASO, Establishment of Radiological Investigation Limit and Radiological Screening Report	$25,000										
Professional labor management	$66,768										
Interim remedial action completion report	$38,187										
O&M											
Gauging and monitoring (LTM for GW-S4) and reporting	$154,252	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646
PRB Regeneration			$537,649			$537,649			$537,649		
Five-year reviews					$31,836					$31,836	
Abandonment of wells outside of GW-S4											
Residual waste management	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064
Final remedial action completion report											
Close-out documentation											
Subtotal (With Markups)	**$1,313,149**	**$61,710**	**$599,359**	**$61,710**	**$93,546**	**$599,359**	**$61,710**	**$61,710**	**$599,359**	**$93,546**	**$61,710**
Contingency (20 Percent)	$262,630	$12,342	$119,872	$12,342	$18,709	$119,872	$12,342	$12,342	$119,872	$18,709	$12,342
Subtotal (With Contingency and Markups)	$1,575,779	$74,052	$719,231	$74,052	$112,255	$719,231	$74,052	$74,052	$719,231	$112,255	$74,052
Escalation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost	**$1,575,779**	**$74,052**	**$719,231**	**$74,052**	**$112,255**	**$719,231**	**$74,052**	**$74,052**	**$719,231**	**$112,255**	**$74,052**
NET PRESENT VALUE FACTOR [a]	1.000000	0.981354	0.963056	0.945099	0.927477	0.910184	0.893213	0.876558	0.860214	0.844175	0.828434
NET PRESENT VALUE [b]	**$1,575,779**	**$72,671**	**$692,660**	**$69,986**	**$104,114**	**$654,632**	**$66,144**	**$64,911**	**$618,693**	**$94,763**	**$61,347**

Notes:

a The net present value of future cash flows was calculated using a real discount rate of 1.9 percent per year (adjusted for inflation) from Office of Management and Budget Circular A-94 Appendix C, revised December 2013.

b Totals may not sum exactly due to rounding.

LTM = long-term monitoring

O&M = operation and maintenance

SAP - sampling and analysis plan

TABLE D−4

Cost Estimate Details for Alternative GW-2: Permeable Reactive Barrier

Feasibility Study Addendum - IR Site 12, Former Naval Station

Treasure Island, San Francisco, California

Technology Name	Calendar Year 12	Calendar Year 13	Calendar Year 14	Calendar Year 15	Calendar Year 16	Calendar Year 17	Calendar Year 18	Calendar Year 19	Calendar Year 20	Calendar Year 21	Calendar Year 22
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Capital Cost											
Remedial design, work plan, and SAP, treatability study											
PRB											
Residual waste management											
Radiological screening											
Establishment of radiologically controlled screening pad											
Memorandum of Agreement with RASO, Establishment of Radiological Investigation Limit and Radiological Screening Report											
Professional labor management											
Interim remedial action completion report											
O&M											
Gauging and monitoring (LTM for GW-S4) and reporting	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646
PRB Regeneration	$537,649			$537,649			$537,649			$537,649	
Five-year reviews				$31,836					$31,836		
Abandonment of wells outside of GW-S4											
Residual waste management	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064
Final remedial action completion report											
Close-out documentation											
Subtotal (With Markups)	**$599,359**	**$61,710**	**$61,710**	**$631,195**	**$61,710**	**$61,710**	**$599,359**	**$61,710**	**$93,546**	**$599,359**	**$61,710**
Contingency (20 Percent)	$119,872	$12,342	$12,342	$126,239	$12,342	$12,342	$119,872	$12,342	$18,709	$119,872	$12,342
Subtotal (With Contingency and Markups)	$719,231	$74,052	$74,052	$757,434	$74,052	$74,052	$719,231	$74,052	$112,255	$719,231	$74,052
Escalation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost	**$719,231**	**$74,052**	**$74,052**	**$757,434**	**$74,052**	**$74,052**	**$719,231**	**$74,052**	**$112,255**	**$719,231**	**$74,052**
NET PRESENT VALUE FACTOR [a]	0.812988	0.797829	0.782953	0.768354	0.754028	0.739968	0.726171	0.712631	0.699343	0.686304	0.673507
NET PRESENT VALUE [b]	**$584,726**	**$59,081**	**$57,979**	**$581,978**	**$55,837**	**$54,796**	**$522,285**	**$52,772**	**$78,505**	**$493,611**	**$49,875**

Notes:

a The net present value of future cash flows was calculated using a real discount rate of 1.9 percent per year (adjusted for inflation) from Office of Management and Budget Circular A-94 Appendix C, revised December 2013.

b Totals may not sum exactly due to rounding.

LTM = long-term monitoring

O&M = operation and maintenance

SAP - sampling and analysis plan

TABLE D−4

Cost Estimate Details for Alternative GW-2: Permeable Reactive Barrier

Feasibility Study Addendum - IR Site 12, Former Naval Station

Treasure Island, San Francisco, California

Technology Name	Calendar Year 23	Calendar Year 24	Calendar Year 25	Calendar Year 26	Calendar Year 27	Calendar Year 28	Calendar Year 29	Calendar Year 30	Row Total
	2038	2039	2040	2041	2042	2043	2044	2045	
Capital Cost									
Remedial design, work plan, and SAP, treatability study									$307,000
PRB									$538,000
Residual waste management									$130,000
Radiological screening									$3,000
Establishment of radiologically controlled screening pad									$50,000
Memorandum of Agreement with RASO, Establishment of Radiological Investigation Limit and Radiological Screening Report									$25,000
Professional labor management									$67,000
Interim remedial action completion report									$38,000
O&M									
Gauging and monitoring (LTM for GW-S4) and reporting	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$60,646	$1,913,000
PRB Regeneration		$537,649			$537,649			$537,649	$5,376,000
Five-year reviews			$31,836					$31,836	$191,000
Abandonment of wells outside of GW-S4								$144,890	$145,000
Residual waste management	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$1,064	$32,000
Final remedial action completion report								$38,187	$38,000
Close-out documentation								$42,906	$43,000
Subtotal (With Markups)	**$61,710**	**$599,359**	**$93,546**	**$61,710**	**$599,359**	**$61,710**	**$61,710**	**$857,178**	**$8,896,000**
Contingency (20 Percent)	$12,342	$119,872	$18,709	$12,342	$119,872	$12,342	$12,342	$171,436	$721,000
Subtotal (With Contingency and Markups)	$74,052	$719,231	$112,255	$74,052	$719,231	$74,052	$74,052	$1,028,614	**$9,617,000**
Escalation	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost	**$74,052**	**$719,231**	**$112,255**	**$74,052**	**$719,231**	**$74,052**	**$74,052**	**$1,028,614**	**$9,617,000**
NET PRESENT VALUE FACTOR [a]	0.660949	0.648625	0.636531	0.624662	0.613015	0.601585	0.590368	0.579360	
NET PRESENT VALUE [b]	**$48,945**	**$466,511**	**$71,454**	**$46,258**	**$440,900**	**$44,549**	**$43,718**	**$595,938**	**$8,425,000**

Notes:

a The net present value of future cash flows was calculated using a real discount rate of 1.9 percent per year (adjusted for inflation) from Office of Management and Budget Circular A-94 Appendix C, revised December 2013.

b Totals may not sum exactly due to rounding.

LTM = long-term monitoring

O&M = operation and maintenance

SAP - sampling and analysis plan

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
27	**Net Present-Value Cost: $3,611,000**	Table 6	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-5.

TABLE D−5

Cost Estimate Details for Alternative GW-3: In Situ Soil Blending/ISCO and Groundwater Monitoring

Feasibility Study Addendum - IR Site 12, Former Naval Station Treasure Island, San Francisco, California

Technology Name	Calendar Year 1	Calendar Year 2	Calendar Year 3	Calendar Year 4	Calendar Year 5	Calendar Year 6	Calendar Year 7	Calendar Year 8	Calendar Year 9	Calendar Year 10	Row Total
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	
Capital Cost											
Remedial design, work plan, and SAP	$206,662										$207,000
Remedial investigation	$40,354										$40,000
Building demolition	$728,139										$728,000
Abandonment of wells	$30,448										$30,000
ISCO soil mixing	$1,362,075										$1,362,000
Residual waste management	$2,696										$3,000
Professional labor management	$139,522										$140,000
Interim remedial action completion report	$38,187										$38,000
O&M											
Gauging and monitoring (LTM for GW-S4) and reporting	$98,729	$16,442	$16,442	$16,442	$16,442	$16,442	$16,442	$16,442	$16,442	$16,442	$247,000
Five-year reviews					$31,591					$31,591	$63,000
Abandonment of wells outside of GW-S4										$85,459	$85,000
Residual waste management	$424	$424	$424	$424	$424	$424	$424	$424	$424	$6,732	$11,000
Final remedial action completion report										$38,187	$38,000
Close-out documentation										$42,906	$43,000
Subtotal (With Markups)	**$2,647,236**	**$16,866**	**$16,866**	**$16,866**	**$48,457**	**$16,866**	**$16,866**	**$16,866**	**$16,866**	**$221,317**	**$3,035,000**
Contingency (20 Percent)	$529,447	$3,373	$3,373	$3,373	$9,691	$3,373	$3,373	$3,373	$3,373	$44,263	$607,000
Subtotal (With Contingency and Markups)	$3,176,683	$20,240	$20,240	$20,240	$58,149	$20,240	$20,240	$20,240	$20,240	$265,581	**$3,642,000**
Escalation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost	**$3,176,683**	**$20,240**	**$20,240**	**$20,240**	**$58,149**	**$20,240**	**$20,240**	**$20,240**	**$20,240**	**$265,581**	**$3,642,000**
NET PRESENT VALUE FACTOR [a]	1.000000	0.990099	0.980296	0.970590	0.960980	0.951466	0.942045	0.932718	0.923483	0.914340	
NET PRESENT VALUE [b]	**$3,176,683**	**$20,040**	**$19,841**	**$19,645**	**$55,880**	**$19,258**	**$19,067**	**$18,878**	**$18,691**	**$242,831**	**$3,611,000**

Notes:

a The net present value of future cash flows was calculated using a real discount rate of 1.0 percent per year (adjusted for inflation) from Office of Management and Budget Circular A-94 Appendix C, revised December 2013.

b Totals may not sum exactly due to rounding.

ISCO = in situ chemical oxidation

LTM = long-term monitoring

O&M = operation and maintenance

SAP - sampling and analysis plan

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
28	**Net Present-Value Cost: $7,359,000**	Table 6	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-6.

TABLE D−6

Cost Estimate Details for Alternative GW-4: Excavation, Biostimulation, and MNA

Feasibility Study Addendum - IR Site 12, Former Naval Station Treasure Island, San Francisco, California

Technology Name	Calendar Year 1	Calendar Year 2	Calendar Year 3	Calendar Year 4	Calendar Year 5	Calendar Year 6	Calendar Year 7	Calendar Year 8	Calendar Year 9	Calendar Year 10	Row Total
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Capital Cost											
Remedial design, work plan, and SAP	$206,662										$207,000
Building demolition	$1,296,562										$1,297,000
Excavation	$394,692										$395,000
Radiological screening	$90,000										$90,000
Establishment of radiologically controlled screening pad	$50,000										$50,000
Memorandum of Agreement with RASO, Establishment of Radiological Investigation Limit and Radiological Screening Report	$25,000										$25,000
Placement of oxygen release compound	$1,684,254										$1,684,000
Free product recovering	$27,239										$27,000
Residual waste management	$1,395,849										$1,396,000
Professional labor management	$350,203										$350,000
Interim remedial action completion report	$38,187										$38,000
O&M											
Gauging and monitoring (MNA for GW-S4) and reporting	$98,729	$32,884	$32,884	$32,884	$32,884	$26,632	$26,632	$26,632	$26,632	$26,632	$363,000
Five-year reviews					$31,591					$31,591	$63,000
Abandonment of wells outside of GW-S4										$85,459	$85,000
Residual waste management	$562	$562	$562	$562	$562	$562	$562	$562	$562	$6,870	$12,000
Final remedial action completion report										$38,187	$38,000
Close-out documentation										$42,906	$43,000
Subtotal (With Markups)	**$5,657,939**	**$33,446**	**$33,446**	**$33,446**	**$65,037**	**$27,194**	**$27,194**	**$27,194**	**$27,194**	**$231,645**	**$6,163,000**
Contingency (20 Percent)	$1,131,588	$6,689	$6,689	$6,689	$13,007	$5,439	$5,439	$5,439	$5,439	$46,329	$1,233,000
Subtotal (With Contingency and Markups)	$6,789,527	$40,135	$40,135	$40,135	$78,044	$32,633	$32,633	$32,633	$32,633	$277,974	**$7,396,000**
Escalation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost	**$6,789,527**	**$40,135**	**$40,135**	**$40,135**	**$78,044**	**$32,633**	**$32,633**	**$32,633**	**$32,633**	**$277,974**	**$7,396,000**
NET PRESENT VALUE FACTOR [a]	1.000000	0.990099	0.980296	0.970590	0.960980	0.951466	0.942045	0.932718	0.923483	0.914340	
NET PRESENT VALUE [b]	**$6,789,527**	**$39,738**	**$39,344**	**$38,955**	**$74,999**	**$31,049**	**$30,742**	**$30,437**	**$30,136**	**$254,163**	**$7,359,000**

Notes:

a The net present value of future cash flows was calculated using a real discount rate of 1.0 percent per year (adjusted for inflation) from Office of Management and Budget Circular A-94 Appendix C, revised December 2013.

b Totals may not sum exactly due to rounding.

MNA = monitored natural attenuation

O&M = operation and maintenance

SAP - sampling and analysis plan

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
29	**Net Present-Value Cost: 5,595,000**	Table 6	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Table D-7.

TABLE D−7

Cost Estimate Details for Alternative GW-5: Excavation, Biostimulation, In Situ Soil Blending/ISCO, and MNA

Feasibility Study Addendum - IR Site 12, Former Naval Station Treasure Island, San Francisco, California

Technology Name	Calendar Year 1	Calendar Year 2	Calendar Year 3	Calendar Year 4	Calendar Year 5	Calendar Year 6	Calendar Year 7	Calendar Year 8	Calendar Year 9	Calendar Year 10	Row Total
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	
Capital Cost											
Remedial design, work plan, and SAP	$206,662										$207,000
Remedial investigation	$52,850										$53,000
Abandonment of wells	$13,441										$13,000
ISCO soil mixing	$654,262										$654,000
Building demolition	$728,139										$728,000
Excavation	$217,528										$218,000
Radiological screening	$45,000										$45,000
Establishment of radiologically controlled screening pad	$50,000										$50,000
Memorandum of Agreement with RASO, Establishment of Radiological Investigation Limit and Radiological Screening Report	$25,000										$25,000
Placement of oxygen release compound	$879,811										$880,000
Free product recovering	$27,239										$27,000
Residual waste management	$809,718										$810,000
Professional labor management	$260,200										$260,000
Interim remedial action completion report	$38,187										$38,000
O&M											
Gauging and monitoring (MNA for GW-S4) and reporting	$118,015	$42,527	$42,527	$42,527	$42,527	$31,620	$31,620	$31,620	$31,620	$31,620	$446,000
Five-year reviews					$31,591					$31,591	$63,000
Abandonment of wells outside of GW-S4										$85,459	$85,000
Residual waste management	$562	$562	$562	$562	$562	$562	$562	$562	$562	$6,870	$12,000
Final remedial action completion report										$38,187	$38,000
Close-out documentation										$42,906	$43,000
Subtotal (With Markups)	**$4,126,614**	**$43,089**	**$43,089**	**$43,089**	**$74,680**	**$32,182**	**$32,182**	**$32,182**	**$32,182**	**$236,633**	**$4,695,000**
Contingency (20 Percent)	$825,323	$8,618	$8,618	$8,618	$14,936	$6,436	$6,436	$6,436	$6,436	$47,327	$939,000
Subtotal (With Contingency and Markups)	$4,951,937	$51,707	$51,707	$51,707	$89,616	$38,618	$38,618	$38,618	$38,618	$283,959	**$5,634,000**
Escalation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost	**$4,951,937**	**$51,707**	**$51,707**	**$51,707**	**$89,616**	**$38,618**	**$38,618**	**$38,618**	**$38,618**	**$283,959**	**$5,634,000**
NET PRESENT VALUE FACTOR [a]	1.000000	0.990099	0.980296	0.970590	0.960980	0.951466	0.942045	0.932718	0.923483	0.914340	
NET PRESENT VALUE [b]	**$4,951,937**	**$51,195**	**$50,688**	**$50,186**	**$86,119**	**$36,744**	**$36,380**	**$36,020**	**$35,663**	**$259,635**	**$5,595,000**

Notes:

a The net present value of future cash flows was calculated using a real discount rate of 1.0 percent per year (adjusted for inflation) from Office of Management and Budget Circular A-94 Appendix C, revised December 2013.

b Totals may not sum exactly due to rounding.

MNA = monitored natural attenuation

O&M = operation and maintenance

SAP - sampling and analysis plan

Item	Reference or Phrase in ROD/Final RAP	Location in ROD/Final RAP	Identification of Referenced Document in the Administrative Record
30	sustainability of each soil and groundwater alternative	Section 2.9.2.2	Final Feasibility Study Addendum for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California. KCH. June 2015. Sections 2.8 through 2.8.2.

2.8 Comparative Analysis of Alternatives

A comparative evaluation of sustainability assessment results for IR Site 12 remedial alternatives is presented in this section.

2.8.1 Comparative Analysis of Alternatives for Greenhouse Gas Emissions

Soil Alternatives

Alternative S-1 will not result in GHGs, whereas Alternatives S-2 and S-3 will, primarily due to fill and cap consumables manufacture and waste transportation and handling. According to the SiteWise analysis, Alternative S-3 would generate about twice the amount of GHG emissions as Alternative S-2.

Groundwater Alternatives

Alternative GW-1 will not result in GHGs, whereas Alternatives GW-2, GW-3, and GW-4 will, primarily due to: manufacturing of consumables; waste transportation and handling; and transportation of equipment, materials, and personnel. According to the SiteWise analysis, Alternative GW-4 had the highest GHG emissions from manufacture of ISCO product and residual handling, and would be the highest generator of GHG emissions by far compared to Alternatives GW-2 and GW-4.

2.8.2 Comparative Analysis of Alternatives for Additional GSR Metrics

A comparison of GSR parameters is presented below:

Soil Alternatives

- **Total Energy Used.** Alternative S-1 will not require any energy use, whereas Alternatives S-2 and S-3 will. Alternative S-3 will result in the highest energy use during remedial action construction.
- **Water Impacts.** Alternative S-1 will not require any water use, whereas Alternatives S-2 and S-3 will. Alternative S-2 will result in the highest water use because of the longer duration of construction activities requiring daily dust suppression.
- **Nitrogen Oxide Emissions.** Alternative S-1 will not result in NO_X emissions, whereas Alternatives S-2 and S-3 will, primarily due to a need for residual waste transportation and handling. Alternative S-3 will result in the highest NOx emissions during remedial action construction.
- **Sulfur Oxide Emissions.** Alternative S-1 will not result in SO_X emissions, whereas Alternatives S-2 and S-3 will, primarily due to a need for residual waste transportation and handling. Alternative S-3 will result in the highest SOx emissions during remedial action construction.
- **Particulate Emissions.** Alternative S-1 will not generate PM_{10} emissions, whereas Alternatives S-2 and S-3 will, primarily due to a need for residual waste transportation and handling. Alternative S-3 will result in the highest PM_{10} emissions during remedial action construction.

- **Accident Risk – Fatality.** Alternative S-1 will not result in increased risk (fatality) to site workers, whereas Alternatives S-2 and S-3 will, primarily due to transportation of personnel and residual waste, and the number of onsite labor hours. In addition, increased risk (fatality) to site workers for Alternative S-3 will also be due to operation of equipment on the site.
- **Accident Risk – Injury.** Alternative S-1 will not result in increased risk to site workers, whereas Alternatives S-2 and S-3 will, primarily due to transportation of personnel and the number of onsite labor hours. In addition, increased risk (injury) to site workers for Alternative S-3 will also be due to operation of equipment onsite.

Of the GSR factors evaluated, Alternative S-3 ranked least favorably in seven of the eight evaluation factors (only exception is water usage). The greatest overall impacts for Alternative S-3 are related to residual waste handling and manufacturing of the consumables required (for GHG and energy use).

Additional sustainability metrics considered by SiteWise include nonhazardous and hazardous waste landfill space used, top soil consumption, and lost hours due injury of site workers. Comparison of these alternatives, with respect to these additional sustainability metrics, is discussed below:

- **Nonhazardous Waste Landfill Space Used**. Alternative S-1 will not consume nonhazardous landfill space, whereas Alternative S-2 and S-3 will. Alternative S-3 would use the largest amount of landfill space.
- **Hazardous Waste Landfill Space Used**. Alternatives S-1 through S-3 will not consume hazardous landfill space based on historic investigation results.
- **Topsoil Consumption**. Alternative S-1 will not require the use of topsoil, whereas Alternative S-2 and S-3 will. Alternative S-3 will require more topsoil because of the volume and area required to backfill.
- **Lost Hours Injury**. Alternative S-1 will not result in lost time due to injury, whereas Alternatives S-2 and S-3 will.

Groundwater Alternatives

- **Total Energy Used.** Alternative GW-1 will not require any energy use, whereas Alternatives GW-2, GW-3, GW-4, and GW-5 will. Alternative GW-4 will result in the highest energy use during remedial action construction.
- **Water Impacts.** Alternative GW-1 will not require any water use, whereas Alternatives GW-2, GW-3, GW-4 and GW-5 will. Alternatives GW-3 would have the highest water use for dust suppression during construction work.
- **Nitrogen Oxide Emissions.** Alternative GW-1 will not result in NO_X emissions, whereas Alternatives GW-2, GW-3, GW-4, and GW-5, primarily due to a need for transportation, equipment use and residual waste handling. Alternative GW-4 will result in the highest NOx emissions during remedial action construction, primarily from waste handling.
- **Sulfur Oxide Emissions.** Alternative GW-1 will not result in SO_X emissions, whereas Alternatives GW-2, GW-3, GW-4, and GW-5 will, primarily due to a need for

transportation, equipment use, and residual waste handling. Alternative GW-4 will result in the highest SOx emissions during remedial action construction.

- **Particulate Emissions.** Alternative GW-1 will not generate PM_{10} emissions, whereas Alternatives GW-2, GW-3, GW-4, and GW-5 will, primarily due to a need for transportation, equipment use and residual waste handling. Alternative GW-4 will result in the highest PM_{10} emissions during remedial action construction.
- **Accident Risk – Fatality.** Alternative GW-1 will not result in increased risk (fatality) to site workers, whereas Alternatives GW-2, GW-3, GW-4, and GW-5 will, primarily due to equipment use and residual handling. Alternative GW-4 would have the highest accident risk (fatality) impacts.
- **Accident Risk – Injury.** Alternative GW-1 will not result in increased risk to site workers, whereas Alternatives GW-2, GW-3, GW-4, and GW-5 will, primarily due to transportation of equipment use and residual handling. In addition, increased risk (injury) to site workers for Alternative GW-4 will also be due to higher transportation and more labor hours due to the longer duration of field activities.

Of the GSR factors evaluated, Alternative GW-4 ranked least favorably for all GSR metrics. The greatest overall impacts for Alternative GW-3 are related to resiudal handling and manufacturing of the consumables required. .

Additional sustainability metrics considered by SiteWise include nonhazardous and hazardous waste landfill space used, top soil consumption, and lost hours due injury of site workers. Comparison of these alternatives, with respect to these additional sustainability metrics, is discussed below:

- **Nonhazardous Waste Landfill Space Used**. Alternative GW-1 will not consume nonhazardous landfill space, whereas Alternatives GW-2, GW-3, GW-4 and GW-5 will. Alternative GW-4 would consume the largest amount of landfill space.
- **Hazardous Waste Landfill Space Used**. Alternative GW-1 through GW-5 will not consume hazardous landfill space.
- **Topsoil Consumption**. Alternatives GW-1 and GW-3 will not require the use of topsoil. Alternative GW-4 would require the most topsoil.
- **Lost Hours Injury**. Alternative GW-1 will not result in lost time due to injury, whereas Alternatives GW-2, GW-3, GW-4, and GW-5 will. Alternative GW-5 would have the highest lost hours due to injury.

Some uncertainties are inherent within the SiteWise model; for example, the type of equipment assumed in the alternatives could affect the overall evaluation significantly. Varying the assumptions built into the FS (such as the overall duration of alternatives and the frequency of operations and maintenance) will have a substantial effect on the results of the SiteWise model. SiteWise only accounts for the GHG, and total energy of consumable manufacturing and may be underestimating impacts in the other GSR categories.

The potential to recycle, reuse, or recover free product at GW-S4 is considered unlikely given the age and location of the release.

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ATTACHMENT C
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

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TABLE C-1: FEDERAL AND STATE CHEMICAL-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
WASTE				
Federal				
Resource Conservation and Recovery Act (Title 42 U.S.C. Chapter 82, §§ 6901-6991[i])[b]				
Defines RCRA hazardous waste. A solid waste is characterized as toxic, based on TCLP, if the waste exceeds the TCLP maximum concentrations.	Waste.	Cal. Code Regs. tit. 22, §§ 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Applicable	These regulations are applicable to activities that generate waste. The Navy will generate waste in implementing the selected soil and groundwater remedies. The Navy will determine whether the waste meets the definition of RCRA hazardous waste when it is generated.
State				
Department of Toxic Substances Control[b]				
Definition of non-RCRA hazardous waste	Waste	Cal. Code Regs. tit. 22, § 66261.22(a)(3) and (4), 66261.24(a)(2)-(a)(8), 66261.101, 66261.3(a)(2)(C) 66261.3(a)(2)(F)	Applicable	These regulations are applicable to activities that generate waste. The Navy will generate waste in implementing the selected soil and groundwater remedies. The Navy will determine whether the waste meets the definition of state regulated non-RCRA hazardous waste when it is generated.
State and Regional Water Quality Control Boards[b]				
Definitions of designated waste, nonhazardous solid waste, and inert waste	Waste	Cal. Code Regs. Tit., 27, §§ 20210, 20220, and 20230	Applicable	These regulations are applicable to activities that generate waste. The Navy will generate waste in implementing the selected soil and groundwater remedies. The Navy will determine whether the waste meets the definition of designated or nonhazardous solid waste when it is generated.

TABLE C-1: FEDERAL AND STATE CHEMICAL-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
SOIL				
Federal				
Toxic Substances Control Act (15 U.S.C., Chapter 53, §§ 2601–2692)[c]				
EPA has promulgated cleanup requirements for PCB spills under TSCA. These requirements include the self-implementing on-site cleanup option. Under the self-implementing cleanup option, TSCA establishes a cleanup goal of 1 mg/kg for high occupancy use areas, such as residential areas.	Soil, debris, sludge, or dredged material contaminated with PCBs at concentrations greater than 50 mg/kg	40 CFR § 761.61(a)	Relevant and appropriate	The self-implementing cleanup goal of 1 mg/kg for high occupancy use was set as the basis for the PCB remediation goal for Site 12.
State				
There are no state chemical-specific ARARs for soil for the selected remedy at Site 12.				
GROUNDWATER				
Federal				
Resource Conservation and Recovery Act (Title 42 U.S.C. Chapter 82, §§ 6901-6991[i])[b]				
Groundwater protection standards: owners/operators of RCRA treatment, storage, or disposal facilities must comply with conditions in this section that are designed to ensure that hazardous constituents entering the groundwater from a regulated unit do not exceed the concentration limits for contaminants of concern set forth in Cal. Code Regs. tit. 22, § 66264.94 in the uppermost aquifer underlying the waste management unit at the point of compliance.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.94, except 66264.94(a)(2), (b), and (e)	Relevant and appropriate	This regulation is applicable to RCRA permitted waste management units. Site 12 is not, and does not contain, a RCRA permitted waste management unit. Therefore, this regulation is not applicable. The Navy has identified this regulation as relevant and appropriate because there is groundwater contamination at Site 12, and the remedy selected for groundwater includes groundwater treatment. This regulation was used in setting the remediation goal for groundwater, which is based on the lowest concentration technically and economically achievable considering naturally occurring groundwater quality and the potential risk posed by groundwater.

TABLE C-1: FEDERAL AND STATE CHEMICAL-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
State				
State and Regional Water Quality Control Boards[b]				
Authorizes the SWRCB and the RWQCB to establish in water quality control plans, beneficial uses, and numerical and narrative standards to protect both surface water and groundwater quality. Authorizes regional water boards to issue permits for discharges to land or surface or groundwater that could affect water quality, including NPDES permits, and to take enforcement action to protect water quality.	Waters of the state	Cal. Water Code, Division 7, §§ 13241, 13243, 13263(a), 13269, and 13360 (Porter-Cologne Act)	Applicable	The Navy accepts the substantive provisions of these statutes as ARARs because they contain enabling legislation, implemented through the beneficial uses, water quality objectives, waste discharge requirements, and promulgated policies of the Basin Plan for the San Francisco Bay Basin.
Describes water basins and establishes beneficial uses of groundwater and surface water, establishes water quality objectives, including narrative and numerical standards, establishes implementation plans to meet water quality objectives and protect beneficial uses, and incorporates statewide water quality control plans and policies.	Waters of the State	Comprehensive Water Quality Control Plan for the San Francisco Region (Basin Plan) Chapters 2 and 3, except the MUN beneficial use designation	Applicable	The Navy accepts the substantive requirements of Chapters 2 and 3 of the Basin Plan (except the MUN beneficial use designation) as ARARs for the groundwater at Site 12.
Incorporated into all regional basin plans. Designates all groundwater and surface water in the state as existing or potential sources of drinking water except where concentrations of TDS exceed 3,000 mg/L, the well yield is less than 200 gallons per day from a single well, the water is a geothermal resource or in a water conveyance facility, or the water cannot reasonably be treated for domestic use.	Waters of the State	SWRCB Resolution 88-63 (Sources of Drinking Water Policy)	Applicable	This resolution is incorporated into the San Francisco Bay Basin Plan and was used to conclude that the groundwater at NAVSTA TI, including Site 12, is not a potential source of drinking water.

TABLE C-1: FEDERAL AND STATE CHEMICAL-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
SURFACE WATER				
Federal				
Clean Water Act (33 U.S.C. chapter 26, §§ 1251-1387)[b]				
California Toxics Rule	Discharge to waters of the United States	40 CFR §131.38	Applicable	These water quality standards are legally applicable to surface water in the State of California for inland surface water and enclosed bays and estuaries for all purposes and programs under the Clean Water Act. Arsenic-contaminated groundwater from Site 12 may discharge to surface water in San Francisco Bay. Therefore, the Navy has identified the concentration limit for arsenic in the California Toxics Rule as an ARAR and has used it as the basis for the remediation goal for arsenic.
State				
There are no state chemical-specific ARARs for surface water for the selected remedy for Site 12.				

TABLE C-1: FEDERAL AND STATE CHEMICAL-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12, FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Table C-1 Notes:

a Only the substantive provisions of the requirements cited in this table are ARARs.

b Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as ARARs. Specific ARARs are addressed in the table below each general heading and only the substantive requirements of the specific citations are considered ARARs.

§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
Cal. Code Regs.	California Code of Regulations
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
MUN	Municipal
NAVSTA TI	Naval Station Treasure Island
NPDES	National Pollutant Discharge Elimination System
PCB	Polychlorinated biphenyls
RCRA	Resource Conservation and Recovery Act
SWRCB	State Water Resources Control Board
TCLP	Toxicity characteristic leaching procedure
TDS	Total dissolved solids
tit	Title
TSCA	Toxic Substances Control Act
U.S.C.	United States Code

TABLE C-2: FEDERAL AND STATE LOCATION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Location	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
Federal					
Coastal Zone Management Act (16 U.S.C. Chapter 82, §§ 1451-1464)[b]					
Within the coastal zone	Conduct activities in a manner consistent with approved state management programs.	Activities affecting the coastal zone including lands thereunder and adjacent shore land.	16 U.S.C. § 1456(c) 15 CFR § 930	Relevant and appropriate	The CZMA requires federal agency activities outside the coastal zone (that is, activities on federal lands) that may affect any land or water use or natural resources of the coastal zone be conducted in a manner that is consistent to the maximum extent practicable with enforceable policies of an approved state management program. The San Francisco Bay Plan is an approved state program. The selected remedial action will comply with the broad goals of the San Francisco Bay Plan.
State					
San Francisco Bay Conservation and Development Commission[b]					
Within the coastal zone	Reduce fill and disposal of dredged material in San Francisco Bay, maintain marshes and mudflats to the fullest extent possible to conserve wildlife, abate pollution, and protect the beneficial uses of the bay.	Activities affecting San Francisco Bay and adjacent shore lands.	San Francisco Bay Plan at Cal. Code Regs. tit. 14, §§ 10110 through 11990	Relevant and appropriate	The remedy for Site 12 includes excavation of contaminated soil throughout Site 12. Temporary soil staging piles will be constructed to store the soil prior to off-site disposal. The locations of these temporary staging piles may be within the coastal zone. If the remedial design indicates that a temporary staging pile will be located within 100 feet of the shoreline, the Navy will use the substantive provisions of BCDC Regionwide Permit #3 (for placement, installation, or construction of temporary facilities) as a means of complying with the requirements of the San Francisco Bay Plan. Pursuant to CERCLA § 121(e), the Navy is not required to actually obtain a BCDC permit, or submit a notice of intent to use a regionwide permit; instead, it will use the substantive provisions of the permit as a means of complying with this ARAR. The remedy will not result in dredging or filling of the bay.

TABLE C-2: FEDERAL AND STATE LOCATION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12, FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Table C-2 Notes:

a Only the substantive provisions of the requirements cited in this table are ARARs.

b Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as ARARs. Specific ARARs are addressed in the table below each general heading and only the substantive requirements of the specific citations are considered ARARs.

§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
BCDC	Bay Conservation and Development Commission
Cal. Code Regs.	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
NAVSTA TI	Naval Station Treasure Island
tit	Title
U.S.C.	United States Code

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
SOIL REMEDY: EXCAVATION AND OFF-SITE DISPOSAL					
SOIL EXCAVATION AND WASTE					
Federal					
Resource Conservation and Recovery Act (Title 42 U.S.C., Chapter 82, §§ 6901-6991[i])[b]					
Generate waste for off-site disposal	Person who generates waste shall determine if the waste is a hazardous waste	Generator of waste.	Cal. Code Regs. tit. 22, §§ 66262.10(a), and 66262.11	Applicable	These regulations are applicable to any operation that generates waste for off-site disposal. The Navy will generate waste for off-site disposal during excavation. The Navy will determine whether the waste is RCRA hazardous waste when it is generated.
Generate waste for off-site disposal	Requirements for analyzing waste for determining whether waste is hazardous	Generator of waste.	Cal. Code Regs. tit. 22, § 66264.13(a) and (b)	Applicable	These regulations are applicable to any operation that generates waste for off-site disposal. The Navy will generate waste for off-site disposal during excavation. The Navy will determine whether the waste is RCRA hazardous waste when it is generated.
Stockpiling soil for off-site disposal	Allows generators to accumulate solid remediation waste in an EPA-designated pile for storage only up to 2 years during remedial operations without triggering LDRs	RCRA hazardous waste temporarily stored in piles.	40 CFR, § 264.554(d)(1)(i-ii) and (d)(2), (e), (f), (h), (i), (j), and (k)	Relevant and appropriate	The Navy will temporarily stockpile excavated soil in staging piles for off-site disposal. The excavated soil may or may not meet the definition of RCRA hazardous waste (this determination will be made at the time the soil is excavated). However, the temporary staging pile will comply with these requirements.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
SOIL REMEDY: EXCAVATION AND OFF-SITE DISPOSAL					
SOIL EXCAVATION AND WASTE					
Close temporary staging pile	Minimize the need for further maintenance controls and minimize or eliminate, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or runoff, or waste decomposition products to groundwater or surface water or to the atmosphere.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.111(a) and (b)	Relevant and appropriate	The Navy will close the temporary soil staging pile in compliance with these ARARs.
Close temporary staging pile	During partial and final closure periods, all contaminated equipment, structures and soil shall be property disposed or decontaminated by removing all hazardous waste and residue.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.114	Relevant and appropriate	The Navy will close the temporary soil staging pile in compliance with this ARAR.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
SOIL REMEDY: EXCAVATION AND OFF-SITE DISPOSAL					
SOIL EXCAVATION AND WASTE					
Close temporary staging pile	At closure, owner shall remove or decontaminate waste residue, contaminated containment system components, contaminated subsoil, structures, and equipment. Owner shall manage them as hazardous waste. If waste is left on site, owner shall perform postclosure care in accordance with the closure and post-closure care requirements that apply to landfills.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.258(a) and (b), except references to procedural requirements	Relevant and appropriate	The Navy will close the temporary soil staging pile in compliance with these ARARs.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
SOIL REMEDY: EXCAVATION AND OFF-SITE DISPOSAL					
SOIL EXCAVATION AND WASTE					
Federal					
Clean Water Act (33 U.S.C. chapter 26, §§ 1251-1387)[b]					
Discharge to surface water, including discharge of stormwater	Owners and operators of construction activities must be in compliance with discharge standards, including substantive provisions of the general requirements for storm water plans and BMPs.	Construction activity affecting at least 1 acre	Clean Water Act § 402(p) 40 CFR § 122.44(k)(2) and (4)	Applicable	The excavation will affect more than 1 acre. The Navy will comply with the substantive provisions of SWRCB Order Number 2009-0009-DWQ, as amended by 2010-0014-DWQ, the state's general construction activity stormwater permit, as a means of complying with this ARAR.
Clean Air Act (42 U.S.C. §§ 7401-7671)[b]					
Excavate soil	A person shall not emit particles from any operation in sufficient number to cause annoyance to any other person, large enough to be visible as individual particles at the emission point or of such size and nature as to be viable individually as incandescent particles	Emission of visible particles that could fall on real property other than the person responsible for the emission	BAAQMD Rule 6-1-305	Relevant and appropriate	This section applies to the deposition of the particles on property of another. The particles generated by the excavation at Site 12 will not fall onto the property of another. The Navy has identified the requirement as relevant and appropriate and will employ BMPs for dust suppression during the excavation.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
SOIL REMEDY: EXCAVATION AND OFF-SITE DISPOSAL					
SOIL EXCAVATION AND WASTE					
State					
State Water Resources Control Board[b]					
Store excavated soil in a temporary waste pile for off-site disposal	Store non-RCRA contaminated soil on impermeable surfaces of at least 20 mils, when supported by a foundation, or 60 mils, when not supported by a foundation; control windblown dispersion and precipitation runoff and runon; inspect the temporary pile weekly and after storms to ensure that the controls are functioning properly; and inspect the accumulation site for contamination and remediate as necessary.	Temporary storage of non-RCRA contaminated soil	California Health and Safety Code § 25123.3(b)(4)(B)	Relevant and appropriate	The Navy accepts the substantive requirements of this provision as ARARs for the temporary soil staging pile. These requirements are in addition to, and affect the design of, the temporary staging pile regulations identified as federal ARARs.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
SOIL REMEDY: EXCAVATION AND OFF-SITE DISPOSAL					
SOIL EXCAVATION AND WASTE					
Excavation	Stormwater discharges from construction activity are prohibited without a permit. BMPs, stormwater controls, numeric effluent limits and action levels, and monitoring of stormwater discharges are required.	Construction activity that disturbs at least 1 acre	SWRCB Order Number 2009-009-DWQ as amended by 2010-0014-DWQ	Applicable	The soil excavation will affect more than 1 acre. The Navy will include BMPs, stormwater controls, and monitoring in the remedial design. Pursuant to CERCLA § 121(e), the Navy is not required to actually obtain a stormwater discharge permit; however, the Navy will use the substantive provisions of the state stormwater discharge permit as a means of complying with the Clean Water Act ARAR.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
GROUNDWATER REMEDY: EXCAVATION, BIOSTIMULATION, IN SITU SOIL MIXING WITH CHEMICAL OXIDANTS, MONITORED NATURAL ATTENUATION[c]					
IN SITU SOIL MIXING WITH CHEMICAL OXIDANTS					
Safe Drinking Water Act (Title 42 U.S.C. §§ 300[f]-300[j]-26)[b]					
Mix chemical oxidants with soil to treat groundwater	The underground injection control program prohibits injection that allows movement of chemicals into underground sources of drinking water that may result in violations of maximum contaminant levels or adversely affect health.	Injection into wells that are not defined as Class I, Class II, Class III, or Class IV wells	40 CFR §§ 144.6 and 144.12, excluding the reporting requirements in §§ 144.12(b) and (c)(1)	Applicable	These requirements apply to the mixing of chemical oxidants with soil to treat the groundwater. There are no current or potential sources of drinking water on NAVSTA TI, so none of the injections will be into sources of drinking water. Nor will the injections cause movement of chemicals into potential sources of drinking water. The Navy will use the basic information requirements contained in 40 CFR § 144.83 as TBCs for complying with the requirements in 40 CFR § 144.12(a).
GROUNDWATER MONITORING					
Resource Conservation and Recovery Act (Title 42 U.S.C., Chapter 82, §§ 6901-6991[i])[b]					
Monitor groundwater	Owners or operators shall continue monitoring during the active life of the regulated unit and during the post-closure care period unless the owner or operator can demonstrate that the unit has been in compliance with the water quality protection standard for 3 consecutive years and all waste and contaminated material has been removed or decontaminated.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.90(c)	Relevant and appropriate	The Navy has identified these requirements as relevant and appropriate for monitoring the groundwater after the petroleum hydrocarbons have been removed and treated. The Navy will continue to monitor the groundwater to demonstrate that the cleanup goals have been met for a period of 3 consecutive years.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
GROUNDWATER REMEDY: EXCAVATION, BIOSTIMULATION, IN SITU SOIL MIXING WITH CHEMICAL OXIDANTS, MONITORED NATURAL ATTENUATION[c]					
Monitor groundwater	Owners or operators of a RCRA surface impoundment, waste pile, land treatment unit, or landfill shall conduct detection monitoring for each regulated unit.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.91(a)(1)-(4)	Relevant and appropriate	The Navy has identified these requirements as relevant and appropriate for monitoring the groundwater.
Monitor groundwater	Chemicals of concern are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from the waste contained in the regulated unit.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.93	Relevant and appropriate	The Navy has identified these requirements as relevant and appropriate for monitoring the groundwater.
Monitor groundwater	The point of compliance is a vertical surface, located at the hydraulically downgradient limit of the waste management area that extends through the uppermost aquifer underlying the regulated unit.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.95(a) and (b)	Relevant and appropriate	There is the potential for the arsenic-contaminated groundwater to discharge to the bay at concentrations that pose risk to aquatic receptors in the bay. The Navy is addressing this risk in the selected remedy for groundwater and has identified a remediation goal for surface water protective of the aquatic receptors. The point of compliance for the remediation goal is in the bay.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
GROUNDWATER REMEDY: EXCAVATION, BIOSTIMULATION, IN SITU SOIL MIXING WITH CHEMICAL OXIDANTS, MONITORED NATURAL ATTENUATION[c]					
Monitor groundwater	General water quality monitoring and system requirements	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.97(b)(1)(A), (b)(1)(D)(1) and (b)(1)(D)(2), (b)(4) through (7), (e)(6), (e)(12)(A) and (e)(12)(B), (e)(13), and (e)(15)	Relevant and appropriate	The Navy has identified these requirements as relevant and appropriate for monitoring the groundwater.
Monitor groundwater	Requirements for a detection monitoring program.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.98(e)(1) through (5), (i), (j), (k)(1) through (3), (k)(4)(A), (k)(4)(D), (k)(5), (k)(7)(C), (k)(7)(D), (n)(1), (n)(2)(B), and (n)(2)(C)	Relevant and appropriate	The Navy has identified these requirements as relevant and appropriate for monitoring the groundwater.
Monitor groundwater	Requirements for an evaluation monitoring program.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.99(b), (e)(1)-(6), (f)(3), and (g)	Relevant and appropriate	The Navy has identified these requirements as relevant and appropriate for monitoring the groundwater. If detection monitoring indicates a statistically significant release, the Navy will implement evaluation monitoring.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
GROUNDWATER REMEDY: EXCAVATION, BIOSTIMULATION, IN SITU SOIL MIXING WITH CHEMICAL OXIDANTS, MONITORED NATURAL ATTENUATION[c]					
Monitor groundwater	In conjunction with corrective action measures, the owner or operator shall implement a water quality program to demonstrate the effectiveness of the corrective action program. The program shall be effective in determining compliance and in determining the success of the corrective action measures.	RCRA hazardous waste management unit	Cal. Code Regs. tit. 22, § 66264.100(d)	Relevant and appropriate	The Navy has identified these requirements as relevant and appropriate for monitoring the groundwater.
WASTE					
Generate waste for off-site disposal	Person who generates waste shall determine if the waste is a hazardous waste	Generator of waste	Cal. Code Regs. tit. 22, §§ 66262.10(a), and 66262.11	Applicable	These regulations are applicable to any operation that generates waste for off-site disposal. The Navy may generate waste for off-site disposal in construction of the groundwater monitoring wells and with the in situ soil mixing. The Navy will determine whether the waste is RCRA hazardous waste when it is generated.
Generate waste for off-site disposal	Requirements for analyzing waste for determining whether waste is hazardous	Generator of waste	Cal. Code Regs. tit. 22, § 66264.13(a) and (b)	Applicable	These regulations are applicable to any operation that generates waste for off-site disposal. The Navy may generate waste for off-site disposal in construction of the groundwater monitoring wells and with the in situ soil mixing. The Navy will determine whether the waste is RCRA hazardous waste when it is generated.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
GROUNDWATER REMEDY: EXCAVATION, BIOSTIMULATION, IN SITU SOIL MIXING WITH CHEMICAL OXIDANTS, MONITORED NATURAL ATTENUATION[c]					
Store waste in containers for off-site disposal	Containers of hazardous waste must be (1) maintained in good condition; (2) compatible with waste to be stored; and (3) closed during storage except to add or remove waste	Storage of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage	Cal. Code Regs. tit. 22, § 66264.171, 66264.172, and 66264l.173	Applicable	The Navy may construct additional groundwater monitoring wells in conjunction with the monitored natural attenuation and may generate other waste in conjunction with the soil mixing. Waste generated from the groundwater remedy will be placed in containers, characterized, and then disposed of off site.
Store waste in containers for off-site disposal	Inspect container storage areas weekly for deterioration	Storage of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage	Cal. Code Regs. tit. 22, § 66264.174	Applicable	The Navy may construct additional groundwater monitoring wells in conjunction with the monitored natural attenuation and may generate other waste in conjunction with the soil mixing. Waste generated from the groundwater remedy will be placed in containers, characterized, and then disposed of off site.
Store waste in containers for off-site disposal	Place containers on a sloped, crack-free base, and protect from contact with accumulated liquid. Provide containment system with a capacity of 10 percent of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner to prevent overflow of the containment system.	Storage of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage	Cal. Code Regs. tit. 22, § 66264.175 (a) and (b)	Applicable	The Navy may construct additional groundwater monitoring wells in conjunction with the monitored natural attenuation and may generate other waste in conjunction with the soil mixing. Waste generated from the groundwater remedy will be placed in containers, characterized, and then disposed of off site.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
GROUNDWATER REMEDY: EXCAVATION, BIOSTIMULATION, IN SITU SOIL MIXING WITH CHEMICAL OXIDANTS, MONITORED NATURAL ATTENUATION[c]					
Store waste in containers for off-site disposal	Keep containers of ignitable or reactive waste at least 50 feet from the facility property line.	Ignitable or reactive waste	Cal. Code Regs. tit. 22, § 66264.176	Applicable	The Navy may construct additional groundwater monitoring wells in conjunction with the monitored natural attenuation and may generate other waste in conjunction with the soil mixing. Waste generated from the groundwater remedy will be placed in containers, characterized, and then disposed of off site.
Store waste in containers for off-site disposal	Keep incompatible materials separate. Separate incompatible materials stored near each other by a dike or other barrier.	Storage of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage	Cal. Code Regs. tit. 22, § 66264.177	Applicable	The Navy may construct additional groundwater monitoring wells in conjunction with the monitored natural attenuation and may generate other waste in conjunction with the soil mixing. Waste generated from the groundwater remedy will be placed in containers, characterized, and then disposed of off site.
Store waste in containers for off-site disposal	At closure, remove all hazardous waste and residue from the containment system, and decontaminate or remove all containers and liners.	Storage of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage	Cal. Code Regs. tit. 22, § 66264.178	Applicable	The Navy may construct additional groundwater monitoring wells in conjunction with the monitored natural attenuation and may generate other waste in conjunction with the soil mixing. Waste generated from the groundwater remedy will be placed in containers, characterized, and then disposed of off site.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12,
FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
GROUNDWATER REMEDY: EXCAVATION, BIOSTIMULATION, IN SITU SOIL MIXING WITH CHEMICAL OXIDANTS, MONITORED NATURAL ATTENUATION[c]					
State					
State Water Resources Control Board[b]					
Monitor groundwater	After suspending corrective action measures, the discharger shall demonstrate compliance with the water standard by individual sampling events for each monitoring point evenly distributed throughout the proof period consisting of no less than eight sampling events per year.	Solid waste management unit	Cal. Code Regs. tit. 27, § 20430(g)(2)	Relevant and appropriate	Once the excavation and treatment of the petroleum hydrocarbons in the Gateview Arsenic/TPH area have been completed, the Navy will continue corrective action groundwater monitoring until the remediation goal is met for eight evenly spaced sampling events for 1 year.

TABLE C-3: FEDERAL AND STATE ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
RECORD OF DECISION/FINAL REMEDIAL ACTION PLAN FOR INSTALLATION RESTORATION PROGRAM SITE 12, FORMER NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Table C-3 Notes:

a Only the substantive provisions of the requirements cited in this table are ARARs.

b Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as ARARs. Specific ARARs follow each general heading, and only substantive requirements of the specific citations are considered ARARs.

c The Navy will implement the excavation and biostimulation of petroleum hydrocarbons in the Gateview Arsenic/TPH area as a removal action that began in April 2016 . ARARs for the excavation and biostimulation components of the groundwater response action are identified in the Action Memorandum and are not identified in this non-SWDA and non-radiological ROD.

§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
BAAQMD	Bay Area Air Quality Management District
BMP	Best management practices
Cal. Code Regs.	*California Code of Regulations*
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DWQ	Department of Water Quality
EPA	U.S. Environmental Protection Agency
NAVSTA TI	Former Naval Station Treasure Island
POC	Point of compliance
RCRA	Resource Conservation and Recovery Act
ROC	Radioisotope of concern
SWRCB	State Water Resources Control Board
TBC	To be considered
tit.	Title
TPH	Total petroleum hydrocarbons
U.S.C.	United States Code

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ATTACHMENT D
PUBLIC MEETING TRANSCRIPT

(Provided on CD)

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PUBLIC MEETING

RE PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN

FORMER NAVAL STATION TREASURE ISLAND

Installation Restoration Site 12

REPORTER'S TRANSCRIPT OF MEETING

March 30, 2016

191 Avenue of the Palms, Treasure Island
Casa de la Vista, Building 271
San Francisco, California

Reported by Christine M. Niccoli, RPR, C.S.R. No. 4569

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CERTIFIED SHORTHAND REPORTERS SERVING THE BAY AREA
ARBITRATIONS, DEPOSITIONS, HEARINGS, MEETINGS, TRIALS

A T T E N D E E S

FACILITATOR:

KEITH S. FORMAN - United States Navy

RESTORATION ADVISORY BOARD MEMBERS:

BECKY HOGUE - TIC/Resident

ALICE PILRAM - Cochair, TI resident

CONSULTANTS, REGULATORS, UNITED STATES NAVY:

BRYCE BARTELMA - U.S. Navy

DAVID J. CLARK - U.S. Navy

YASHEKIA EVANS - Tetra Tech, Inc.

WILLIAM D. FRANKLIN - U.S. Navy

KAREN MILLER - Helios Resources, Ltd.

NATHAN SCHUMACHER - Department of Toxic Substances Control (DTSC)

REMEDIOS SUNGA - DTSC

TOMMIE JEAN VALMASSY - Tetra Tech, Inc.

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PUBLIC AUDIENCE:

ROBERT P. BECK - Treasure Island Development Authority (TIDA)
LASHAWNDRA J. BRESTON - Community Housing Partnership tenant
AARON DALUGDUG - ImageSource
CINDY DELGADO - Community Housing Partnership
MARK DUNLOP - TIDA
FELIPE ESCAMILEA - NBC Bay Area
CHRISTOPHER GLENN - Langan Engineering
CAROL HARVEY - San Francisco resident
JASON HUNT - TI resident
J.L. - TI resident
KATHRYN TOWNE LUNDGREN - Treasure Island Health Network, TI resident
CHERISH MARIANO - Community Housing Partnership
SARAH MENEFEE
TRELEASE MILLER - Community Housing Partnership
LINDA A. MOORE - TI resident
JUANA NUNLEY - Community Housing Partnership
DARA PAPO - Community Housing Partnership
E. REED - TI resident
///

PUBLIC AUDIENCE [Cont.]:

BART RUGO - TI resident

AMANDA SCHARPF - TI resident

RENE STANTON

AMANDA SZTOLTZ - Community Housing Partnership

DAN STONE - Villages

VERONICA TROTTER - TI resident

E. WASHINGTON - TI resident

SHERRY WILLIAMS - Treasure Island Homeless Development Initiative (TIHDI)

NEAPLENSAH YARNHA - TI resident

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TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

WEDNESDAY, MARCH 30, 2016, 6:45 P.M.

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MR. FORMAN: All right. Is everybody --? Okay. Great. So I want to welcome everybody to this meeting tonight. We're going to present to you a very important part of the Navy's environmental cleanup program.

I want to introduce quickly some people first so that you -- you know some of the faces, names with faces.

I'm Keith Forman. I'm the environmental coordinator -- the Navy's environmental coordinator for the environmental cleanup program here at Treasure Island.

With me is -- is . . . Dave Clark.

MR. CLARK: Tom.

MR. FORMAN: Sorry. I'm sorry.

With me is Dave Clark. Dave -- Dave is the lead project man -- lead -- essentially the lead engineer on the project for the cleanup program, the whole cleanup program here, at Treasure Island and Yerba Buena Island.

With him is Bryce Bartelma.

Sorry. I was going to call you D.C., which

we -- anyway, that's on the team. But it's -- anyway.

So Bryce Bartelma here, who's a geologist and environmental scientist, and he is the project manager for a big part of the project, which means that he's going to -- he's going to be in charge of this project not only when we're having meetings like tonight, but when we're actually out in the field doing environmental cleanup.

Also Medi Sunga from the State of California is here, Department of Toxic Substances Control, which is a mouthful of a name for an agency. She's essentially represents the California Environmental Protection Agency as the lead agency. She's a regulator that we are required to work with very closely, and she regulates us, both the decisions and the documents we make and the field work.

And then Nathan Schumacher is also with the State of California, the California Environmental Protection Agency. And he's a public participation specialist.

Right?

MR. SCHUMACHER: (Nods)

MR. FORMAN: And he will be speaking tonight actually on behalf of the State of California.

And then we have Mr. Bob Beck. He's from the

Treasure Island Development Authority. I just point him out because he's also a person that the Navy works with very closely; and he also represents the City of San Francisco and their interests, and the Navy has to work very closely with that.

We also have Alice Pilram here. Alice is the community cochairperson for a board that we have. The Navy runs a board every other month. Our next meeting is April 19th here at the Casa.

And Alice is -- Alice lives here. She's a resident, formerly a resident of Yerba Buena Island and a current resident of Treasure Island. And she cochairs the meetings with me that we have, and you're all invited to that every -- it occurs again every other month. Our next meeting is April 19th here at the Casa.

And then Bill Franklin is with us here. He's in the back. He's our -- he's our public affairs officer. It's been a long time since our command had a professional full-time public affairs officer, and that's Bill Franklin, and he attends these meetings with us.

Thank you, Bill, for attending.

And then we have in some ways the most important person in the room, Christine here. Christine is a transcriptionist. She has to create transcripts by

typing every single word any of us say.

So if I'm speaking tonight or if someone else up here is or if you're speaking tonight, because there will be a period of time when you can come up to the microphone and speak -- and we encourage that -- please just try to speak slowly, as slow as you can and clearly enough where she can understand enough to get down the words. She has a very tough job and very physically in-shape fingers to do her job.

So, Christine, my heart goes out to you. You have a very tough job.

Okay. So we will start tonight. We started off with having poster boards there, and some folks felt comfortable to go up and ask questions. That's great. But now comes a time where we're going to give the formal presentation on our Site 12 Proposed Plan.

Now, each of you should have a copy. I believe there were enough copies for everyone to have a copy of the presentation. It looks like this [indicating].

And you should have a copy if you -- If you don't already have a copy through the mail, you could have picked up a copy here tonight of our actual Proposed Plan, which when you start to read it, I'll acknowledge up front is a pretty technical document in some ways and hard to read unless you are an

environmental scientist and you do this stuff every day; and I understand that and acknowledge that.

This document we did attempt -- seriously attempt to put in as much plain language as we can, but we still have to meet a lot of the legal requirements for what a Site 12 Proposed Plan has to be, and that's why it looks the way it does. And the presentation tonight, I'm hoping, will make it a bit clearer.

So . . . Oh. And if you're a resident, the other handout here -- and I want to thank Mr. Beck for this -- is we are going to have a drop-in question-and-answer session for residents on April 20th at the Ship Shape Community Center. And I will be there, and I believe Dave Clark will be there as well.

And that's an informal session where you can come in with questions, concerns, and talk to Dave and I about environmental questions that the Navy could answer. And then I believe Mr. Beck will be there too, and perhaps some housing providers as well will be at the meeting. And that will be another opportunity to ask really broader questions than tonight.

Tonight we have to focus -- we're required to focus in this meeting on just this site and just our Proposed Plan. So please bear with me, bear with us, if we have to be focused on that. We're required to hold

the meeting that focuses on that tonight.

So it's -- this is not a meeting to focus on other things about Treasure Island or other sites on Treasure Island. There will be other times for that, I promise you. But tonight we definitely need to focus on this.

Okay. So we will have a presentation here, and then we will open up requests for public comments for the record. That's when anyone here will have an opportunity to come up to the microphone, announce your name so that Christine can put that in the record; and then whatever you say is in the official transcript, and that will be part of a permanent record.

So that will become part of the process. It will also be something that the Navy is then required to respond to in writing, okay?

So just keep that in mind that -- gather your thoughts, come up to the microphone, announce who you are; and then whatever you want to say -- it can be a question; it can be a comment, anything you want to say, that's fine. But Christine does have to get that down word for word, and then the Navy's required in writing in our next document to respond. Okay?

So with that, we will move on to our presentation. And already I think we're up against a

challenge here. I hope you can see that with the sun at this angle. Can you? Some of you are nodding yes. Okay. I hope so. If not, take this opportunity now if you want to move around the room and get a better view of it.

Okay. So there is a process. For everything in the government, of course, there's a process, right? Environmental cleanup of this island and of this site, which we call Site 12, is no exception to that. There's a process.

And there's a whole process that takes years and involves different steps. And each of these steps is named here [Slide 3]. And you can also read this in your handouts when you take them home.

But I just wanted to let you know, the take-away from that slide is we're right here [indicating]. So we started here [indicating]. We've done a lot of gathering of data. We've done a lot of testing in the soil of the groundwater in your neighborhood, in residential neighborhood, which is Site 12.

And we're to the point where we've analyzed all that data. We've come up with different choices, and tonight we're going to review this document called the Proposed Plan/Draft Remedial Action Plan, a mouthful for

a document, right?

Well, I'm only half responsible for that as a federal guy. So I represent the Navy, U.S. Navy, which, of course, is the federal part of it, right? Our title for this document is called the Proposed Plan. Medi's and Nathan's, represent the State of California, their title for this document is the Draft Remedial Action Plan; and that Nathan Schumacher will talk a little bit about that after I get done with my part.

But I just want to let you know, we are right here [indicating], which means -- what does this really mean? Tonight we're going to show you what the Navy's recommended course of action for this particular site is, okay? And that's where we're at. We're proposing that. And we need community input, and part of that is tonight to get input on what we're talking about and what our recommendation is.

Now, we couldn't get to this point if we hadn't done a lot of testing and analyzing and also working closely with the regulators, the State of California and Regional Water Board, because they agree -- they concur with our choice for the Proposed Plan -- this Proposed Plan.

So you need to know that -- that we've already worked with the regulators, as we are required to do.

And so it's the Navy's Proposed Plan and Draft Remedial Action Plan, but the regulators have already weighted heavily on looking at every aspect of this and -- and are ready to move forward with us in agreeing to make the -- the choices that we think are the best for this site. So we'll get into those details just shortly here.

Okay. After this, I just want to tell you, is the next step which will happen this summer is another document. It's not field work, but it's another document. It's called Record of Decision, and that's when you go from a proposal here to the actual formal decision. Okay? And we only do that once we've had more regulator input, more city input, and more resident public input.

And every one of the comments that you make tonight with the microphone or any of the comments that you E-mail to me, because I do get E-mails with formal comments on this too, or any letters you send me have to be put in this record.

And there's a section of that record, that Record of Decision, where we have to show that in writing what you've either said or written; and then the Navy's required to formally respond to you, and that's part of the permanent record forevermore. So that's

part of the process.

Okay. Let's move on.

All right. So this Site 12 Proposed Plan, this document, if I could have your copy here . . . Very good. Okay. So this document here. This is the actual document [indicating] that we have worked on with the regulatory agencies. This is out to public comment, and we are having this meeting, right? Today is, what, March 30th, and it's in the middle of the comment period or between March 21st and April 21st. So there's a 30-day public comment period.

And following that comment period we will respond to all the comments that I just talked about. Okay? And then we have to put them again in the next step, which is the Record of Decision, which is just a formal name for the next step where it's not a proposal anymore; it's an actual decision.

Okay. So this proposal that we'll get into the details here in a few minutes, okay, the Navy proposes -- this is in a nutshell, okay. If you want to take just a few-second take-away of this meeting tonight, here's what the Navy's done: We have done all this testing and sampling, all this analyzing, all this considering with the regulators and the regulators telling us what we need to do.

And what we're going to do in broad, broad terms, we're going to remove contaminated soil for off-site disposal. So there's areas we know underneath the ground that have certain chemicals or metals that we are going to go dig them out and haul them off the island to a proper landfill.

We're going to chemically treat some petroleum that's in the soil in -- particularly in one area that we'll talk about, in the Gateview area. And we're going to -- we're also going to treat arsenic in the groundwater in the very same area. And Bryce will tell you about that and why they are connected and why it's really one par -- part of one project, single project, to do both those.

And then we're going to monitor the groundwater for that arsenic after we do the digging. That monitoring is a requirement the regulators put on us because they very wisely say, Well, we want to make sure that what you did over the long term actually works.

Okay. So here's something very important that if you came early and talked to me, some folks we discussed, this is the limiting factor tonight I have to tell you about: This Proposed Plan covers most of the residential neighborhood, but not all of it. There are solid waste disposal areas that are behind those green

fences that you've seen. This plan does not address those. That's in a different plan that we're going to discuss at a different -- at a later date.

And it also doesn't discuss radiological cleanup because that is coupled with this in a different plan. So when it comes to radiological issues, radiation issues, as I have been saying to some folks here tonight, I'm more than welcome to discuss those, but not tonight. We can't do that tonight because we are required to focus on this particular plan.

And this plan addresses again the groundwater problem, the subsurface groundwater problem that's in one area of the neighborhood -- and we'll show you that -- and then the many areas that have places where we need to go and dig and remove that -- the soil. Okay?

All right. So now I'm going to introduce Nathan Schumacher from the State of California, and Medi here is, of course, too. She's the regulator, and he's the public participation specialist. He's going to talk about the role of the State of California and their side of the -- of this document.

So Nathan.

MR. SCHUMACHER: Thank you.

The decision that the State of California makes

is called the Draft Remedial Action Plan, or Draft RAP, same as the Proposed Plan in this case.

So if you look at the slide, you'll see that we do have something called CEQA that we have to do, California Environmental Quality Act. What that requires us to do is look at the negative and positive impacts of what we're proposing to do, in this case the Draft RAP or the Proposed Plan, and evaluate those impacts, negative or positive. We have done that evaluation and fulfilled that requirement.

Next slide.

And we have come up with a decision. Some of you may remember back in February we did have public comment period on the Draft Negative Declaration which specified certain impacts that we have evaluated for Site 12.

If you commented then, you'll have already received from us a response back in March or so when we send those out. And so we already made that Negative Declaration saying what the impacts we have found with this proposed decision.

That Negative Declaration is the basis for an addendum, which we have now written and which you can look at, which talks about all of the negative and positive impacts for this proposal.

So that will be available in the repositories that are listed, the San Francisco library downtown on Larkin, also here at the caretakers office here on the island and also down in San Diego if you want to go down there. So that's where the document will be available for your review if you'd like to look at it.

This is -- So this is our process, that we look at all of the impacts and come to the best decision in terms of we don't believe that the negative impacts outweigh the positive ones, and we don't believe that -- we do believe that this is a good proposal. And so we are recommending that the Navy go ahead with this proposal at this point in time.

All right. Then that -- this [Slide 8] is where it's available. It's also available in Berkeley. You can call for an appointment if you want to go over to Berkeley and see it there. Okay.

Keith?

MR. FORMAN: Yes. All right. Thank you, Mr. Schumacher.

Okay. I talked about how the Navy has to work with the regulators, and this is one set of regulators here.

There's another set that many of you that have been to our other meetings know about; and her name is

Myriam Zech, and she works for the Regional Water Quality Control Board, very important regulator. They regulate surface waters, like the bay, but also groundwater, the water beneath the surface, of an island that can sometimes get contaminated. In this case, there's areas where there's contamination, and the Navy needs to take action. So she meets with us, reviews all our documents, and provides input.

She could not make it tonight, but she sent a slide. This is the slide [9], and it says the Regional Water Quality Control Board has reviewed and concurs with this document, the Proposed Plan. It has a particular importance to her that Bryce will talk about in the groundwater aspect of it and the treatment that has been co-selected by us and by the Regional Water Quality Control Board.

Here is -- I believe you have a copy of the handouts again. But here's her contact information. Don't hesitate to call her or E-mail her if you want to talk to her and see her point of view in a conversation that you can have with her. All right.

Okay. So next slide.

All right. So now I'm going to introduce Dave Clark, also known as D.C., on our team. And Dave again is -- he's the senior engineer on the project for the

whole cleanup program for Treasure Island and Yerba Buena Island. And he's going to talk to us a little bit about the background that has been researched and investigated for the residential neighborhood known to us also in the program as Site 12.

MR. CLARK: All right. Good evening, everyone. Thanks for coming out.

Before we get into some of the technical information and the -- all the data, as we like to call it, which was basically the "what" we'll be talking about, what's at Site 12 and what we're going to do about it and what we have been doing about it.

But for a little background, we're going to try and -- I'm going to try and talk about the "why," why are we here, how did it get there.

And so we'll serve packets into two slides: the decades of history of Site 12. And a picture's worth a thousand words, so we're starting with aerial photographs. We're very fortunate to have a good set of aerial photographs that -- that we use throughout the process to figure out what happened, you know, back in 1945.

We, of course, know that Treasure Island was built in the '30s, and Site 12 was actually the parking lot for the 1939 exposition. There was also a gas

station for the parking lot, which we will get to in a little bit later, that proved to be a historical significance.

But just so you know, what was it in the beginning? It was a parking lot. And when the Navy got the property, that parking lot was being partially converted into an airport. Treasure Island was supposed to be the San Francisco Airport, but the Navy traded property, which is currently SFO, with Treasure Island for a number of reasons.

The plane technology was just getting far too good, and the runways were getting too short. So they decided this would not be the best place for an airport. The Pan Am clippers, of course, did dock here for many years because they use the bay as the runway. So that worked out fine for them.

But we did build a couple of runways. And, of course, Building 1 was supposed to be the terminal and -- for the airport. And it was used as that for a few years, but no longer.

And so with that in mind, we can fast-forward to 1945 and the picture in your packet, 1945 [Slide 10].

And when the Navy acquired the property during World War II, there was some ammunition storage in the bunker areas. And a large chunk of the property, right,

northern area, was the bunker area. That's what we used it for.

There is also recreational fields. All of Site 12 was not used for some sort of a military purpose that really was used for wartime efforts, but we did have recreational fields and then just general storage areas.

And then we will talk about the significance of the runway.

The old bunker area wasn't used for very long, just a couple years. And eventually we -- there was no ammunition stored there. The bunkers remained, but it was a convenient place out at the northern end of the island to take the trash and other materials that were generated during the war and generated by the naval station.

So it was away from everyone. So you'll see in aerial photographs little -- little piles between the bunkers, and those piles sort of expanded through the years.

And then you have the air runway. The runway was interesting 'cause it was a very -- a straight path to the corner of the island. And what we have discovered was that through the years the Navy took its materials from various -- various places throughout the

island and buried -- buried them at the end of the runway.

They actually started digging trenches down through the groundwater, pushed the material in the trenches, and then -- and then covered them up. And this continued for -- for quite a few years; and -- and, of course, we're -- we're digging up the material right now.

So that's -- when you see the runway, you'll see that this was the runway from the beginning basically of Treasure Island up until when the Navy had it. And then eventually it was removed, and then we used it to dispose the material at two sides of the runway.

Now fast-forward to 1968, and you'll see that we have a couple of things of note. The northern area still -- you still have the bunkers there, but the Navy was going to use the area for housing. And the first phase of housing was built in 1968 and was the 1100 series housing.

Now, from historical documentation, we know that we told the contractor to go out to the site, remove some of the material and take it off site, and then prepare the site basically for construction. And it was a lot of foundation preparation.

But not all the material was removed. It was basically compacted. Some of it was removed. And then topsoil was brought in, and then the foundation's built on top of that.

And so we did that section by section, and you can see the 1100 series, first series to be built. And at the same time you'll see historical remnants of what we did between the bunkers.

Back in the '40s it was pretty typical to have open burning to get rid of the trash, and that's what the Navy did until the City of San Francisco called us and said, Could you please stop doing that.

And then we built the incinerator. Historical incinerator was up at the northern area as well. It was called the beehive incinerator due to its size and its shape, and that basically processed all the trash for Treasure Island for -- during the 1950s.

Eventually got another letter that said Stop doing that, so we did. And we ended up basically shipping it off to off-site landfills.

But you still have the remnants of that old activity. So you have -- under the ground you have areas where we're finding burnt wood, burnt metal. And this is what we're removing now. And we call them solid waste disposal areas.

Those are things that Keith mentioned that we're not necessarily addressing in this project, but they are another phase of an ongoing project. Most of the residents you know -- you know where that information -- where that project is taking place.

Now, if we move forward to another interesting thing: Remember 1939, the parking lot. That's where the old boil station was for the cars. And that is why we have an oil problem in that particular area 'cause the tanks leaked. Just like every other tank in the San Francisco Bay area or across the country, the fuel tanks leaked.

And we tried to clean it up during various methods, but nothing fancy worked. So as Bryce is going to tell you, we're going to dig it up.

So that's how this got there and why it's unique. And you don't see any other real petroleum issues like that because we didn't have any other gas stations of that nature in that area.

So this is for 1945, 1968, and then you'll see the housing that was constructed.

Now, this is where I think I'm going to talk about two different phases of basically the -- the material at -- at Site 12: burial, and then we took some of it up. Some of it we -- we also graded the

material.

And basically, when they were constructing the housing, they pushed some of it around. Now, not a lot, but enough to where now we have to address the issue. And when you talk with Bryce, you'll see that we basically took samples all across Site 12 to figure out where this was.

Moving on, 1975. You'll see [Slide 11] that this continued. And so again, the key thing to remind is we have the burial issues which we're dealing with, and then you have basically moving some little bits of material from place to place across Site 12. And that really is why it's so hard to figure out where this material is because there's no record of, you know, what exactly was pushed where except for the outlines of the housing.

We do know each outline of the housing, and so we know that there was fences in certain places. So you only get pushed one direction or the other.

And then the 1400 series was basically pretty much left alone because it was isolated from the rest of the site. 1200 series housing was built after the 1100 series and then after that the 1300 series along the western seaboard there. And then the 1400 series, as mentioned, in the -- in the '80s, which was built as

well.

So that's a little bit of the history. Lots of documents in the information repository if you want more further reading. But we'll always be here to answer other questions you have about the site history because it's long. But that's sort of it in a nutshell.

So Bryce now is going to talk about the data. This is just a figure to impress with the numbers, right?

MR. BARTELMA: Yes.

Hi, everyone. Thanks. And again, I'm Bryce Bartelma, the project manager for Site 12, the chemical cleanup.

And as these guys mentioned, you know, the material, not a lot, but some was graded when they did the housing development. And so we kind of didn't really know where that was, right? So we had to basically sample the entirety of Site 12 to try and find out where it was clean and where there was chemicals in the ground.

And we started this back in 1999. So you guys have probably seen us in the neighborhood for a long time now.

And we have done a lot of sampling; and a lot of effort has gone into gathering this, over

2,000 locations that we have sampled across the whole Site 12; and it's basically each one of these little dots [Slide 12], so to speak, is one of those locations. And within each one of those locations, you know, numerous samples at each one. 31,000 samples we have collected within Site 12. That's a heck of a lot of data.

And guess what, it wasn't enough. We had to go back in 2013 and 2014, and you probably seen me here at past meetings talking about the data gap investigation. Here's areas where we didn't know -- was there -- did the contamination extend further or not? We hadn't sampled beneath buildings.

So we did a lot of additional work in 2013 and 2014 to fill in those -- quote, unquote -- data gaps and completely define the nature and extent of the contamination, so to speak. That's our goal.

So now that we have got all the information we need, we feel like we have a really good cleanup plan, and that's why we're here presenting our Proposed Plan tonight.

Okay.

Okay. So you might be asking yourself, what are these chemicals that we are looking for? And we have narrowed it down from a huge -- We have analyzed

those 31,000 samples are for dozens and dozens of different chemicals, and it's really just the -- these four [Slide 13] that are of the biggest concern here:

Lead, which we all know about, is a common metal that we see; but it, you know, was in a lot of different products. And during the grading -- or burning of this material, you can get lead residual.

PAHs I won't go into the -- I'll just -- I'll leave it at PAHs. It's really just a leftover by-product from burning.

And the same goes with dioxins, really. That is just a product of the burning and incinerating that had been done back in the day.

And then the other chemical, PCBs, which you probably heard of before, it's used in a lot of electrical equipment; and, of course, electrical equipment can be more or less spills, and that's how that gets into the environment as well.

So those are all the soil chemicals.

In groundwater we have kind of a weird situation here where we have petroleum that's causing arsenic to get into the groundwater. The petroleum itself, we say it's not a COC, but it is an area we're addressing.

Petroleum is causing a situation where

naturally occurring arsenic in the soil or rock is basically leaving from a solid state into a liquid state, and it's being caused by this petroleum.

So by addressing this petroleum, we can help address the arsenic in groundwater. And so that's what we're chasing here. The actual risk, so to speak, is this arsenic. We don't want it to get out to the bay. So by addressing the petroleum, we can -- we can prevent that.

And then just some other cleanup areas: chromium, another metal, four real small locations. I mentioned this TPH, petroleum --

Sorry.

MR. FORMAN: No problem.

MR. BARTELMA: -- petroleum, and then two locations for pesticides as well.

Okay. So if you've participated in previous presentations where we talked about what we call a feasibility study, I've actually given some presentations on that, and that's a huge part of what this is here.

We are looking at different alternatives that can accomplish our goal. And for soil we really have three choices, and here they are here [Slide 14]:

One, no action. Obviously, this isn't

something that we're going to do, but we look at no action as a means of comparing to the other alternatives.

Two is a cover or excavation -- or "and excavation." I'm sorry.

And three just being excavation and taking the soil off site. And as Keith mentioned at the top of this, that's our preferred alternative. So we're looking here at Choice No. 3.

And then with groundwater there are five choices to clean up the arsenic we just talked about. And I won't go into great detail with all of these. If you do have questions, I'm happy to answer them. But our preferred alternative is No. 5 here. It's the most comprehensive of all of them, and we will talk about how it meets our criteria and our objectives the best, is the best performing.

Okay.

And so here's [Slide 15] the criteria that go into doing a feasibility study and then tonight here the Proposed Plan. There's threshold criteria and balancing criteria. That's the feasibility study stage. And what does all that mean?

So the minimum requirements, threshold criteria, we need to protect human health and the

environment. That's obviously our standard. We have to do that. And we also have to be compliant with law. And that's what that -- this is saying here.

After we meet those minimum requirements, then we look at other things. How effective is it in the long term? How effective in the short term? Can we even implement it? And what does it cost? Those are the types of things that we are looking at for those different alternatives to see which one is going to be the best to take the site forward to clean up.

And then the last piece, this modifying criteria, that's basically why we're here tonight. The Navy is putting out its Proposed Plan. We have concurrence from the regulators, and we're looking for -- from in -- for input from the community. And that's basically this right here. That's where we're at.

Okay. So for the soil alternatives, here they are [Slide 16], 1, 2, and 3, and those criteria we just talked about right down the list there. And we literally look at each one, one by one with the criteria, and we basically rank them. Sometimes these are called pie charts. Sometimes they call them meatball charts. But really all it's saying is how effective is it.

If it's a blank circle, it's not effective. If it's completely filled-in circle, it's highly effective, and then there's a ranking in between.

And so we go through and we do that, and we rough-calculate some costs for those different alternatives. And this is the -- I guess, the summation of that for the soil alternative.

And as we mentioned, Alternative 3, we feel, is the best to meet all the criteria and clean up the site. Now, you'll notice this is the most expensive one. We do look at cost; but in some circumstances when we know this is going to be a permanent fix, completely eliminate the contamination, then the Navy, you know, will do the right thing and remove it, excavate it.

Okay. And then for groundwater, it's the exact same thing, five alternatives, five choices across the top, looking at all the different criteria.

Obviously, no action you see [Slide 17] being not effective at all. It's not a huge surprise there.

And then these alternatives actually they start to look similar in their effectiveness. Two of them stand out, 4 and 5, as being the most effective; but you know, these ones aren't half bad either.

So then we start to look at cost too. And Alternative No. 2 is incredibly expensive. And we can

have a long discussion about what a permeable reactive barrier is, but it requires a lot of maintenance, and it doesn't necessarily get us to effectiveness in the short term. So we're going to eliminate that one.

And then just to kind of fast-forward on it, between 4 and 5, we're looking at these two here as being pretty similar in how they meet all the different criteria, 5 being slightly cheaper and having more options for how we can address the contamination. So we feel like that one is the appropriate one, and that's why that's our preferred alternative for that one as well.

Okay. So going forward with that, here [Slide 18] is Site 12, and hopefully everybody can see this now. But all the purple dots -- and this is not to scale, mind you. That's the size of, you know, semitrucks or something like that if you were to say it's scale. That's not it at all.

These are isolated locations, for the most part. There are some larger ones but, for the most part, small isolated locations where there are chemicals from that past grading activity that Dave was talking about. And -- and here's where they are all on the site.

We've mentioned that there are ongoing removal

actions, and you guys have seen us in the neighborhood for a long time. So this map represents a comprehensive look at all the chemical locations that need to be addressed.

But some of these are probably being addressed -- or, I should say, are being addressed right now or in the near future. And because some of these locations are right along the borders of the solid waste disposal areas, it makes sense, since they are already out there, to get that cleanup done as part of that action.

And so if you want to hit the -- if everybody can see that. It's probably harder to see.

There's maybe a dozen or so locations that are currently being addressed as part of the removal actions in the solid waste disposal areas.

We have another removal action that we are going to be starting up this summer. I presented on that as well. The primary -- primary location is this one right here.

This is that petroleum big area that we talked about. Dave pointed out that oil tank that had leaked. It has been there for 50, 60 years. So, you know, what started out as maybe a leak from a tank has spread, obviously. And as Dave mentioned, we tried fancy things

in the past to try and treat that, but good old-fashioned dig it out and haul it away is probably going to be the only thing that works for dealing with that.

And this is tethered to the arsenic problem, right? So the petroleum is causing that arsenic to get to the groundwater. So we feel if we dig out that area, we will improve those arsenic concentrations. And it's kind of hard to see, but it's -- the arsenic area is basically overlapping with it and maybe a little bit right here [indicating].

And then as she just had bounced in here all these different locations, this is the work in Halyburton Court. And you guys have seen those fences there for 20 -- 10, 20 years? I don't even know how long it's been there. But there's still some work to be done in that area.

There's been an extensive removal action that's been done. But they dug out everything around the buildings. And in that particular area, the contamination extends beneath the buildings.

So this summer we are going to actually be demolishing those buildings. You may have received a notice recently about the demolition going on in those areas. There's four buildings specifically in that

particular area that need to be demolished, and we have to excavate out the soil beneath those buildings, and that's basically what all those dots represent.

Now, because we're going to be down here [indicating] and because we're going to be right here [indicating], we thought, Well, why don't we grab these dozen or so locations that are, you know, around the southern portion of Site 12, just because we're going to be in that part of the neighborhood and -- it just makes good sense financially for us, and -- and so it gets it done.

And that's -- they have been highlighted here, but all those blue ones represent work that we are going to doing here this summer.

And so the last piece is just the remaining areas which you can see here.

Tommie Jean, you can hit that.

You can see there's quite a few locations, and it's primarily this northern or eastern section of Site 12. Okay.

And this [Slide 19] is a similar map. Doesn't have all the dots on it but shows what buildings are going to be affected by the different phases of work.

Now, obviously, you know the buildings that have already been demolished or that are behind fences.

Those are the pink ones. It's work that's currently been ongoing and hoping to wrap up yet this year.

The blue ones, which I talked about just a minute ago, that's that future -- this summer still, but this future removal action.

And then the green ones which are -- is the last phase of work to be done, likely in 2017 or, as we had talked earlier, maybe slipping a little later than that, but that's still a year away.

And so I think that's it for that slide.

MR. FORMAN: Okay.

MR. BARTELMA: Keith's going to talk a little schedule.

MR. FORMAN: Okay. Excuse me.

All right. So again, this [Slide 20] is where we are tonight at the Proposed Plan. And you can see in a nutshell we have identified the chemicals. We need to go out and do digs to remove them.

So they are located under the ground. We have to go there, set up an operation, dig it, remove it, and then cart it off to a landfill.

When it comes to the groundwater site, right, at -- which is at Gateview Avenue there, right there [indicating], he told you about what we're going to do there, which is -- basically involves a big dig to get

out some really old petroleum that is liberating the arsenic in the rock there and soil there into the groundwater.

And that is a problem that has also been studied by the Water Board, and their major concern is it's not -- it's not a drinking water issue at all and it's not a human drinking water issue at all. It's that that arsenic in the groundwater eventually will flow out to the bay, and they want us to clean it up so that it doesn't impact San Francisco Bay. That's their concern with that issue.

So -- and again, I need to bring this up because this is a very important issue. And we're not ducking this at all tonight, but it's just not something that we can talk about tonight because it's outside of this focused meeting, and that's the radiological process.

That is an independent process that next year we will be doing -- focusing solely on that with its own separate dedicated meeting, okay? I assure you of that. But that's a different part of the program, and we need to do this part first because we are further along with this. Okay? So the radiological issues will be addressed in a later meeting.

Okay. Next slide.

So here's what it comes down to for input: There is a 30-day comment period that the federal law says you need to have. And our federal comment -- federal comment period is March 21st to April 21st. Okay?

So there's a number of different ways you can let your voice be heard in this process.

You can mail -- I have my address here. You can mail me a letter, and some folks do. You just need to postmark it by April 21st.

You can send me an E-mail at this E-mail [indicating], and it's also found in the Proposed Plan. And that's probably the most common way I get input is from E-mail.

Or you can come up to the microphone here in a few moments, and you can comment for the record tonight.

So at this point in the meeting, you -- if you wanted to leave, if you had to leave, the presentation part is over. But if you want to stay and listen to folks comment, that's fantastic. If you want to make a comment yourself, even better, because we like to get input, like to get comments.

Again, these comments, when you come up to the microphone, please state your name first clearly so that Christine here can put your name to the comment. We are

required to do that.

And then speak as slowly and clearly as you can. And I know it's sometimes nerve-racking. Not everybody does public speaking for a living, and it can be a little nerve-racking. We're patient with you. Just take your time. Take a deep breath and present your comment or question for the record.

Now, one thing we're required to do is sit here and listen to you along with the regulators. What we can't do tonight is answer your question because they are for the official record and we are required to take those back and then answer them in writing -- okay? -- and then present that to the world. Right? It will be disseminated. It will be on our Web site, in our documents, in the --

If you can go back one slide, two slides. Right there.

In the next step, the Record of Decision, we are required to document those and answer every one of them, show our answers to the regulators, get blessing on our answers, and then put them out for a permanent record, okay?

So to do this in a nice way, you don't necessarily have to line up down the middle here, but I'm counting on everybody being nice and civilized to

each other and then come up one at a time to the microphone and, again, clearly state your name. If you need to, take a deep breath and then go ahead and speak into the microphone, and we will all be listening.

And your comment then will be taken down into the permanent record and then will be responded to by the Navy in the next document. And that next document, by the way, the draft version of that is coming out this summer, in a few months. Okay?

Having said it, I want to say before we head out into this next session, thank you very much for coming here. Really appreciate the questions and comments we did get, and I look forward to hearing to your comments now.

So we will begin with the public comments. So first person up the microphone.

COMMENT

BY KATHRYN LUNDGREN:

Kathryn Towne Lundgren, resident, Bayside Drive.

All right. So there's a couple things that were brought up that weren't actually written in here. But you mentioned that there were transcripts, all of which from previous meetings I've never been able to access for some reason. So if you could address that in

a future E-mail to me and kind of guide me to where these transcripts are word by word, that would be really helpful to us.

So I don't see the Water Board, which you mentioned. I also don't see the EPA or CDPH or SFDPH or anyone else involved in the regulatory positions. It would be just a common courtesy, if they are so involved in this, to start showing up to these meetings, including the RAB meetings. Maybe the regulators could pass that on to your peers.

So you mentioned that the soil was contaminated enough to be removed and put in a separate site. And you -- as you know, I mean, this is the soil that we step on. So in these sites that we've used over and over again that you've now suddenly closed off, we have been exposed to all of these things.

And so when you go through your, you know, project breakdown and you start evaluating the risks, the negative impacts that you're saying are not important truly are. We've already been impacted. And as you excavate these sites, you aerate, you lift, you disturb the soil. The wind carries it.

I've already said this in a million RAB meetings but to have to repeat it. Those types of things are not evaluated properly on -- from our

perspective. They are evaluated on what you're willing to risk, not on what we're willing to risk, which is nothing.

So we're sitting on these sites, SWDAs, radioactive, chemical. You're separating the radioactive issues with chemical. They are just about equal in number of contaminants or isotopes. Yeah, they are, actually. When you go back through your records and you start -- you started naming each and every one, there's quite a few more than you are concerned with. But we're concerned with them.

And since you've told us already that you do not know where all of these things are because of past behaviors, you cannot sit there and still continue to this day to guarantee us that we are safe, that no one will ever breathe it, no one will ever touch it, and no one will ever get it into their mouth. You can't tell us that.

Again, I've asked for you to put the air monitors at different levels. The wind doesn't move in a linear fashion. It goes up and over. It goes down and under.

The same with the water movement, which you say you don't want it going into the bay, but it already is. We have major flooding. The last major rainstorm, sir,

we had the power go out. The streets were completely flooded. They were up to here [indicating]. Children were playing in it. Right into the bay as soon as pumps got turned back on.

So this is not something that, you know, we take lightly, nor do we evaluate what we are seeing every single day in the same fashion that you do. You need to actually break down a little bit closer to our level and our exposure rate. You need to start calculating it that way, and you need to start presenting it to us properly.

And it's not too technical. It really isn't. It's -- If you can read, you can figure this out. So that's slightly insulting.

So we need to know what chemicals you're going to use to treat the chemicals and after that where those chemicals going to be present in the soil. What chemicals are you using to treat the arsenic and the --?

MR. BARTELMA: It's adding oxygen.

MS. LUNDGREN: Just oxygen?

MR. BARTELMA: Yeah.

MS. LUNDGREN: Well, then why call it chemicals and not just say oxygen?

MR. BARTELMA: Well, it's called oxygen.

MS. LUNDGREN: O2.

MR. BARTELMA: ORC, oxygen release compound.

MS. LUNDGREN: Okay. Well, I mean, that's so much more simplified. I can't imagine why you wouldn't have just said that, 'cause that makes us wonder what you're putting in there that's going to stay in there even afterwards, and then you won't be talking about that because you'll say that you did your job.

Okay. And the other question is, We -- I'm sure it has something to do with the Congressional funding, et cetera, et cetera. But why are you separating the radiological surveys and remediation from the chemical surveys and remediation when actually you're moving the same soil?

So when you're not looking for radiation, you're allowing yourself to move that soil in and around the neighborhoods, okay, because you're saying -- and in that process you're also finding more and more and more radiological or radiologically challenged, in my laymen's terms, objects.

You're finding ammunition in the burn pits. And they are pits. If they are below 4 feet to 8 feet, as you said in one of the RAB meetings, that's a pit. That's not an area. Okay.

So the burn pits and the other one you've not addressed on Bayside: Dioxin is extremely toxic, okay?

It's not a simple thing. That alone should be a reason for you not to let anyone on Bayside Drive live there. Dioxin, Iraq. That's all I need to say. You are the military or you work for them. You know, dioxin is deadly.

Arsenic is not naturally occurring if it's a by-product of petroleum breakdown.

Quit changing up the terminology and making it seem as though it's something so simple and so lighthearted. None of this is lighthearted.

This is an entire area of which Bob Beck has said in TIDA meetings they cannot put buildings back there. Their plan is to cap and fill it because it will not ever be up to standards for new homes.

So why, I ask you and you, are your risk assessments not revealing the truth and not moving us off of there at the expense of the city and the Navy? I'm sorry if that's going to cost you, but do you know what it's costing us? Do you honestly understand what you are telling us to accept?

And yes, I'm angry and I've been angry. I've asked you politely. I've asked you rudely. I've asked you in any number of ways to get down to the bottom of this.

It's unfair for you [indicating] or you

[indicating] or this entire U.S. naval situation, these people who supposedly are here to protect our freedom and our rights, to ask us to sit on this while you pretend that you did not know, as if that's an excuse for what you do know now.

From the first time I spoke to you, you talked about radium. That was your only concern at that time. Then you found cesium; you found technetium; you found all sorts of other things that were listed in your own paperwork. And then we did our research.

And then you sent out CDPH into my yard, and he told me -- remember this? Because this is when I turned from shaking your hand to getting really angry. The representative from CDPH stepped into my backyard. And I said, Well, sir, how's it going?

He said: Oh, you know, it's fine. Those people complaining, they smoke two pacts of cigarettes a day and are former crack heads.

So really?

And then the former director of the island called me and said, Could you keep that quiet?

So hell no, I won't. Please put that in the record, because that is falsification. And then less than 20 minutes later, that same gentleman was called over across the street behind a children's bus stop

where they found a large item that they hadn't removed.

So how is it that we are wrong and we are crazy and we are outrageous when all we want is to protect our children? Is --?

You're not really -- I mean, you're doing this, and you're putting here and you're saying it's so technical that, silly us, we can't understand it when in fact we do understand it.

What we can't do is afford to move into a city that is overpriced. So we asked for your help. We asked you all reg -- you regulators to be honest about this situation.

Don't do what you did to Mare Island, you know, change the environmental regulations and standards and levels so that that can be approved for people to live in it. I have that record. It's in -- It's the Congressional Record. It's hard to hide things like that.

So you know that you did this before. You've done it to Bayview-Hunters Point, and you're doing it to us. Then you're going to do it to Alameda. That's a fact.

So now what are you going to do about it? Stop giving us these little papers saying, you know, oh, and it's only this, and this is all we're concerned about.

We're concerned about a bigger thing. It's called life. We want to live it.

PUBLIC ATTENDEE: Right.

MS. LUNDGREN: We want our children to realize the extent that they should be able to expect to live unencumbered.

Do you know that simply your -- your people driving through here with trucks with radioactive signs on the back of them straight through the neighborhood, do you know what that does to a child? Even if it does nothing, even if it's clean supposedly, even if it's covered, do you know what the symbol itself does to our children?

So when you do your risk assessment, please put in there "trauma." They see these people walking around. And you know, this isn't as simple as just, "Oh, he ate a blade of grass." This is the children at their age understanding what is really out there and knowing that they can do nothing about it. And the parents know that they can do nothing about it.

And you're telling us, Oh, it's nothing. It is something and absolutely is something. You have buildings that are accessible by children that you know are covered in lead paint chipping and peeling and going into the soil. And yet, there's no fences around them.

You have sinkholes developing, and yet you do nothing. So how is it -- how is it that you're okay with this?

You know, VOCs, PCBs, dioxin, all these things, they are toxic. And you know that our animals and our children are ingesting it.

You know, Mr. Stone, that I spray off my unit. I have clear and distinct pictures of the dust that comes up within a week's time between where I've power-washed it and where it is on my neighbor's house. These things are in our windowsills, you guys. Come on. Enough. Please.

I'm so happy you're taking notes because this is stuff that I've asked you, and I would like to see it in writing. We're tired of waiting for you to acknowledge the real risk. It's not fair for you to sit there and let us assume that risk.

And do you know, Mr. Forman, you leaned forward in one of those meetings and said, Kathryn, I just really want to know why you're still here.

You know exactly why I'm here. I cannot afford to be there [indicating], ill health or not.

And do you know how -- because you guys work so closely together by your own words, you and Bob Beck. You guys all worked it out. I'm still here at your hand, and now I'm waiting for your hand to sign the

paper that gets all of us to safety. Now, this government can send people into a million other countries and profess to be protecting their freedom, so they can damn well make sure that we are safe at home.

PUBLIC ATTENDEE: That's right.

MS. LUNDGREN: I'm absolutely exhausted from your CEQA negatives. You've made this determination, but you haven't told me what basis. What criteria are you basing your negative responses on? Where's the percentages?

And in the table that's in there, Table 1, I mean, you know, you publish your goal levels, but where are the current levels? You want to get to this goal, but what are you working from? What's your beginning?

Prove to me that you care that I know what those levels are. There's no -- I don't know what you're currently recording, what you are telling him. And by the time I see it, you'll be done with this work just by the nature of how slow the government moves.

So how is that fair? And how does that give me an opportunity, a true opportunity, for public comment or any of my peers, any of my neighbors?

I'm deeply invested in this, no doubt. You guys know that full. I'm reading every day. I'm keeping an eye on everything. My neighbors may or may

not have the same ability to do that. So how is that fair, and how does that not get equated into the negative impact or the negative risks? Because that is true risk, is it not?

No answer?

Okay. Anyway, bless you. I wish you well. Again, I have no problems with you cleaning this place up. In fact, I am happy you're going to, as a citizen of San Francisco. It falls in line with what we profess to be, environmentally safe and conscious. But you shouldn't be doing it with people in the middle of all of this turn-arounded soil and flooding and power outages and no safety.

And you're running trucks through the neighborhood that you told us you weren't going to do just two days ago. So you told us that you were going to shut down our only access to the fresh air coming off the bay to use for truck running. And yet, they are coming straight through the neighborhood.

So what gives? We're just surrounded on all sides by them? That's against what you promised. Again, that's, you know, just the newest thing that you promised that isn't actually happening.

I have pictures of trucks sitting open backed right at the end of the island with its soil being

exposed and blown by the wind right by the Harvey Milk building. Do you know where that is now, Mr. Forman? Do you know where that building is now?

MR. FORMAN: I've listened --

MS. LUNDGREN: You know the island a little better now?

MR. FORMAN: I've listened to your comment.

MS. LUNDGREN: Okay.

MR. FORMAN: No need to be insulting.

MS. LUNDGREN: No. I'm asking a question: Do you know where that is? Because that was the location of that truck. That's not insult.

So these things are happening, and I don't know if you're even here enough to know that this is part of what you should be putting in your risk assessment. There's exposure upon exposure.

And then you have the street cleaner who kicks up the dust that collects by the water every time it rains. The dirt that runs off the sites ends up in the drains. Then you have the street cleaner come, and he kicks it up.

And then you have their maintenance people coming with their blowers and blowing it up into our faces, and then they're depositing more pesticides above and beyond what you actually put down and more, you

know, fertilizers. I've asked them to not even come near my house because I don't want to breathe it.

And we're not allowed to dig in the soil. So why are you putting more things in the soils? Because it's already there and you don't care?

And again, when they do work on the units and they do work in the yards, why aren't you all here watching what TIDA and John Stewart are doing to us? The materials they are using to make our lives better are toxic. So you really need to get on top of that.

When they dig in and fix the pipes, where are you, Mr. Shoemaker, Schumacher? Sorry.

Where are you, Medi?

Where's the Water Board when this stuff is being put into where it can run off into the bay?

Again, there's no answers.

These are the risks that you guys are not identifying and you are not including in this analysis. And then you get it approved, and then you just walk all over us until you can, you know, constructively evict each of us one by one; or someone's agency says, Well, we lost a contract, because they have an arrangement with the city.

You know, it's unfair, it's unethical; and personally I think it's environmentally unsound,

regardless of human interaction. I just think it's disgusting. So I'd like to see you do better.

PUBLIC ATTENDEE: Thank you, Kathryn.

PUBLIC ATTENDEE: Thank you.

(Public applause.)

COMMENT

BY SARAH MENEFEE:

I would like just a couple of very general questions to be answered somewhere in the records answered on behalf of the people who have been living here and are being sickened by this situation --

MR. FORMAN: Will you state --

MS. MENEFEE: -- because --

MR. FORMAN: Please state your name for the record.

MS. MENEFEE: Oh, sorry. Sarah Menefee.

It's good this is being cleaned up, but meanwhile there are people with real life-threatening sicknesses that are being caused by this.

And so what I'm asking is, Didn't the Navy know what they were putting into the soil? It seems to me there was very deliberate okay, we're going to bury this here and we're going to hose this there; and they knew what these toxic chemicals were.

I would like to know for the record whether the

Navy informed the City of San Francisco when it took over and built housing out here and brought people out here and whether San Francisco informed the people that were going to live out here what they were going to be living on top of, if they informed them of the risks or not.

So I know that you can't -- you're saying you can't answer these questions here. But I would like it to be in the record and for that to be answered in the record.

I would also like to know on behalf of my fellows who are out here and who are sick and really trapped by economics, because we all understand about that in the Bay Area and this is where they live, whether they are going to be compensated by the Navy and the City of San Francisco, who put them out here. And I don't know if they were warned of the risks. I think not.

But are they going to be compensated in some way for -- which really can't be done when you are being poisoned to death, but what the plan is by the Navy and San Francisco or whoever's responsible for this for -- for compensating the people who have been poisoned and for relocating our people just on their own. And they are going to have to find a place they can afford to

live if they're -- if they're driven out of their housing here or if they need to leave in order to stay alive.

So that's a series of questions that I hope can be answered in the record somewhere and just to think about.

(Applause)

MR. FORMAN: Thank you.

COMMENT

BY CAROL HARVEY:

My name is a Carol Harvey. I'm a journalist.

I absolutely support what my two fellow San Franciscans have said, Kathryn Lundgren, her beautiful articulation of exactly what's going on --

MR. FRANKLIN: Excuse me --

MS. HARVEY: -- here.

MR. FRANKLIN: -- Kathryn. We --

MS. HARVEY: And --

MR. FRANKLIN: -- Kathryn, we've had this --

MS. HARVEY: -- my --

MR. FRANKLIN: -- discussion about this --

MS. HARVEY: -- name --

MR. FRANKLIN: -- before.

MS. HARVEY: -- is Carol Harvey, and I want to point out to everyone here that Bryce Bartelma talked

about the necessity for following the law.

I called on you --

MR. FRANKLIN: We had this discussion --

MS. HARVEY: -- to follow the --

MR. FRANKLIN: -- during this --

MS. HARVEY: -- Constitution of the United States --

MR. FRANKLIN: -- appropriate venue --

MS. HARVEY: -- which allows --

MR. FRANKLIN: -- to ask questions --

MS. HARVEY: -- for freedom of speech and freedom of the press. I am a press person.

This gentleman standing before you, Bill Franklin, has told me I cannot speak.

MR. FRANKLIN: What I have said is --

MS. HARVEY: I am a press person. I am a citizen of San Francisco. Not only do I have the rights of freedom of the press under the American Constitution, the First Amendment, but I have the right of a citizen to speak.

MR. FRANKLIN: Ma'am, if you would --

MS. HARVEY: And I'm going to continue to speak. If I am not allowed to continue to speak, the Navy is breaking the law.

MR. FRANKLIN: No, ma'am, we're not.

MS. HARVEY: Yes, you are breaking the law.

PUBLIC ATTENDEE: Yes, you are.

MS. HARVEY: I have been told that you will not allow me to ask questions; but until now, you have not said I could not comment. This is my comment, and I will ask questions.

These are my neighbors. I care about my neighbors. I live in the Marina District of San Francisco. These are my neighbors. I love them.

They are being poisoned. All you have to do is stand and look at a man who has tumors on his shoulder and back to know how this island where he's lived for 15 years has poisoned him.

All you have to do is stand in front of a teen-ager whose legs swell up, who's writhing in pain, and know what this island is doing to people.

(Off mic) I expected you to turn off the microphone, and I'm fully prepared to keep on speaking. I have a loud voice. I will speak.

You are breaking constitutional law. You sit here -- it's at a public meeting, thank you very much -- and claim you have to follow the law with your CERCLA process and all the steps that you want us to memorize to know, to understand, so that you can know what's being done to you. And you are not following the law,

sir.

PUBLIC ATTENDEE: That's right.

MS. HARVEY: You're not following the constitutional law.

MR. FRANKLIN: Carol, we will have discussion --

MS. HARVEY: Do not refer to me as Carol. Call me Ms. Harvey.

MR. FRANKLIN: Ms. Harvey --

MS. HARVEY: Show me that respect.

MR. FRANKLIN: Certainly.

MS. HARVEY: You cannot take away my right to speak.

Now I would like to know this.

MR. FRANKLIN: We'll have this discussion afterwards, Miss Harvey.

MS. HARVEY: I would like to know this: Why has it taken you so much time, Navy, project managers, Keith Forman, to get to Halyburton Court?

It was one of the most toxic areas on the island. A newspaper in San Francisco published that there was a radiation school under Halyburton Court. I want to know if that was true, and I want to know why Halyburton Court is never ever mentioned except until tonight when you're going to tear down the buildings.

I have another statement to make about the sand lots that are all over the island. Children dig in those lots. People were told in 1998, '99, their leases said, "Don't dig in the dirt." Why are there open sand lots all over the island where children can access that and dig in that dirt?

This is insulting to the people of Treasure Island. And they come here and they talk to you and try to bring this to your attention.

And I have videoed the last two years of your RAB meetings. You stand there and roll your eyes and look at each other, and you scorn these people. You are not respectful to them. I have many videos showing this, and I will publish them. I will publish them.

I want these people to be treated with respect. This is a human rights -- a vile human rights abuse that's being perpetrated on these people.

And what we need is for you to find a way to compensate them, to find them equal, safe housing that is subsidized that they can afford in some other area of San Francisco or wherever they want to go.

We need you to find a way to pay their medical bills back to the beginning and their medical bills into the future and their children's medical bills because radiation changes DNA, and these kids are going to be

suffering this into the unforeseeable future. This needs to be paid for.

You need to start following the law. You need to --

When people moved out here, their leases said, "Don't dig in the dirt." But nobody explained to them what was there. And you, the Navy, didn't really talk about what was truly there until two reporters came out, dug in the dirt -- this was 2013 -- found objects so hot that it burned people. It had the ability to burn people.

They went to independent labs. They had this stuff tested. Then the California Department of Public Health became aware of this. And they told you, Navy: Clean up your act. Get it together. Find -- Do a better job and look for more.

And since that time, you have found 700 radiological objects in the soil as of two months ago. In the last RAB meeting or whenever that was, a month and a half ago, you counted 700. But you talk about them: Oh, don't worry about it. They are low-level radiological objects. Nothing to worry about. Nothing that human beings have to be concerned about. It's way below danger levels.

Do you know that constant contact for 15

however many years you've lived here with low-level radiological objects can give you cancer? The cumulative effect of low-level radiological objects is as serious as direct contact with a high level of radiological object. No, you're not told this. You're not told this.

And I'm going to read a letter from my editor and publisher here to you in this attempt to stop me to turn off the microphone.

By the way, I took my videos home the last time; and I found out that when I stood up to speak, my voice you could barely understand it. Everybody else's voice you could hear clearly. And just before I started to speak, I saw Keith Forman look at your sound man. I have that on video.

This is a letter from my editor.

> To Whom It May Concern: I am the editor of the SAN FRANCISCO BAY VIEW newspaper. Dr. Willie Ratcliff is the publisher of the paper.
>
> Carol Harvey is an investigative reporter who for more than ten years has regularly published in our publication.
>
> We wish to declare in this letter that ordering any reporter not to comment or ask

questions in any public meeting is a direct violation of the Constitution of the United States. It is an abrogation of the First Amendment designated rights of press and free speech. Defiance of the Constitution which mandates the public's right to know and a reporter's duty to ask probing questions designed to enlighten and enhance the public's right to know is an egregious violation of the law of the land.

Our publication protests such actions and will publish widely that this violation has occurred. Our publication adamantly and openly protests any attempt to stop Carl Harvey from asking questions or commenting during this or any public meeting.

Sincerely, SAN FRANCISCO BAY VIEW newspaper, Mary Ratcliff, editor.

(Applause.)

MS. HARVEY: I want to be able to ask questions on your behalf and get the answers. And thank you for supporting me in attempt to do that.

PUBLIC ATTENDEE: Thank you, Carol.

(Applause.)

MR. FORMAN: Okay.

PUBLIC ATTENDEE: Turn the mic back on.

PUBLIC ATTENDEE: Now you can turn the mic back on.

MR. FORMAN: Okay. Next member who wishes to make a public comment?

MS. LUNDGREN: Can we make two, or are you going to forbid us to make a second comment?

MR. FORMAN: Next person who wishes to make a comment?

MS. LUNDGREN: Can we repeat?

PUBLIC ATTENDEE: Go ahead, Kathryn.

PUBLIC ATTENDEE: Don't --

PUBLIC ATTENDEE: Go, Kathryn.

MS. LUNDGREN: Can I ask another --?

MR. FORMAN: Kathryn, you've already had your chance as spoken. You've spoken.

MS. LUNDGREN: Okay. All right. Wouldn't be my --

MR. FORMAN: Yes.

MS. LUNDGREN: -- opportunity.

MR. FORMAN: Yes.

MS. LUNDGREN: That's fine. It was a long one.

MR. FORMAN: And submit anything else in writing, please. Thank you.

MS. LUNDGREN: No problem.

MR. FORMAN: Okay. Next person.

MS. LUNDGREN: Just ask them about the ammunition that is continuously found the fact that this is the second round on Bayside Drive.

You're hearing me anyway.

PUBLIC ATTENDEE: Go for it.

COMMENT

BY LASHAWNDRA BRESTON:

Hi, my name is LaShawndra Breston.

What do you want me to ask?

(Electronic feedback interruption)

MS. BRESTON: Oh, I guess so.

MS. LUNDGREN: Through the grading process if they don't know where anything is but in the sites that they're actually addressing --

MS. BRESTON: In sites that you're actually addressing . . .

THE COURT REPORTER: I'm sorry. Please state your name again, please.

MS. BRESTON: My name is LaShawndra Breston. I'm a resident over on Reeves Court.

And obviously, you see people are upset. And one reason that they are upset is because we don't feel like we have been getting the information properly. We feel like we have been lied to. We feel like we have

been deceived.

We seen things happening in the neighborhood that you guys are supposed to be taking care of one way, but you're not, such as the things that Kathryn spoke of. And then we see how you treat our friend, and that's not endearing to any of us.

So I really don't see the issues why she can't come up and rep- -- and ask whatever she wants to ask, 'cause as she says, some of us aren't able to do that. Some of us rely on the information that she brings to us from these meetings 'cause many of us you haven't seen us in a long time. So I really don't see what the issue was.

I really don't see what the issue was with Carol coming up, ask her questions either, as she is a neighbor and a friend.

So what did you want me to ask?

MS. LUNDGREN: What's the status of the munitions investigation?

MS. BRESTON: What is the status of the munitions investigation?

MS. LUNDGREN: And when they address the areas that we are currently living on . . .

MS. BRESTON: And when they address the areas that we are currently living on . . .

MS. LUNDGREN: . . . just as the people that were moved off underneath their homes, they are now finding almost 2 -- over 200 items just in Bayside alone on the second round of remediation.

MS. BRESTON: That's scary, and that is one of my questions. Have you --?

MR. LUNDGREN: What's going to happen?

MS. BRESTON: Yeah, what is going to happen to these now unoccupied buildings?

Okay. So now these were previously occupied, and you're finding all of these munitions?

MS. LUNDGREN: Munitions. And again, just for example, second highest found item area is the end of Bayside Drive where the burn pits are.

MS. BRESTON: Where everything that they shut down.

MS. LUNDGREN: There were 200 so far.

MS. BRESTON: So people were previously living here, and I think this is a concern for all of us because we are talking about groundwater, we talking -- you said yourself that things had traveled through soil that you don't know where everything is.

So how is this going to be taken care of, and how is it going to affect the buildings that are presently occupied? That's one of my concerns.

If there's a problem with the pipes -- and you say that this doesn't affect the drinking water; but if there's a problem with the pipes in the presently occupied building, how will that affect that building? How will --? If I got pipes, 'cause I go -- in my building alone, the pipes are cracking all over the place.

PUBLIC ATTENDEE: Everywhere.

MS. BRESTON: We got tree roots growing in. So if it's a problem in the groundwater and it's a problem with these pipes, how can this not affect the people who are living here?

MS. LUNDGREN: And they are --

MS. BRESTON: So --

MS. LUNDGREN: -- clay and wood and --

MS. BRESTON: Yeah, 'cause like you say yourselves, the island went up in, what, 1930? So I'm pretty sure that the infrastructure has not been updated like it's supposed to be, and that is a concern for those -- I know everyone in my building has children. So that is a concern for us, and I would like some feedback on that.

Also, I'm a former resident of Bayview. Not really impressed with you all nor the people who you choose to work with. So I would like some honest

answers here. And I think it's okay for you guys to be honest with us because we don't believe nothing you say anyway.

(Applause.)

MR. FORMAN: All right. Thank you. We will address that. We will address that in writing.

Next person.

(Pause; no response elicited.)

Okay. Thank up very much for coming, everyone. I appreciate it. And we will be working on that. Thank you for the community input we had tonight.

And this meeting is adjourned.

(Off record at 8:10 p.m., 3/30/16.)

---oOo---

CERTIFICATE OF REPORTER

I, CHRISTINE M. NICCOLI, Certified Shorthand Reporter of the State of California, do hereby certify that this 72-page transcript of the foregoing meeting was reported by me stenographically to the best of my ability at the time and place aforementioned.

IN WITNESS WHEREOF, I have hereunto set my hand this 19th day of April, 2016.

CHRISTINE M. NICCOLI, C.S.R. NO. 4569

ATTACHMENT E
RESPONSIVENESS SUMMARY

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RESPONSIVENESS SUMMARY FOR
INSTALLATION RESTORATION SITE 12 PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN

Pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section (§) 113(k)(2)(B)(iv) (42 *United States Code* § 9613(k)(2)(B)[iv]), the Navy must respond to "significant comments, criticisms, and new data submitted in written or oral presentation" on its proposed remedial action presented in the Site 12 Proposed Plan/Draft Remedial Action Plan.

The following presents the Navy's responses to comments and questions received during the public meeting held at Former Naval Station Treasure Island (NAVSTA TI) on March 30, 2016. The Navy did not receive any written, e-mail, or fax comments during the public comment period. The comments and questions below are paraphrased from the comments and questions received verbally during the public meeting about the contamination or remediation of Site 12. Comments that were received on topics unrelated to the cleanup of Site 12 are not included below. The complete verbatim transcript from the public meeting is included as Attachment D.

Four residents spoke at the public meeting. Each resident raised multiple comments and questions. The name of the speaker is identified with the first comment or question and is the same for all following comments until another speaker is identified.

No.	Speaker	Comment or Question	Navy Response
1	Kathryn Lundgren	Where are transcripts from previous meetings? (Transcript pages 42-43)	The transcript for this meeting is presented electronically as Attachment D to the Record of Decision (ROD)/Final Remedial Action Plan (RAP). Other RODs on NAVSTA TI also contain electronic transcripts as an attachment. For Restoration Advisory Board (RAB) meetings, the official meeting minutes are posted to the Base Realignment and Closure (BRAC) Program Management Office (PMO) website at www.bracpmo.navy.mil.
2		Where is the Water Board or other federal and state regulatory agencies? (Transcript page 42)	Ms. Myriam Zech, the Regional Water Quality Control Board (Water Board) representative for former NAVSTA TI, was unable to attend the public meeting; however, members of the public are welcome to contact her directly at myriam.zech@waterboards.ca.gov or 510-384-9264 should they have any questions.

No.	Speaker	Comment or Question	Navy Response
2 cont			The California Department of Toxic Substances Control (DTSC), the lead State agency, represented by Ms. Remedios Sunga and Mr. Nathan Schumacher at the public meeting, and the Water Board, the State supporting agency, are the leading state support agencies for the cleanup at former NAVSTA TI. DTSC coordinates with other state agencies, as necessary and determined by DTSC, for input into the cleanup at former NAVSTA TI. The Navy is the lead federal agency under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and former NAVSTA TI is not on the CERCLA National Priorities List. Because of these factors, the U.S. Environmental Protection Agency (EPA) is not in attendance at the meeting.
3		Risk needs to be evaluated and calculated closer to our level and our exposure rate. (Transcript page 45)	The human health risk assessment (HHRA) completed in the remedial investigation (RI) follows EPA and DTSC guidelines for conducting risk evaluations at CERCLA sites. In assessing risk from soil, Site 12 was divided into 19 smaller exposure units and six areas of interest. All these areas were deliberately designed to reflect locations where children would spend most of their time. Risk from soil was assessed for each of the 19 exposure units and each of the six areas of interest. Risk from groundwater was assessed for five groundwater exposure areas tied to known sources of contamination. All of this information, combined, has produced a conservative risk evaluation specifically tied to the residential use of Site 12.
4		What chemicals are you going to use to treat the arsenic and are the chemicals used to treat the arsenic going to be present in the soil? (Transcript pages 45-46)	The Navy will use an oxygen-releasing compound to treat the petroleum in the soil, which will restore conditions conducive to decreasing the arsenic concentrations in groundwater. Examples of these compounds are IXPER 75C from Carus Corporation and ORC from Regenesis, both of which are calcium-based. When the oxygen-releasing compound comes into contact with water, it releases oxygen that destroys the petroleum. Use of this oxygen releasing compound will be implemented in conjunction with excavation of the petroleum in the removal action beginning in early 2017. The Navy will continue to monitor the groundwater to evaluate the effects of the treatment and the chemicals in the groundwater for several years after the treatment.

No.	Speaker	Comment or Question	Navy Response
5		Why are you separating the radiological survey and remediation from the chemical surveys and remediation when you are moving the same soil? (Transcript page 46)	The radiological cleanup and chemical cleanup are currently at different stages of the CERCLA process. The majority of radiological cleanup is focused at the Solid Waste Disposal Areas (SWDAs). The chemical cleanup is occurring in areas of Site 12 outside and inside the SWDAs. However, because all of Site 12 is identified as radiologically impacted per the Historical Radiological Assessment Supplemental Technical Memorandum, the excavated soil removed via the selected chemical remedy will also be screened for radiological contamination. This is a conservative, precautionary measure which will be taken before it is shipped off site for disposal. The final radiological remedy for Site 12 has not been determined yet as the Navy is still investigating the extent of the radiological contamination. Therefore, the chemical cleanup outside of the SWDAs is proceeding separately.
6		Arsenic is not naturally occurring if it is a by-product of petroleum breakdown. (Transcript page 47)	Arsenic is present naturally in the environment at Treasure Island. Arsenic in the groundwater at Site 12 is not a by-product of petroleum breakdown. Arsenic concentrations in groundwater at the Gateview Avenue Arsenic/Total Petroleum Hydrocarbon (TPH) Area are found at elevated concentrations because the old petroleum found at the area has created unique conditions that caused the arsenic present naturally in the soil to leach from the soil into the groundwater. This is why the groundwater remedy focuses on addressing the petroleum contamination that is causing the arsenic problem.
7		What criteria are you basing your negative California Environmental Quality Act determination on? (Transcript page 52)	DTSC concluded that the Navy's removal and remedial actions at former NAVSTA TI will not have a significant negative effect on the environment. The California Environmental Quality Act (CEQA) determination was for the cleanup actions, and not the contamination identified at Site 12. The criteria used to make CEQA determinations (CEQA guidelines) are promulgated regulatory standards in California Code of Regulations, title 14, §§ 15000-15387. DTSC's negative CEQA determination, and the criteria used in the decision-making process, can be found in the Navy's information repositories (San Francisco Main Public Library and Navy BRAC Caretaker Support Office) and at the DTSC File Room in Berkeley.

No.	Speaker	Comment or Question	Navy Response
8		What are the concentrations of contaminants currently at the site? (Transcript page 52)	The results of the Navy's data-gathering investigations and previous removal actions are contained in the Navy's Administrative Record (in San Diego), and the information repositories (San Francisco Main Public Library and Navy BRAC Caretaker Support Office). Most of the information is contained in the Navy's RI (TriEco-Tt Remedial Investigation Report for Installation Restoration Site 12, Old Bunker Area, June 2012). However, removal of identified contamination has already begun per an ongoing Time Critical Removal Action. Results of the Time Critical Removal Action will be documented in a Post Construction Summary Report.
9		I'm reading every day and keeping an eye on everything. Is it fair that my neighbors may not have the same ability to do that? Is this equated into the negative impact or negative risks? (Transcript pages 52-53)	The negative determination was made by DTSC under the state's CEQA law. The negative determination was for the cleanup actions, and not the contamination at Site 12. The CEQA guidelines are promulgated regulatory standards contained in California Code of Regulations, title 14, §§ 15000-15387. These regulations present the criteria used to determine and evaluate the significance of a project on the environment. Similar to CERCLA, the process also includes consideration of the views held by members of the public in the project area.
10		I have no problems with you cleaning this place up and I'm happy you're going to. (Transcript page 53)	Thank you for your comment and participation in the Navy's environmental restoration program. The Navy is committed to completing environmental projects to support ongoing re-development of Treasure Island.

No.	Speaker	Comment or Question	Navy Response
11		Why are trucks running through the neighborhoods? (Transcript page 53)	The Navy attempts to minimize the amount of equipment and trucks traveling through the neighborhoods, but this is also a necessary part of completing the cleanup. Trucks involved with the cleanup at former NAVSTA TI are required to have covers, follow traffic routes and obey traffic laws. As has been explained in previous meetings and fact sheets, the Navy has designed each of the cleanup actions to minimize truck traffic through the neighborhood. Because of this, the Perimeter Road has been closed to the public. Infrequently, trucks may have to use limited portions of the residential neighborhood. The Navy has provided telephone numbers for Mr. Keith Forman, Navy BRAC Environmental Coordinator, (415) 308-1458, and Ms. Remedios Sunga, DTSC, (510) 540-3840, to residents to report complaints or issues related to cleanup activities.
12		Are the Navy and the regulators monitoring what TIDA is doing in the units and yards at the site? Are the Navy and the regulators monitoring when they fix the pipes? Is the Water Board monitoring when stuff is put in where it can run into the bay? (Transcript page 55)	The Navy is monitoring the investigation and cleanup of the site. Investigation work plans, investigation results, and cleanup reports for Navy actions are continuously reported to the state regulators such as the DTSC and Water Board. The Navy works with the Treasure Island Development Authority (TIDA) on community issues as needed; however, maintenance and repair of the housing area is the responsibility of TIDA and associated parties.
1	Sarah Menefee	It's good this is being cleaned up. (Transcript page 56)	Thank you for your comment and participation in the Navy's environmental restoration program. The Navy is committed to completing environmental projects to support ongoing re-development of Treasure Island.
2		Didn't the Navy know what they were putting into the soil? (Transcript page 56)	The contaminants at Site 12 were released from practices that were legal and common at the time (approximately the 1940s and 1950s). At that time, the toxicological effects of chemicals on human health or the environment were not well known. Since these risks were not known, actions such as waste disposal, incidental or accidental spills of chemicals, grading and moving soil around were common during the time period when NAVSTA TI was an active base.

No.	Speaker	Comment or Question	Navy Response
3		When San Francisco took over and built housing at the site, did San Francisco inform people of the risks? (Transcript page 57)	The lease between the Navy and the city identified those actions or prohibitions on the part of the lessee that were necessary to protect human health. The lease between the city and the residents must comply with these lease requirements. As a precautionary measure, the Navy directed that digging in the yards and open spaces within Site 12 is prohibited until the Navy completes its investigations and cleanup actions.
1	Carol Harvey	Why has it taken the Navy so much time to get to Halyburton Court? (Transcript page 61)	The Navy has conducted numerous environmental investigations and removal actions throughout Site 12. One of the previous removal actions, completed in 2000, removed polychlorinated biphenyls and polycyclic aromatic hydrocarbons in soil in Halyburton Court. The removal action currently underway will remove remaining discrete locations of contamination in Halyburton Court. Timing of this work is due to a number of factors, including the condition of other projects, ongoing site studies, and funding resources.
2		Was there a radiation school under Halyburton Court? (Transcript page 61)	No, there is no evidence of a radiation school being located under Halyburton Court. The closest historical training site is that of the former USS Pandemonium. This radiological decontamination mockup training ship was located at Site 12 in the northwestern corner of the island and not at Halyburton Court. The USS Pandemonium was located in the northwestern corner of Site 12 from February 1957 to July 1969, when it was moved to the northeastern corner of the island (a part of Installation Restoration Program Site 32).
3		Why are there open sand lots all over the island where children can dig in the dirt? (Transcript page 62)	The open sand lots in Site 12 contain imported sand specifically for that “play area” for children. The sand is not contaminated and is safe for use in the children’s play area.

No.	Speaker	Comment or Question	Navy Response
1	LaShawndra Breston	What is the status of the munitions investigation? (Transcript page 68)	The Navy has recovered 184 munitions within Site 12 to date. Screening for munitions during excavation only needs to occur at the Westside Drive SWDA and a portion of the Bayside SWDA. This Proposed Plan and ROD/Final RAP do not involve areas or projects requiring munitions screening.
2		What is going to happen to these now unoccupied buildings? (Transcript page 69)	The Navy will tear down buildings that are located above discrete locations of contaminated soil to reach the contaminated soil for disposal off site. Other unoccupied buildings that do not require demolition will be turned over to TIDA for rehabilitation and potential reuse or be secured until property transfer.
3		If it's a problem in the groundwater and it's a problem with the pipes, does this affect the people living here? (Transcript page 69)	The potable water pipes providing drinking water to the residents is a separate system that does not use groundwater. The drinking water on Treasure Island is piped in from outside sources and constantly tested by the San Francisco Public Utilities Commission. The results are posted at their website at www.sfwater.org.
4		How is the soil going to be taken care of? (Transcript page 69)	Contaminated soil will be excavated and properly disposed of off-site in a regulated and permitted landfill.
5		How is it going to affect the buildings that are presently occupied? If there is a problem with the pipes in the presently occupied building, how will that affect that building? (Transcript page 70)	For occupied buildings that are located above discrete locations of contaminated soil, the buildings will be vacated and demolished to reach the contaminated soil. Utilities servicing these buildings will be disconnected, properly sealed and capped.

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ATTACHMENT F
STATEMENT OF REASONS

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STATEMENT OF REASONS
INSTALLATION RESTORATION SITE 12
NAVAL STATION TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA

Site 12 is located at former Naval Station Treasure Island (NAVSTA TI) in San Francisco, California. Former NAVSTA TI is a closed military facility under the custody and control of the Department of the Navy. The Navy is addressing the release or threatened release of hazardous substances at Site 12 according to the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act, and their implementing regulations in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The Department of Defense (DoD) was delegated the authority to address the release or threatened release of CERCLA hazardous substances by Executive Order 12580. The DoD, in turn, delegated its authority to respond to releases of CERCLA hazardous substances on property under the custody and control of the Navy to the Navy. The Navy, in partnership with the state, has selected a remedy for Site 12. The Navy has therefore prepared this non-solid waste disposal area (SWDA) and non-radiological record of decision (ROD) to document remedy selection pursuant to CERCLA, Superfund Amendments and Reauthorization Act (SARA), and the NCP.

The non-SWDA and non-radiological ROD also serves as a final remedial action plan (RAP) to demonstrate substantive compliance with state law in *California Health and Safety Code* Section (§) 25356.1. This Statement of Reasons describes how the Navy's investigations and evaluations of potential risk to human health and the environment at Site 12, completed pursuant to CERCLA, result in substantive compliance with *California Health and Safety Code* § 25356.1. Relevant provisions of *California Health and Safety Code* § 25356.1(d) require that RAPs be based on the NCP and six specifically listed factors. The non-SWDA and non-radiological ROD/Final RAP describes how it is based on and complies with the NCP. The sections below describe how the non-SWDA and non-radiological ROD/Final RAP achieves substantive compliance with *California Health and Safety Code* § 25356.1(d).

California Health and Safety Code § 25356.1(d)(1) – Health and Safety Risks

Section 2.5 of the non-SWDA and non-radiological ROD/Final RAP describes the human health and ecological risk evaluations completed for Site 12.

Section 2.5.1 presents the results of the human health risk assessment (HHRA). Risk estimates were prepared using two different methods: Method 1, which satisfied federal requirements; and Method 2, which satisfied state requirements. Method 1 identified Aroclor-1260 (a polychlorinated biphenyl [PCB]) and dioxins in soil as chemicals of concern (COC) for future residents. Method 2 identified Aroclor-1260 in soil as a COC for future construction workers and Aroclor-1260 and benzo(a)pyrene as COCs for future residents. No COCs were identified for groundwater.

The HHRA separately evaluated the potential for health effects from exposure to lead in soil by comparing the exposure point concentration for lead with residential and industrial screening levels. The exposure point concentrations for lead in soil were all below the EPA Residential Screening Level of 400 mg/kg, except for soil at AOI 1201/1203/1220. Lead was identified as a COC at AOI 1201/1203/1220. In addition, lead was targeted for removal in other exposure units and areas of interest after further evaluation in the FS and FS Addendum. Table 3 presents all the exposure units and areas of interest where lead was targeted for excavation based on the HHRA, the FS, and the FS Addendum.

Section 2.5.2 presents the results of the Tier 1 screening level ecological risk assessment (SLERA). The SLERA concluded that no action was necessary to protect terrestrial ecological receptors at Site 12 because of the poor quality habitat on NAVSTA TI. Ecological risks were re-evaluated in the feasibility study (FS) addendum because changes in land use that may result in future development of habitat. The Navy concluded that implementation of the remedial action based on achieving remediation goals for human health will be protective of potential future ecological receptors that may be present in the future. Impacts to aquatic wildlife in San Francisco Bay from contaminants discharging from the site via groundwater were evaluated in the 2012 RI. The evaluation identified arsenic from the Gateview Arsenic/TPH Area as a potential risk to aquatic receptors in the San Francisco Bay. Arsenic occurs naturally in the soil on NAVSTA TI. Biodegradation of the dissolved petroleum hydrocarbons at the Gateview Arsenic/TPH Area cause reducing conditions in groundwater that leach the naturally occurring arsenic from the soil into the groundwater.

California Health and Safety Code § 25356.1(d)(2) – Effect of contamination on present, future, and probable beneficial uses of contaminated, polluted, or threatened resources

Section 2.4 presents the current and potential future uses of Site 12. According to the 2011 Treasure Island Development Authority Disposition and Development Agreement, Site 12 will be redeveloped for residential use and will be part of the Northern Shoreline Park, the Wilds, and the Stormwater Wetlands. When the remedy is complete, Site 12 will be available for these uses.

Groundwater is not currently being used as a source of drinking water, and naturally occurring groundwater quality and conditions render the groundwater unlikely to be used in the future as a source of drinking water. On January 23, 2001, the Regional Water Quality Control Board (Water Board) concurred in the determination that the groundwater does not have a beneficial use as a source of drinking water. No other groundwater use is planned for Site 12.

California Health and Safety Code § 25356.1(d)(3) – Effect of alternative remedial action measures on the reasonable availability of groundwater resources and the availability of treatment technologies to significantly reduce the volume, toxicity, or mobility of the hazardous substances

The selected remedy includes groundwater treatment designed to remove petroleum hydrocarbon contamination and result in decreased concentrations of arsenic in groundwater. This remedial action will address the discharge of Site 12 groundwater into San Francisco Bay, protecting the freshwater replenishment beneficial use.

California Health and Safety Code § 25356.1(d)(4) – Site-specific characteristics and the potential for off-site migration

Section 2.3 and Table 1 of the non-SWDA and non-radiological ROD/Final RAP describe previous investigations by the Navy to characterize the conditions and contamination at Site 12. There is a potential for arsenic-contaminated groundwater to discharge off site into the San Francisco Bay. The selected remedial action will address this potential for off-site migration.

California Health and Safety Code § 25356.1(d)(5) – Cost effectiveness of the remedial action

The estimated remedial action costs are proportionate to the level of protection the actions provide.

California Health and Safety Code § 25356.1(d)(6) – Potential environmental impacts of the remedial action

Section 2.9.2 describes the comparative evaluation of the alternatives, including Alternatives S-1 and GW-5. This comparison includes the evaluation of short-term effectiveness of the actions, which looks at the impact of the remedial action on the community, remediation workers, and the environment.

Alternative S-3 would result in short-term risks from the potential for exposure resulting from fugitive dust inhalation when contaminated soil is excavated, staged, and transported off site; however, conventional dust suppression techniques would be used to prevent exposure.

The short-term effectiveness of alternative GW-5 includes risk from fugitive dust inhalation, risk from exposure to contaminated soil that is excavated, staged and transported off site, and risk from exposure to chemical reagents that are combustible or that are oxidizers. These risks would be managed through proper material handling, best management practices, and health and safety protocols.