

Appendix G (Part 1)

PHASE I ASSESSMENT

MEMORANDUM

Date: April 20, 2016
To: Ms. Suzanne Wilson, Senior Planner - Trails EBRPD
From: Mr. Brett Bardsley, P.G. and Mr. Michael Leacox, C.E.G.
Subject: Hazardous Waste Memorandum – San Francisco Bay Trail at Point Molate

INTRODUCTION

This technical memorandum presents the findings of an initial hazardous waste assessment conducted for the San Francisco Bay Trail at Point Molate Project (herein identified as the Project or Bay Trail) located in the City of Richmond (City), Contra Costa County, California (Figure 1). The assessment was conducted by NCE on behalf of the East Bay Regional Park District (EBRPD). The primary objective of the Project is to construct a 10-foot wide, asphalt-paved multi-use, non-vehicular trail with two foot shoulders adjacent to or within a former railroad alignment located north of the Richmond-San Rafael Bridge on the eastern shore of the San Francisco Bay (Bay). Figures 2 and 3, as well as Maps 1 through 16, illustrate the proposed Project layout. Maps 1 through 16 are included as Attachment A.

The purpose of this assessment was to identify the presence or likely presence of potential environmental concerns (PECs) in connection with the Project so that mitigation measures and/or engineering controls can be implemented such that unacceptable risk, if present, is minimized to construction workers and future site users during and/or after construction of the Project. Because only the near surface soils (between ground surface and 2-feet below the ground surface [bgs]) are expected to be disturbed and direct contact with groundwater is not anticipated during construction, the assessment did not include an evaluation of deeper soils and/or groundwater conditions beneath and/or adjacent to the Project. In addition, vapor intrusion to indoor air from the migration of volatile chemicals in the subsurface was also not evaluated because the Project is not expected to include the construction of buildings.

Activities to identify PECs in connection with the Project included a records review of available historical documents; standard historical sources including aerial photographs, fire insurance maps, property tax files, and recorded land title records, United States Geological Survey (USGS) topographic maps, and Local Street Directories; and environmental regulatory records, a site reconnaissance of the Project and adjacent parcels, and interviews. These activities were performed using ASTM International (ASTM) 1527-13 methodology and consistent with the United States Environmental Protection Agency (EPA) All Appropriate Inquiries (AAI) rule.

Richmond, CA

501 Canal Blvd., Suite I
Richmond, CA 94804
(501) 215-3620

www.ncenet.com

PROJECT BACKGROUND

The proposed Bay Trail will be approximately 2.5-miles and extend north along the shoreline, through Chevron Corporation (Chevron) property, to the Point Molate Beach Park and Former Naval Fuel Depot (NFD) property, owned and managed by the City. The Bay Trail will give the public access to the shoreline and the ability to connect to the park via foot or bicycle.

The Project is divided into two segments, Segment A and Segment B, as described below:

- Segment A (Figure 2 and Maps 1 through 7) will be constructed within a 20-foot wide surface easement through Chevron property, which stretches from Stenmark Drive on the north side of the Richmond-San Rafael Bridge (I-580), north to the southern extent of Chevron's boundary at Point Molate Beach Park (Figure 2). Segment A will be approximately 1-mile long, 10-feet wide with 2-foot shoulders on each side. Segment A will be operated and maintained by EBRPD.
- Segment B (Figure 3 and Maps 8 through 16) will be constructed on City property and continue north from the northern extent of Segment A through Point Molate Beach Park, the Winehaven Historic District, to the northern extent of Chevron's boundary. Segment B will be approximately 1.5 miles long, 10 feet wide with 2 foot shoulders on each side. Segment B will be operated and maintained by the City.

In 2009, the EBRPD entered into an agreement for the donation of the Segment A surface easement for the San Francisco Bay Trail that follows the former Richmond Beltline Railroad/Castro Point Railway corridor along the shoreline of their southernmost property on the San Pablo Peninsula. In 2013 and 2014, EBRPD hired NCE to conduct an alignment study for a Class I bike path to be constructed generally adjacent to or on top of the former railroad alignment and, as a result, recorded the trail easement.

Recently, the Bay Area Toll Authority (BATA) approved the installation of a multi-use recreational trail along the shoreline from the Richmond – San Rafael Bridge to Marine Street, near Point Richmond, which would connect to the EBRPD's surface easement at Stenmark Drive. The combined projects will connect trail users from both the City and the City of Marin to San Pablo Peninsula.

PROJECT DESCRIPTION

Project Location

The Project is located in the Potrero Hills of Point San Pablo Peninsula, northwest of the City in Contra costa County, California (Plate 1). The Project is located on the east side of the Bay and generally bordered by undeveloped land to the north, by the Chevron Richmond refinery to the east, and by the Richmond-San Rafael Bridge to the south.

Project and Vicinity General Characteristics

The general area history, topography, geology, and hydrogeology of the Project vicinity are presented below.

General Area History¹

In the early 1800s, the area was used by the padres of Mission Dolores and later became a Spanish Rancho. In the late 1860s, Chinese fisherman developed a shrimp fishing camp, which lasted for more than 40 years, and by 1899 a quarry was in operation in the vicinity of the Project and continued as late as 1915.

In 1908, the California Wine Association constructed a winery (i.e., the Winehaven winery) at Point Molate for processing grapes. At its peak, the winery became the largest winery in the United States. During that time, up to 400 workers lived at the winery during the peak seasons of operation. In 1919, the winery was shut down during prohibition, and, as a result, went mostly unused from about 1920 until the late 1930s. In 1937, the California Wine Association dissolved and began selling off its holdings.

In the early 1940s, the Navy established Point Molate Naval Depot (NFD) at Point Molate (Segment B) for fuel storage and distribution for the Pacific Fleet. Reportedly, the configuration today is largely similar to what it has historically been since being completed in 1943. The NFD consists of 20 large concrete underground storage tanks (USTs; each with 2.1 million gallons capacity) that have been built into the hillside and covered by native soil and several smaller USTs connected to refueling piers by over nine miles of buried pipeline.

Several fuel types were stored in the USTs over the years including Navy Special Fuel Oil (NSFO), a black viscous bunker fuel, diesel fuel, F-76 (marine diesel), JP-5, (jet turbine fuel), and aviation and motor vehicle gasoline (RWQCB, 2011). Historical releases of fuel occurred during transfer of fuel to and from the USTs.

The facility also operated a sanitary sewer system and a ballast water fuel reclamation/treatment system. The reclamation/treatment system included three former treatment ponds. The ponds were built on the site of a larger single pond that was used for the disposal of oily wastes from various facility activities.

In 1995, fuel storage and supply operations ceased and, in 1995, the Navy designated the NFD for closure under the fourth round of the Base Realignment and Closure (BRAC) Act. In September 1998, operational closure of the facility occurred.

In October 2003, the Navy transferred 85 percent (373 acres of 413 acres) of the NFD (USTs, drainage basins, and shoreline areas), to the City. The Navy retained 15 percent to continue restoration activities. In 2008, the Navy and the City entered into an Early Transfer Cooperative Agreement (ETCA) where the City would complete environmental remediation activities to satisfy the requirements of a California San Francisco Regional Water Quality Control (RWQCB) Order. In May 2010, based on a finding of suitability for early transfer (FOSET), the remaining 15 percent of the NFD was transferred to the City.

¹ The general area history was based on information obtained from the California San Francisco Bay Region, Regional Water Quality Control Board (RWQCB, 2011) and Terraphase Engineering (Terraphase, 2011 and 2012). Terraphase is currently the City's NFD environmental consultant and has been its consultant since at least 2011.

Topography

The Project vicinity is situated on the western side of the Point San Pablo peninsula, projecting into San Francisco Bay. The topography ranges from relatively flat areas along the San Francisco Bay to steep, dissected western-facing slopes of the San Pablo Hills (Geomatrix, 2008). The dissected slopes are oriented perpendicular to the ridge and form several ravines that drain toward the San Francisco Bay (Bay; Geomatrix, 2008). Elevations range from sea level to approximately 500-feet above mean sea level (msl; Terraphase, 2011).

Geology

Five distinct geologic units are found in the Project vicinity: bedrock, colluvium, Bay Mud, alluvium, and emplaced fill (Geomatrix, 2008). Franciscan Formation bedrock (Cretaceous-age sedimentary and slightly metamorphosed bedrock) underlies the Project and outcrops on the hillsides to the east of the Project. Colluvium (Quaternary-age clayey and silty sand with weathered bedrock fragments) is found in varying thicknesses in the nearby steeply sloping upland areas and ravines, and overlies most of the bedrock. Bay Mud (Quaternary-age silty clay) is found overlying bedrock or colluvium in thicknesses ranging from 5- to 30-feet in areas adjacent to the Shoreline. Alluvium (deposits of moderately sorted, fine to medium grained, unconsolidated sand) is present along the gently inclined areas near the Bay. Emplaced fill, consisting of on- and off-site sourced materials, occur in the low-lying shoreline areas. Thickness of emplaced fill ranges from a few feet to approximately 35-feet.

The San Pablo Hills are bounded on the northeast by the San Pablo Fault and possibly by a fault to the southwest (Blake and others, 1974), both considered inactive (Geomatrix, 2008). The Project is located approximately 16-miles east of the San Andreas Fault and approximately 5-miles west of the Hayward Fault (Geomatrix, 2008).

Hydrogeology

The occurrence and movement of groundwater in the immediate vicinity of the Project are dependent on topography, geology, and seasonal trends. When present, groundwater flow occurs within the alluvial channels, unconsolidated emplaced fill, and the more permeable horizons of the colluvium. Shallow groundwater movement in the upland bedrock areas is seasonally influenced with many wells drying up during the dry season. Generally, groundwater movement is west, towards the Bay. Groundwater flow reversals may occur where tidal influences extend a short distance inland from the shoreline. Groundwater beneath the NFD is not considered to be of sufficient quality or quantity to be used as a municipal or domestic potable water supply (Terraphase, 2011).

Current Site Use

With the exception of Point Molate Beach Park² located in the southern portion of Segment B and the southernmost portion of Segment A, which is being used by the California

² Point Molate Beach Park was opened to the public in October 2013 (www.pointrichmond.com).

Department of Transportation (Caltrans) for vehicle parking, the majority of the area in the vicinity of the Project is either unoccupied and/or undeveloped.

Descriptions of Structures, Roads, and Other Improvements

Presented on Terraphase's Figure 2 (See Attachment B) are the five areas in Segment B on which the Bay Trail will be constructed: North Shoreline Area, IR Site 3 (Former Treatment Ponds Area), IR Site 4 (Drum Lot 1), South Shoreline Area, and IR Site 4 (Drum Lot 2/Building 87). To document the location of features and/or PECs located in Segment B, these areas illustrated on Figure 2 will be referenced in this memorandum.

The main access to the Project is from a narrow paved road, Stenmark Drive (formerly called Western Drive), from the Richmond-San Rafael Bridge toll plaza exit. At the time of a Site Reconnaissance performed by NCE on February 1, 2016, which is described in more detail below, the following primary features were identified within or adjacent to the Project:

- Features within or adjacent to Segment A (See Figure 2 and Maps 1 through 7 included in Attachment A)
 - **North Portion of Segment A:** This portion appeared to be undeveloped with the exception of the former railroad corridor (See Maps 4 through 7 included in Attachment A).
 - **Castro Point:** Reportedly, Castro Point is the historic site of the Richmond-San Rafael Ferry dock (www.landandfarm.com) (See Map 4 included in Attachment A). Castro Point was used for maritime shipping or ship maintenance (Tetra Tech, Inc., 2003). What appeared to be railroad ballast was present in the northern portion of Castro Point. A dock, an office building, and toll booth scale were present to the east of the Project.
 - **Southern Portion of Segment A:** Abandoned railroad tracks were generally observed adjacent to and on the north side of the unpaved access road leading from Stenmark Drive to Castro Point. A stormwater retention pond was observed to the south of the southernmost portion of Segment A.
- Features Within or Adjacent to Segment B (see Figure 3 and Figure 2 included in Attachment B)
 - **North Shoreline Area:** Building No. 1 Warehouse located to the east of the Project. This building is a multi-storied building with numerous storage cellars (Geomatrix, 2008). Portions of the abandoned railroad were observed from the northern portion of Segment B to the south side of the Building No. 1 Warehouse. A concrete wall bordered the west side of the former railroad corridor. A fence was present on the east side.
 - **IR Site 3 (Former Treatment Ponds):** Reportedly, remedial excavation activities were recently performed in this area, and, as a result, all of the former

features within or adjacent to the Project have been removed and, with the exception of impacted soil that may have been left in place beneath the rip rap to the west and Building No. 6 to the east, IR Site 3 contains non-impacted imported backfill. Building No. 6 Administration Building was present adjacent to and east of the Project. A rock wall was present to the west near the Bay Shoreline.

- **IR Site 4 (Drum Lot 1):** Four buildings were observed: Buildings 89 [Lube Oil Storage], Operations Building, Building 77 (This building was used for oil spill storage [Geomatrix, 2008]), and Building 69 [Pump House]). In addition, several pumps and one AST are also present. Most of this area is covered by concrete and the former railroad tracks are still present. An abandoned aboveground petroleum pipeline was observed in the southern portion of IR Site 4 (Drum Lot 1).
- **South Shoreline:** What appeared to be a small day tank within secondary containment, a concrete pad, and portions of an aboveground petroleum pipeline were observed on the west side of Burma Road. Segments of the former railroad track were observed on the east side of Burma Road.
- **Building 87:** This building is located to the west of Drum Lot 2, near the south shoreline of the NFD. Building 87 is a one-story corrugated steel Quonset hut built on a concrete slab. According to the Navy's Disease Vector and Ecology Control Center, Building 87 was used as an industrial supply warehouse and equipment repair, locomotive maintenance, and training facility (Terraphase, 2011).
- **Point Molate Beach Park:** The former railroad track runs through the center of the park. An asphalt paved parking lot is located adjacent to and east of the track and to the south of Building 87. The area further south is relatively undeveloped. The location of the former railroad corridor is defined by a trench located to the south of the park.

FINDINGS

The primary objective of the Project is to construct a 10-foot wide, asphalt-paved multi-use, non-vehicular trail with two foot shoulders (total width of Project is approximately 14-feet) adjacent to or within a former railroad alignment. The maximum excavation depth during the Project is anticipated to be approximately 2-feet bgs. No groundwater is anticipated to be encountered during construction of the Project.

As noted above, the purpose of this assessment was to identify the presence or likely presence of any potential environmental concerns (PECs) in connection with the Project so that mitigation measures and/or engineering controls can be implemented such that unacceptable risk, if present, is minimized to construction workers and future site users during and/or after construction of the Project. Because only the near surface soils (between

ground surface and 2-feet bgs) are expected to be disturbed and direct contact with groundwater is not anticipated during construction, the assessment did not include an evaluation of deeper soils and/or groundwater conditions beneath and/or adjacent to the Project. In addition, vapor intrusion to indoor air from the migration of volatile chemicals in the subsurface was also not evaluated because the Project is not expected to include the use of or construction of any buildings or enclosed spaces.

Records Review

NCE reviewed readily available historical use information pertaining to the Project. These references were reviewed for evidence of activities that would suggest the potential presence of PECs in connection with the Project. The historical records review included researching and examining the following records: historical topographic maps, historical Sanborn Maps, historical aerial photographs, previous reports, city directories, and available current land title records for environmental cleanup liens and other activity use limitations, such as engineering and institutional controls.

Copies of the historic topographic maps, historical aerial photographs, a city directory report, a Sanborn Map Report, and a lien search report provided by Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut are included as attachment C. NCE's summary of this information is provided below.

Historical topographic Maps

This scope included reviewing historical topographic maps provided by EDR (2016a). EDR's historical map report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s. NCE reviewed historical topographic maps for the years 1895, 1899, 1915, 1947, 1948, 1959, 1973, 1980, and 1995. Copies of the historical topographic maps can be found in Attachment E. The following summarizes this review:

Year	Project Vicinity Features
1895	Map shows the Project vicinity as undeveloped land. A light house is shown on an island located slightly west of San Pablo Point.
1899	This map appears similar to the 1895 topographic map.

1915	<p>A railroad identified as the "Richmond Belt" is shown in the eastern portion of the peninsula, adjacent to and west of the eastern coastline. This railroad follows the coastline around San Pablo Point and ends near the northern portion of Segment B. Several large buildings, a pier, and several unimproved roads associated with Point Orient are shown to the north of Segment B. Two large structures (Building No. 1 Warehouse and Building No. 6 Administration Building) and a pier are also shown at "Winehaven." An unimproved road that extends in a westerly direction from the light duty road to the tip of Point Molate is shown. A quarry is also shown to be present at Point Molate. Several small buildings and piers are visible between Point Molate and Castro Point. A northwest trending light duty road is shown on the west side of Point San Pablo Peninsula. Shown in the southwestern portion of the peninsula near Segment A are two quarries or open pit mines. Further south is a long wharf. Several ASTs are shown in the southeastern portion of the Peninsula. The area to the southeast of Segment A is developed.</p>
1947	<p>The railroad noted on the 1915 topographic map now extends around the entire peninsula coastline. Additional buildings are shown to have been constructed at Winehaven. Located between the southernmost large building (Building No. 6 Administration Building) and the bay is the former sump pond. Extending west from Point Molate is the fuel pier. The Point Molate quarry is no longer depicted. An AST is located slightly east of Point Molate. The buildings and piers identified on the 1915 topographic map between Point Molate and Castro Point are no longer shown. Two railroad spurs are located to the east between Point Molate and Castro Point. A pier is depicted at Castro Point. An open pit mine is located adjacent to Segment A. Visible on the eastern and southeastern portions of the Peninsula is an area with a large quantity of ASTs identified as "Oil Tanks." Several east trending roads that appear to terminate near the top of the Peninsula are visible to the east of Segment B. Several ASTs are visible at Point Orient. The City is visible to the south.</p>
1948	<p>No significant changes are observed to the Project or the surrounding properties.</p>
1959	<p>No additional significant changes were noted except for the following at Section B: Winehaven is now identified as the "Naval Fuel Supply Depot." Two railroad spurs end at Point Molate. The area to the southeast of the Site is identified as an Oil Refinery. The San Rafael Bridge is visible to the southwest of the Site. Foreshore flats are visible to the east of the Site.</p>
1973	<p>No additional significant changes were noted at the Site except for the following at Segment B: two piers are visible between Point Molate and Castro Point. No additional significant changes were noted in the immediate vicinity.</p>

1980	The three treatment ponds are present in the location of the former sump pond (Segment B). A north trending peninsula is visible at Castro Point (Segment A), which suggests this area was filled in sometime between 1973 and 1980 to create the peninsula. Mine tailings and several ASTs are depicted to the east of Segment A.
1995	The ASTs that were identified previously at Point Orient have been removed. A couple of the large buildings at the NFD Pont Molate have been removed. The dry lake east of Castro Point is now depicted as an intermittent lake. Additionally, most of the structures at Point San Pablo have also been removed.

Historical Fire Insurance Maps (Sanborn Maps)

NCE requested EDR to conduct a search for available Sanborn Maps. EDR (2016b) reported that Sanborn Map coverage was not available for the Project (EDR Sanborn Map Report is presented in Attachment C).

Aerial Photographs

The scope included reviewing historical aerial photographs provided by EDR (2016c). Aerial photographs frequently provide visual documentation of site conditions at the time of the photographs. Activities such as dumping or industrial use can often be discerned through the review of aerial photographs. NCE reviewed historical aerial photographs for the years 1939, 1948, 1958, 1968, 1974, 1981, 1993, 1998, 2005, 2009, 2010, and 2012 for the Site and surrounding areas. These photographs are presented in Attachment C. The source of each photograph is listed below. The following is a summary of the aerial photographs reviewed:

Year	Project and Surrounding Areas	Source
1939	A railroad appears to generally run parallel to the coastline around the peninsula. Several ASTs are visible at Point Orient. The buildings associated with the Winehaven winery are present (Segment B). What appear to be road cuts are visible between Point Molate (Drum Lot No. 1; Segment B) and the southern portion of Segment A. Two piers are visible at Castro Point (Segment A). In addition, a railroad spur is also visible at Castro Point. A west trending wharf is visible to the west. Several unimproved roads are visible on the west facing slopes. A quarry is visible to the east/northeast of Segment A. Further east are several ASTs.	Fairchild

Year	Project and Surrounding Areas	Source
1948	The former sump pond has been enlarged. Two buildings and two railroad spurs have been constructed at Point Molate (Drum Lot 1). An AST is visible slightly east of Point Molate. Disturbed areas of earth (i.e., the footprints of the hillside USTs) and associated roads are visible on the west facing slopes between Point Molate and Castro Point. In addition, two railroad spurs are also visible (Drum Lot 2). In addition, both drum lots appear that they are being used for storage. A wharf has been constructed in the northern portion of Castro Point. The quarry to the east of Segment A has been enlarged. The Chevron facility has expanded to the north on the eastern side of the Peninsula and more ASTs have been constructed to the east of Segment A, on the east side of the Peninsula.	USGS
1958	Building 87 is visible to the west of Drum Lot 2. A round shaped area at the top portion of Castro Point appears to have been disturbed. The San Rafael Bridge is visible to the south/southwest of Segment A.	USGS
1968	No additional significant changes were noted except for the following: at Segment A, a marina is visible on the north side of Castro Point.	USGS
1974	No additional significant changes were noted at the Site except that a north trending peninsula appears to have been constructed adjacent to and east of the Marina in the northern portion of Castro Point and that a surface depression appears to be present on the hillside above and to the east of Castro Point. Several ASTs have been constructed in the vicinity of the quarry. Additional ASTs have been constructed on the east slope of the peninsula.	USGS
1981	The three treatment ponds at IR Site 3 have replaced the former sump pond. Drum Lots 1 and 2 appear relatively empty.	USGS
1993	Water is present within the depression at Castro Point. The marina is no longer present at Castro Point.	USGS
1998	The ASTs at Point Orient are no longer present. The Castro Point depression appears to contain more water than what was observed on the 1993 photograph.	USGS
2005	No additional significant changes were noted at the Site, except the three treatment ponds are no longer present	USDA/NA IP

Year	Project and Surrounding Areas	Source
	adjacent to Segment B and a small building is visible at Castro Point.	
2009	No additional significant changes were noted.	USDA/NA IP
2010	No additional significant changes were noted.	USDA/NA IP
2012	No additional significant changes were noted.	USDA/NA IP

City Directory Abstract

The scope included reviewing the City Directory Abstract Report provided by EDR for information regarding past occupants and land uses within and/or adjacent to the Project (2016d). A copy of the City Directory Abstract report can be found in Attachment C. EDR reviewed business directories including city, cross reference and telephone directories, if available, for the Project area at five year intervals for the years between 1975 and 2013. With the exception of the Paktank Corp Richmond Terminal and the US Navy Fuel Depot, which are discussed in more detail below, the review of the City Directory information was inconclusive as to whether the historical uses of the adjoining properties have led to environmental conditions in connection with the Project.

Environmental Lien Report

The scope included reviewing lien information provided by EDR (2016e). The EDR LienSearch Report (see Attachment C) provides results from a search of available land title records for environmental cleanup liens and other activity and use limitations (AULs) such as engineering controls and institutional controls. The documentation of the search is included in Attachment C.

The report concluded that no environmental liens or activity and use limitations (AULs) were found for the Chevron-owned parcels associated with the Segment. However, a covenant to restrict use of the City-owned property (Segment B) was found. The covenant was made in 2000 between the City and the RWQCB because the RWQCB "determined that this Covenant is reasonably necessary to protect present and future human health and safety and the environment as a result of the presence on the Property of hazardous materials."

REGULATORY REVIEW

NCE conducted a review of regulatory search information prepared by EDR (2016f), subject to their limitations and disclaimers. The EDR Radius Map Report is included as Attachment C. In addition, information was obtained from a review of the State Water Resources Control Board's (SWRCB's) Geotracker website (<http://geotracker.waterboards.ca.gov>) and the

California Department of Toxic Substances Control's (DTSC's) Envirostor website (<http://www.envirostor.dtsc.ca.gov/public/>).

The former railroad was not listed in the EDR Radius Map Report. The majority of listings identified from the environmental database search are associated with the NFD portion of Segment B. A summary of the information obtained from the EDR Report, Geotracker, and Envirostor is summarized below.

Adjacent or Nearby Properties

1. **Bulk Fuel Storage Fac.** This facility was located on the hillside adjacent to and east of the southern portion of Segment B and occupied 31.35 acres. It was listed on the Envirostor database, which indicates a known release to the subsurface. According to a 2004 Sacramento Corps of Engineers letter report (2004), "the United States Department of Defense acquired the 31.35 acres from the Blake Brothers for the construction of a bulk aviation fuel storage facility to be used by the Air Force. The Air Force subsequently abandoned the plans, and, as a result, the United States Department of Defense (DOD) never made improvements to the facility. In October 1995, Standard Oil Company (now Chevron) acquired the property. In 2002 and 2004, the Sacramento Corps of Engineers performed site visits to look for evidence of hazardous or toxic waste, explosive ordnance, or hazardous building debris as a result of DOD use at this facility. No evidence was observed." Based on this information and its location, the potential for environmental impacts from this facility to the Project appears low.

2. **Dutra Materials.** This facility is located to the east of Segment A, on the east side of Western Drive (now called Stenmark Drive). It is listed on only the US Mines database and is identified as the Richmond Quarry. Review of a State Mining and Geology Board Executive Officer's Report (2010) indicates the Richmond (Chevron) Quarry encompasses approximately 126 acres and includes a processing and recycling plant, significant volumes of imported stockpiles of concrete demolition and construction debris, and asphalt and soil, which is used for reuse and recycling. Reportedly, a Reclamation Plan is being prepared to resolve revegetation and slope stability concerns raised by the State Mining and Geology Board (SMGB; www.isa-assoc.com). This facility is not listed on Geotracker or Envirostor. Based on this information, its location, and information presented on the EDR Radius Map Report, the potential for environmental impacts from this facility to the Project appears low.

3. **Pacific Molasses Company**, 2055 Western (now called Stenmark Drive). This facility is listed on the following databases: LUST, HAZNET, HIST CORTESE, NPDES, SLIC, and Contra Costa Co. Site List. This facility is reportedly located near Segment A near the east side of Stenmark Drive. Review of the Envirostor database indicates that diesel-impacted soil was encountered during tank closure. It also indicates that the regulatory case status was closed in April 1997. Based on its regulatory case status, the potential for environmental impacts from this facility to the Site appears low.

4. **Paktank Richmond Inc.**, 2101 Western Drive (now called Stenmark Drive). This facility was located north of Segment B (Tetra Tech, 2003). It is listed on the following databases: LUST, HIST UST, RCRA-SQG, SWEEPS UST, CA FID UST, HIST Cortese, and the Contra Costa Co. Site List. This facility was a fuel terminal with several ASTs. Review of the RCRA-

SQG record indicates that violations (area of violation was Generators-General) were reported in 1985, 1992, 1994, and 1999, but that compliance was achieved for each of the violations. According to the RWQCB (2007), in October 1986, two diesel underground storage tanks (USTs) were removed from this facility. Soil samples collected from the tank basin indicated that diesel-impacted soils were present. Most of contaminated soil was over excavated (RWQCB, 2007), and, as a result, the regulatory case status was closed. However, "residual contamination in both soil and groundwater remains at this facility that could pose an unacceptable risk under certain development activities such as site grading, excavation, or installation of water wells. Therefore, the impact of the disturbance of any residual contamination or the installation of a water well near the residual contamination shall be assessed and appropriate action taken so that there is no significant impact to human health, safety or the environment (RWQCB, 2007)." The HIST UST record indicates that this facility was a bulk liquid terminal containing five USTs. Based on its location, the potential for environmental impacts from this facility to the Project appears low.

5. **Caltrans-Richmond-San Rafael Bridge**, located adjacent to and south of Segment A. This facility was listed on both the Envirostor and VCP databases. According to the Envirostor database, this facility consists of upland areas that are located at the eastern approach of the bridge. Bridge maintenance included the use of water- and lead-based paints (LBPs) as a primer. Water and aluminum based paints were used as a finish coat. The cleanup status for this facility is listed as no further action as of February 2002. Based on its regulatory status, the potential for environmental impacts from this facility to the Project appears low.

6. **Cal Trans – Richmond/San Rafael**, Toll Plaza I-580. This facility is located approximately 800-feet to the east of the Project. This facility is listed on the CA FID UST database, which indicates the presence of USTs. The CA FID UST database listed the status as inactive. This facility is not listed on the Geotracker database. Based on this information, the potential for environmental impacts from this facility to the Project appears low.

7. **Modesto Tallow**. This facility is located approximately 0.25 miles to the southeast of Segment A. It is listed on the LUST and HIST CORTESE databases, which indicate reported leaks and/or releases. Review of the LUST record indicates that a UST leak was reported and stopped in 1995 and that the regulatory case status was closed. Review of the EDR radius map indicates this facility is located on the eastern (opposite) side of the peninsula in a separate groundwater basin. Based on this information and its regulatory status, the potential for environmental impacts from this facility to the Site appears low.

8. **Redwood Painting Co.**, 841 Chevron Way, located over 0.5 miles to the east of Segment A. This facility is listed on the following databases: FINDS, CORRACTS, RAATS, ECHO, AND CERTCLIS-NFRAP. Review of the CERCLIS-NFRAP record indicates this facility does not qualify for the National Priorities List (NPL) based on existing information. This facility is located on the east side (i.e., opposite side) of the peninsula in a different groundwater basin. Based on this information and its regulatory status, the potential for environmental impacts from this facility to the Site appears low.



9. **Chevron Richmond Refinery**, 841 Chevron Way. This facility is listed on the following databases: EMI, ENF, NPDES, SLIC, Envirostor, HWP, CHMIRS, WMUDS/SWAT, Cortese, LDS, and Contra Costa Co. Site list. This facility is located on the east side (i.e., opposite side) of the peninsula in a different groundwater basin. Based on this information, the potential for environmental impacts from this facility to the Site appears low.

Segment B (NFD)

Review of the EDR report indicates that the NFD was listed on the following UST related databases:

Facility Name	Database(s)
U S Navy Fuel Dept., NSCO, Point Molate Site	SWEEPS and CA FID UST
Naval Fuel Depot Point Molate Site 1	SWF/LF
GW Mon & NPDES Packaged Treatment System	SLIC
Fuel Dept. NSCO, Point Molate Site	HIST UST
Pacific Bell	RCRA-SQG
NFD Point Molate Site 1 – Former Landfill	SLIC
Point Molate/Richmond NSC, 300 + acres; in the Potrero Hills	Envirostor and Response
Point Molate, Fuel Depo NSCO, Point Molate	WMUDS/SWAT
CAO-Point Molate	HIST Cortese
Naval Supply Center, NSC Fuel Department	RCRA-LQG
<p>Note: SWEEPS UST, CA FID UST, HIST UST indicate the presence of underground storage tanks (USTs). SWF/LF indicates the presence of an active, closed, or inactive solid waste disposal facility or landfill. Envirostor and SLIC databases indicate a known release to the subsurface. RCRA-LQG and RCRA-SQG databases indicate the use and disposal of material regulated under the Resource Conservation and Recovery Act (RCRA-SQG). WMUDS/SWAT indicates the presence of a registered waste management unit. HIST CORTESE indicates reported leaks and/or releases.</p>	

As noted in the Introduction, the NFD was a former Navy fuel storage facility consisting of 20 concrete fuel storage tanks, capable of storing 40 million gallons of fuel, in 20 large underground storage tanks (USTs; each with 2.1 million gallons capacity) and several smaller USTs connected to refueling piers by over nine miles of buried pipeline (Terraphase Engineering [Terraphase], 2011). Historical releases of fuel occurred during transfer of fuel to and from the USTs (Terraphase, 2011). Based on the data collected to date, the potential for environmental impacts to the Project from the PHC-related COCs in shallow soil appears low.

As part of facility operations, the NFD included a landfill (WMUDS/SWAT) and was a hazardous waste generator. Review of Envirostor indicates the following regarding the landfill:

"The landfill was located to the west of the Project on the hillside at IR Site 1 (See Figure 2 included as Attachment B). From approximately 1957 until 1979, IR Site 1 was primarily used for disposal of construction and landscaping debris. The debris was deposited over a one-acre area. In 1998, an investigation was conducted to assess the general nature and extent of the waste in the landfill. The estimated volume of fill was 20,000 cubic yards. The soil cover for IR Site 1 was designed in 2001 and constructed in 2002. The soil cover is 3-feet thick, has drainage controls and a monitoring system, and was hydroseeded with an annual native grass for erosion protection. The overall goal of the ongoing post closure monitoring and maintenance program is to ensure the integrity, effectiveness, and long-term maintenance and performance of the Site 1 soil cover and drainage system and associated institutional controls established for the site."

Based on its location, the potential for environmental impacts from the former landfill to the Project appears low.

The Resource Conservation and Recovery Act (RCRA) regulations establish basic hazardous waste management standards for persons who produce hazardous waste, called hazardous waste generators. As shown in the table above, the NFD was listed as both a RCRA large quantity generator (RCRA-LQG) and a RCRA small quantity generator (RCRA-SQG). Review of the RCRA records indicates that no violations had been reported. Based on this information, the potential for environmental impacts from the hazardous waste generated at the NFD to the Project appears low.

Orphan Sites

Review of the Orphan's Summary list provided in EDR's Radius Map Report revealed 8 orphan sites. "Orphan Sites" are those facilities that could not be mapped or "geocoded" due to inadequate address information. The "Orphan Sites" are as follows:

Facility Name	Database(s)
Chevron U.S.A., Inc.	RCRA-TSDF, RCRA-LQG, 2020 COR ACTION, PADS, MANIFEST
CHEVRON REFINERY	ENVIROSTOR, HAZNET, HIST CORTESE
US NAVY OAKLAND NAVY SUPPLY CTR PT	CERCLIS, RCRA-SQG
SAN PABLO BAY SPORTSMENS CLUB	CERCLIS-NFRAP
CATELLUS DEVELOPMENT CORP	SLIC
POINT ISABEL PARK TRAIL	SLIC
TERMINAL ONE RICHMOND	SLIC
SEACLIFF VILLAS	SLIC

The first two listings represent the Chevron Richmond Refinery, which is located on the opposite side of the Potrero Ridge that topography separate the Project from the other half of the peninsula where groundwater flow direction is predominantly towards the San Pablo Bay to the east, therefore, the potential for environmental impacts from these facilities to the Project appear low. The other facilities are located at a minimum greater than a half mile from the Project. Based on this information, the potential for environmental impacts from these facilities to the Project appear low.

Previous Reports

NCE reviewed several reports related to Segment B (i.e., NFD Point Molate) that were either provided by the EBRPD, Terraphase and/or were reasonably ascertainable and useful for purposes of this assessment. NCE was not provided with or found any readily available reports associated with Segment A. Provided below is a summary of NCE's review of the information related to Segment B. The summary relies on the data, conclusions, and interpretations in those reports as being representative of Project conditions.

2001 Fuel Pipeline Removal and Characterization

Between October 1998 and October 2000, IT Corporation (IT, 2001) on behalf of the Navy performed fuel line removal and demolition activities associated with the Drum Lot 1/Pier Area IR Site 4 Pipeline Removal Project. The locations of the former underground pipelines are presented on IT's Figures 2 through 7 (presented in Attachment D). Activities associated with the project included:

- Removal and off-site disposal of approximately 48,310-feet of fuel line;
- Removal and off-site disposal of approximately 437 tons of nonfriable asbestos-coated fuel piping and transite piping;
- Removal and off-site disposal of approximately 71 tons of friable asbestos-insulated steam lines;
- Demolition of 29 fuel line valve boxes; and
- Off-Site disposal of approximately 10,900 tons of PHC-contaminated soil.

Approximately 160-feet of fuel line was abandoned in place (rinsed and capped), and approximately 1,000-feet of fuel line was grouted in place (rinsed, capped, and filled with a cement grout). Approximately 11,800 tons of soil was imported during the pipeline removals. Other imported materials included approximately 5,450 tons of Class II AB, approximately 770 tons of bedding sand, and approximately 2,500 tons of C57 drain rock.

Based on a review of IT's Figures 2 through 7 (presented in Attachment D), it appears that most of the underground pipelines were located within and/or adjacent to the Project boundaries. In addition, the fuel lines that were grouted in place and filled with a cement grout are located in the southern portion of Segment B.

In 2001, Tetra Tech EM Inc. (2001) evaluated on behalf of the Department of the Navy (Navy), the nature and extent of contamination based on the data and information obtained from previous characterizations of historical fuel releases and identified cost-effective methods for corrective action. The areas addressed in the report include the North Shoreline Area, IR Site 4 (Drum Lot 1), and the South Shoreline Area. The Point Molate Public area was not addressed in the characterizations because no fuel sources related to the former UST system were found. Review of Figure 5-1 (Tetra Tech, 2001), which is included as Attachment E, indicates the aboveground pipelines were located generally

adjacent to and west of the railroad corridor from Drum Lot No. 1 to just north of Building 87³.

In its report, Tetra Tech stated the following in regards to the former underground pipeline characteristics: Depths to the pipelines generally ranged from 2.0- to 12-feet bgs, and the former pipelines were composed of steel and coated with an asphaltic mesh wrapping. In regards to the environmental conditions observed in the vicinity of each of the near shore areas located adjacent to and/or within the Project, Tetra Tech stated the following:

- **North Shoreline:** No historical leaks or spills of product are known to have occurred in this area. Some stained soils were observed beneath the pipelines approximately 300-feet north of Building 1; however, the stained soils did not exhibit PHC odor and no PHC constituents were reported in the confirmation samples collected following excavation and removal of the stained soils.
- **Drum Lot 1:** Concentrations of PHCs reported in samples collected within 10-feet bgs from soil that remained after excavation and removal of the pipelines were generally less than 300 milligrams per kilograms (mg/kg). Only 4 of 38 samples reported having a concentration in excess of 400 mg/kg. In addition, one or more PAHs compounds were reported in the samples; however, the reported concentrations did not coincide with the highest concentrations of total petroleum hydrocarbons (TPH) as motor oil (TPH-MO).
- **South Shoreline Area:** Soil contamination was observed during removal of the pipelines along the south shoreline.

2002 Final Corrective Action Plan

In 2002, Tetra Tech EM Inc. (2002) prepared on behalf of the Department of the Navy (Navy) a draft corrective action plan (CAP) that presented an approach to evaluate and remediate PHC-impacts at the NFD. The observations noted in the draft CAP were similar to those noted in the characterization report (Tetra Tech, 2001). Based on those observations, Tetra Tech recommended the following corrective actions at the following shore areas:

- **Drum Lot 1 and South Shoreline:** Conduct a tier 2 risk assessment⁴ to address residual PAH contamination in soil.
- **South Shoreline:** Conduct a tier 2 risk assessment to address residual PHC and PAH contamination in soil.

2003 Supplemental Environmental Baseline Survey

³ As noted in the Site reconnaissance section of this memorandum, the aboveground pipelines were observed to still be present at the locations shown on Figure 5-1 (See Attachment E).

⁴ According to Tetra Tech (2003), a Tier 2 risk assessment evaluates potential cancer risks and noncancer hazards to potential receptors under current and potential future land use conditions. A Tier 1 risk assessment identifies constituents of potential concern (COPCs) by comparing maximum concentrations from the investigation areas with conservative, risk-based action levels. These action levels include those developed in the Fuel Product Action Level Development Report (FPALDR; Tetra Tech 2001) and preliminary remediation goals developed by the United States Environmental Protection Agency (EPA).

In 2003, Tetra Tech (2003a) performed on behalf of the Navy an update of a 1996 basewide environmental baseline survey. The purpose of the survey was to update the 1996 environmental condition of property (ECP) categories. According to Tetra Tech, the historical operations and/or the environmental conditions observed at the following near shore areas included:

- **IR Site 3 (Former Treatment Ponds):** Previous operations included a sump pond, disposal of industrial wastes, and fuel transfer and reclamation operations. In 1995 and 1996, the Navy installed a containment wall and extraction trench to prevent floating free product from migrating to the San Francisco Bay and near-shore sediments.
- **IR Site 4 (Drum Lot 1):** In the late 1990s, the underground pipelines were removed. Anecdotal evidence suggests that the area near the drum filling plant (Building 89) was temporarily used for the storage of trichloroethene (TCE).
- **South Shoreline:** Transformers in this area did not contain polychlorinated byphenyls (PCBs). Asbestos containing materials (ACMs) may exist in wrapping and insulation on the underground fuel lines that were abandoned in place. The Navy stored pesticides, repair pesticide application equipment, and trained personnel (in the use and application of pesticides) at Building 87 in a classroom setting. Although the Navy did not conduct pesticide application at this facility, pesticides have been found in shallow soils outside of Building 87. These pesticides were investigated and addressed following discovery⁵.

March 2003 Human Health and Ecological Risk Assessment (HHERA)

In 2003, Tetra Tech (2003b) performed on behalf of the Navy a human health and ecological risk assessment (HHERA), which focused on the exposure to contaminants in surface soils at the North Shoreline, South Shoreline, and Drum Lot 1 areas. Prior to performing the HHERA, additional sampling and analysis of PHCs, PAHs, and volatile organic compounds (VOCs) in soil was performed to support the HHERA.

Current groundskeeper, future park maintenance worker, and future recreational user exposure scenarios were evaluated for all of the investigation areas. It was assumed that current groundskeeper and future recreational users would be exposed to soils less than 2-foot bgs and future park maintenance workers would be exposed to soils less than 10-foot bgs. The potential complete soil exposure pathways for each of the receptors included incidental soil ingestion, dermal contact with the soil, and inhalation of particulates and VOCs released from soil.

⁵ Reportedly, PAHs and pesticides were limited to subsurface soil in an area around a former drain in Building 87, along a former drain pipe, and downgradient of a septic tank. In June 2001, approximately 206 tons of pesticide-contaminated soil were excavated around Building 87. Confirmation soil samples showed no residual concentrations of the main pesticide of concern, dieldrin, at concentrations greater than the applicable commercial/industrial screening levels remained in the area.

Tetra Tech recommended no further action (NFA) for soil at the North Shoreline Area because concentrations in soil were less than risk-based human health and ecological screening criteria. In regards to Drum Lot 1 and the South Shoreline Area, Tetra Tech identified PAHs as the human health constituents of potential concerns (COPCs) in soil for these areas. The risk assessment concluded that there are no unacceptable risks to potential humans or ecological receptors from exposure to (CERCLA) contaminants⁶ at Drum Lot 1 or the South Shoreline Area.

2005 Risk Assessment

In 2005, Sullivan Consulting Group (Sullivan) and Tetra Tech (2005), on behalf of the Navy, performed an additional human health risk assessment for IR Site 4 including Drum Lot 1 and Drum Lot 2/Building 87 to further evaluate Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) contaminants. According to Sullivan and Tetra Tech (2005), CERCLA contaminants are those that are not associated with PHC releases that were identified as chemicals of concern (COCs) for IR Site 4. This evaluation assessed potential human health risks for future industrial and future hypothetical residential exposure scenarios from exposure to contaminants in subsurface soil (0 to 10-feet bgs). These exposure scenarios had not been evaluated previously.

The analytical data for subsurface soil that was used to assess potential risks in the 2003 HHERA was also used for this assessment. Two PAHs were identified as COCs at Drum Lot 1: benzo(a)pyrene and dibenzo(a,h)anthracene. These two COCs were reported mainly in samples collected along the pipeline removal excavation. In the vicinity of Building 87 (See Figure 2 included as Attachment B), benzo(a)pyrene was identified as the COC. The two highest benzo(a) pyrene concentrations (8.9 and 2.8 mg/kg) were reported along the former pipe southwest of Building 87. These concentrations exceed the Fuel Product Action Levels (FPALs)⁷ of 0.4 and 0.15 mg/kg for residential land uses and park maintenance worker, respectively. The pesticide, dieldrin, was also identified as a COC in soil near Building 87. Similar to the 2003 HHERA findings, this risk assessment concluded that soil poses no unacceptable risks to human health or the environment.

April 2008 Phase I ESA

In April 2008, Geomatrix (2008) performed a pre-acquisition Environmental Site Assessment (ESA) of the NFD located in the vicinity of Segment B. The ESA was performed on behalf of the United States Bureau of Indian Affairs (BIA), and Upstream Investments, LLC under contract to Analytical Environmental Services (AES). At that time, portions of the Site were currently owned by the City and the other portions were owned by the United States Navy (Navy). The BIA was considering the potential federal trust-acquisition of the Site for the Guidiville Band of Pomo Indians. In its report, Geomatrix stated the following in regards to the environmental conditions within or adjacent to the Project at Segment B, respectively:

⁷ According to Tetra Tech (2003), Fuel Product Action Levels (FPALs) were developed to screen results for petroleum contaminated soil, groundwater, and surface water samples at the NFD. The RWQCB approved the FPALs presented in Tetra Tech's 2001 final FPAL Development Report.

- **Project:** Potential chemical releases and handling practices along the railroad spurs may have resulted in environmental impact, which have not been sufficiently addressed during previous site investigations. Specifically, there is a potential for the presence of heavy metals in shallow soil along the railroad spurs as a result of past routine maintenance activities, including herbicide applications, which has not been assessed. Therefore, the presence of the railroad spurs is considered a PEC.
- **IR Site 3 (Former Treatment Ponds):** Soil samples have contained PHCs, chlorinated VOCs (CVOCs), PAHs, and metals. The Navy is responsible for submitting a corrective action plan to the RWQCB for remediation of soil in the former treatment ponds area. Based on the findings from previous environmental investigations and the current regulatory status of the former treatment ponds area, IR-03 is considered a REC.
- **IR Site 4 (Drum Lot 1):** Soil samples have contained PHCs, CVOCs, and PAHs. Removal actions and a risk assessment have been completed and no further action has been recommended by the Navy for soil and the RWQCB concurred with the Navy's recommendation for soil.
- **South Shoreline Area:** Soil samples collected in the south shoreline area have contained PHCs and PAHs. Removal actions and a risk assessment have been completed and no further action has been recommended by the Navy and approved by the RWQCB for soil.
- **Building 87:** Soil samples collected at Building 87 have contained pesticides and PAHs. A removal action and risk assessment have been completed and no further action has been recommended by the Navy for soil, but has not been approved by the RWQCB. Based on the findings from previous environmental investigations and its current regulatory status, Building 87 is considered an environmental concern.

2009 Draft Environmental Impact Statement (EIS) / Environmental Impact Report (EIR)

In 2009, Analytical Environmental Services (AES; 2009) prepared on behalf of the United States Bureau of Indian Affairs (BIA) and the City a draft EIS/EIR to address the environmental effects of selling approximately 266 acres of City owned property at the NFD. In addition to the environmental concerns noted in Geomatrix's 2008 Phase I ESA, AES also included lead impacted soils from lead based paint (LBP) due to the age of the structures located on the site, which assumed the structures potentially contain LBP.

2012 Soil and Groundwater Management Plan

In 2012, Terraphase (2012) prepared on behalf of Upstream Point Molate LLC a soil and groundwater management plan for the NFD. The purpose of the plan is to document the procedures to be used in conducting subsurface activities and demolition activities at the NFD, which may disturb soil contaminated with anthropogenic materials or produce groundwater containing anthropogenic materials. Terraphase (2011) stated that the areas of known soil impact and the associated contaminants of concern (COCs) include:

- **IR Site 3 (Former Treatment Ponds):** PHCs, metals, PAHs, VOCs, and solid waste.

- **IR Site 4 (Drum Lot 1):** PHCs.

INTERVIEWS

Segment A

On February 2, 2016, NCE conducted a telephone interview with Ms. Julie Fitzpatrick, Chevron's XYZ Vice President, Western Zone, and Mr. Saulius Germanas with Leidos, a consultant for Chevron. They provided the following information:

- Ms. Fitzpatrick became involved with the Project in October 2015. The previous land manager retired. Mr. Germanas has been consulting on the Chevron Richmond refinery for over 13 years.
- The Chevron refinery first started operations in 1902, but did not include operations at the Chevron parcels in the vicinity of Segment A. Chevron acquired these parcels from Wells Fargo Bank in 1974.
- The large depression located adjacent to and south of the southernmost portion of Segment A (see Map 1) is currently being used as a storm water detention pond. The water contained in this pond is surface water from the quarry located to the north of Segment A. This area previously contained two ASTs. The black area on Map 1 is the tank foundation for one of the ASTs. The other AST was located in the vicinity of the storm water detention basin.
- The large asphalt area located to the north of the Project is a former tank pad (see Map 1).
- The stormwater retention pond to the east of Castro Point (Map 4) was originally an aggregate quarry.
- Ms. Fitzpatrick and Mr. Germanas had no knowledge of incidents of spills, leaks, or unauthorized releases and no knowledge of any hazardous materials issues and/or incidents associated with the Project or in the vicinity of the Project. Mr. Germanas suggested that elevated levels of arsenic and PAHs may be present along the former railroad corridor due to the past uses of the railroad.

Segment B

On February 18, 2016, NCE conducted a telephone interview with Mr. William Carson, president and principal engineer of Terraphase and the City's NFD environmental consultant. He provided the following information:

- A remedial excavation was recently completed at IR Site 3 (Former Treatment Ponds). With the exception of potential contamination that was left in place adjacent to the rip rap near the bay, the upper five feet at IR Site 3 (Former Treatment Ponds) was backfilled with materials appropriate for multi-family residential land uses.

- Stained PHC-impacted shallow soils may be encountered within the Project area in the vicinity of the South Shoreline Area.
- Pesticides may be present in shallow soils in the vicinity of Building 87.

SITE RECONNAISSANCE

On February 1, 2016, Mr. Leacox and Mr. Brett Bardsley performed visual and/or physical observations of the Project and immediately adjacent properties. The weather conditions at the time of the reconnaissance were partly cloudy skies, with no weather-induced limitations to NCE's reconnaissance. Photographs taken as part of the reconnaissance are provided on Plates 4 through 13. The findings of the inspection are summarized below:

- **Drums and Containers for Storing Waste:** Two 55-gallon drums that did not appear to contain liquid wastes were identified inside Building 69 Pump House (Map 13; Plate 8, Photo 18). The contents contained in the drums is not known.
- **Bulk Storage Tanks:** Three small ASTs (i.e., day tanks) were observed in the vicinity of the Project at IR Site 4 (Drum Lot 1) (Map 13). The first AST was observed adjacent to and on the south side of the Operations Building, within secondary containment (Map 13; Plate 6, Photo 10). The next AST was located adjacent to and on the east side of Building 69 Pump House (Map 13; Plate 8, Photo 19). The last AST was located to the east of IR Site 4 (Drum Lot 1) and was located within secondary containment (Map 13; Plate 8, Photo 20). Reportedly, the ASTs are empty. No underground storage tanks (USTs) or associated vent pipes were observed within or adjacent to the Project. An abandoned, aboveground 10-inch metal petroleum pipeline was observed on the west side of Burma Road between the southern portion of IR Site 4 (Drum Lot 1) (Map 4; Plate 9, Photo 22) and the northern portion of the South Shoreline Area. What appeared to be a large diameter polyvinyl chloride (PVC) petroleum aboveground pipeline was observed to be present to the east of the Project and slightly north of Building 87.
- **Site Waste and Wastewater:** Trash was observed on the adjoining parcel to the west of the Project at Castro Point.
- **Stained Soil, Stained Pavement, or Stressed Vegetation:** Stained soil, stained pavement and stressed vegetation were not observed.
- **Liquid Discharges:** Liquid discharges were not observed.
- **Pools of Liquid:** NCE did not observe any standing surface water bodies or pools of liquid likely to be hazardous substances or petroleum products. A small standing body of water was observed in the northern portion of IR Site 4 (Drum Lot 1).
- **Pits, Ponds, or Lagoons:** NCE did not observe any pits, ponds, or lagoons of liquid likely to contain hazardous substances or petroleum products.

- **Wells:** Several groundwater monitoring wells were observed adjacent to the Project at Segment B. No potable water supply wells were observed. The East Bay Municipal Utility District manages and provides the potable water conveyance to housing and business in the City (www.ci.richmond.ca.us).
- **On-Site Fill:** Near subsurface materials within or adjacent to the Project most likely consists of emplaced fill for the following reasons:
 - Due to the steep terrain along the former railroad corridor, flat horizontal areas had to be made to allow the railroad and the adjoining roads to be constructed. The flat horizontal areas along the former railroad corridor were most likely made by excavating a "road cut" in the uphill side of the corridor and using the materials from the excavation to make an embankment on the downhill side of the corridor. The railroad and the adjoining roads were then most likely constructed partially on the flat area created by the road cuts and partially on the embankment.
 - Review of previous environmental reports indicates that emplaced fill, consisting of on- and off-site sourced materials, occur in the low-lying shoreline areas (Geomatrix, 2008). For example, review of the historical topographic maps and aerial photographs indicates that a north trending peninsula was constructed in the northern portion of Point Molate sometime between 1968 and 1974 in an area that was formerly part of the Bay. At that same time, a surface depression was noted to the east above Point Molate. Based on this information, it appears that the materials from that depression may have been used to create the peninsula. In addition, in 2001, as noted above, approximately 11,800 tons of soil was imported during pipeline removals at the NFD. Other imported materials at the NFD included approximately 5,450 tons of Class II AB, approximately 770 tons of bedding sand, and approximately 2,500 tons of C57 drain rock. In 2015, as noted in the last section, following remedial excavation, the upper five feet at IR Site 3 (Former Treatment Ponds) was reportedly backfilled with materials appropriate for multi-family residential land uses.
- **Odors:** NCE did not identify strong, pungent, or noxious odors suspected to represent an environment concern to the Project.
- **Air Emissions:** NCE did not observe processes or equipment emitting noticeable vapors or fumes.
- **Polychlorinated Biphenyls (PCBs):** Transformers were identified on utility poles located adjacent to the Project at both segments from IR-4 (Lot 1) to the southern portion of Segment A. In addition, pad mounted transformers were observed adjacent to some of the buildings at IR-4 (Lot 1). PCBs are heat-resistant compounds that for decades were added to cooling oil to prevent fires in heavy machinery and electrical distribution equipment, such as transformers and capacitors

installed on utility poles. Reportedly, in 1993, the Navy removed and replaced all oil-filled electrical equipment containing PCBs greater than 50 parts per million (ppm; Tetra Tech, 2003)⁸ at the NFD. Further, in 2002, the utility poles along the South Shoreline were felled by vandalism; these transformers did not contain PCBs (Tetra Tech, 2003). Based on the age of the utility poles, the potential exists for spills to have occurred in the vicinity of the oil-filled electrical equipment.

- **Asbestos-Containing Materials (ACMs)**: Roofing shingles that are of the age that potentially contain asbestos were observed on the ground in the western portion of IR Site 4 including within the Project at Drum Lot 1 (Plate 6, Photo 9). In addition, portions of the former petroleum pipeline in the southern portion of Segment B had a wrapping material that may contain asbestos (Map 12; Plate 9, Photo 22). Based on the age of the buildings, it is likely that ACMs are present on all of the buildings near the Project.
- **Lead-Based Paint (LBP)**: The painted surfaces on the former and/or current buildings and equipment near the Project may have contained and/or contain lead-based paint (LBP). Based on the age of the buildings, the potential exists for the presence of lead in soil originating from LBPs used on exterior building surfaces that may have since flaked or oxidized and deposited into the surrounding soils.

In addition to the observations noted above, many of the nearby structures appeared to be in a state of disrepair or ruin as a result of age and/or neglect. Additionally, as noted above, it is likely that hazardous building materials (HBMs) may be present on these structures including LBPs and ACMs.

HAZARDOUS WASTE ASSESSMENT FINDINGS

This assessment has revealed the following PECs in connection with the Project:

- **Potential for impacted soils to be present along the railroad spurs from historical railroad activities.** There is a potential for the presence of elevated arsenic and lead related to herbicide applications and PAHs as a result of the combustion of fossil fuel products to be present in shallow soils.
- **Potential for HBMs to be present on the nearby structures and on the ground.** Based on the age of the buildings, the potential exists for the presence of HBMs to be present on the nearby structures and in the soil near those structures. The concerns include:
 - Many of the nearby structures appear to be in a state of disrepair. These structures could attract users of the Bay Trail, and, as a result, could pose an unacceptable risk.
 - The presence of lead in soil originating from LBPs and coatings used on exterior building surfaces that may have since flaked or oxidized and deposited into surrounding soils.

⁸ According to Title 40 Code of Federal Regulations (40 CFR) Part 761.3, non-PCB transformers are any transformer that contains less than 50 ppm of PCBs.

- As noted above, roofing shingles that appear to contain asbestos were observed laying on the ground in the western portion of IR Site 4 (Drum Lot 1) (Plate 6, Photo 9). Disturbance of asbestos containing materials (ACMs) can generate airborne asbestos fibers. In addition, portions of the aboveground petroleum pipeline in the southern portion of Segment B may contain asbestos coating materials (Map 12; Plate 9, Photo 22), as well as the underground piping that was abandoned in place at Segment B (Tetra Tech, 2003).

COCs related to the NFD were not included as PECs in connection with the Project, based on the following:

- Findings of the 2003 HHERA and 2005 risk assessment concluded that there are no unacceptable risks to potential humans (including current groundskeeper, future park maintenance worker, and future recreational user exposure scenarios) or ecological receptors from exposure to the contaminants at the North Shoreline Area, IR Site 4 (Drum Lot 1), and the South Shoreline Area including the area in the vicinity of Building 87.
- According to Mr. Carson, the City's NFD environmental consultant, a remedial excavation was recently completed at IR Site 3 (Former Treatment Ponds). With the exception of potential contamination that may have been left in place adjacent to the rip rap near the bay and beneath Building 6 to the east, the upper five feet at IR Site 3 (Former Treatment Ponds) contains materials appropriate for residential land uses.

RECOMMENDATIONS

This assessment has revealed PECs associated with the Project. To support the planning and design stages, an assessment should be considered and is advisable to provide baseline near surface soil conditions (between the ground surface and two feet bgs) along the proposed Project alignment. This assessment could include soil sampling and testing along the proposed Project alignment except at IR Site 3 (Former Treatment Ponds)⁹ for arsenic related to the historical railroad activities and lead related to both the historical railroad activities and LBPs. To assess if PAHs related to the historical railroad activities are present, NCE recommends that up to 10 samples should also be collected for PAH analysis at random locations along the proposed Project alignment where it is coincident with the former railroad corridor. The selection of which samples will be tested for PAHs will be based on the findings of the first round of arsenic and lead sampling and testing¹⁰.

⁹ NCE does not recommend sampling and testing IR Site 3 (Former Treatment Ponds) because it is assumed that the upper five feet is backfilled with materials appropriate for residential land uses.

¹⁰ It has been NCE's experience on similar railroad projects that PAH-impacted soils are generally less widespread than arsenic impacted soils. In addition, assuming that there have not been significant earth moving activities since construction of the former railroad bed, the PAHs are expected to be higher near the source, along the former railroad bed, than farther away from it. Based on this information, the PAH-impacted soil, if present, will be covered by the Trail where it is coincident with the former railroad bed, and, as a result, will not be available for direct soil contact after construction.

In addition, assuming that the analytical testing shows the former railroad corridor and HBMs to be of concern, NCE will likely recommend the following elements as it relates to design:

- Mitigation measures and/or engineering controls should be developed to isolate users of the Bay Trail from the former railroad bed including where it is not coincident with the Bay Trail.
- Mitigation measures and/or engineering controls should be developed to isolate users of the Bay Trail from the nearby dilapidated structures and presumed presence of HBMs on the structures and on the ground. If the structures are located within the Project limits, NCE recommends that the structures be sampled and tested for HBMs and demolished following appropriate protocols and procedures.
- Sampling and testing of the shingles located within the Project limits should be performed to assess if they contain ACMs. If the testing results show that they contain ACMs, the shingles should be removed prior to construction of the Project.
- Protocols outlined in the 2012 Soil and Groundwater Management Plan (Terraphase, 2012) for the NFD should be followed during soil disturbance and building demolition activities at Segment B.

LIMITATIONS

Information presented in this memorandum does not confirm the presence or absence of subsurface contamination at the Project, but indicates whether the possibility of such contamination exists. Our professional opinions expressed herein are based on limited data; no other warranty is given or implied by this memorandum. A more extensive assessment, that would include a surface and/or subsurface investigation and chemical analyses of soil and/or groundwater samples, would provide more definitive information concerning Project-specific conditions. This Memorandum is complete and accurate to the extent that cited reports and agency information are complete and accurate.

The observations described in this memorandum were made under the conditions stated herein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services within the constraints imposed by the client. The work described in this report was carried out in accordance with the Terms and Conditions of the contract.

In preparing this report, NCE has relied on certain information provided by federal, state, and local officials and other parties referenced therein, and on information contained in the files of governmental agencies, that were readily available to NCE at the time of this assessment. Although there may have been some degree of overlap in the information provided by these various sources, NCE did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment. Observations were made of the Project and of the structures on the Project as indicated in this memorandum. Where access to portions of the Project or to structures

on the Project was unavailable or limited, NCE renders no opinion as to the presence of direct or indirect evidence relating to petroleum substances, hazardous substances, or both, in that portion of the Project and structure. In addition, NCE renders no opinion as to the presence of indirect evidence relating to hazardous material or oil, where direct observation of the ground surface, interior walls, floors, ceiling or a structure is obstructed by objects or materials covering on or over these surfaces.

NCE does not represent that the Project referred to herein contains no petroleum or hazardous or toxic substances or other conditions beyond those observed by NCE during the site walkthrough.

NCE has produced this document under an agreement between NCE and the EBRPD. All terms and conditions of that agreement are included within this document by reference. Any reliance upon this document, or upon NCE's performance of services in preparing this document, is conditioned upon the relying party's acceptance and acknowledgement of the limitations, qualifications, terms, conditions and indemnities set forth in that agreement, and property ownership/management disclosure limitations, if any. It is not to be relied upon by any party other than the EBRPD nor used for any purpose other than that specifically stated in our Agreement or within this Report's Introduction section without NCE's advance and express written consent.

Environmental Professional Declaration:

We declare that, the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in § 312.10 of the Standards and Practices for All Appropriate Inquiries; Final Rule (EPA, 2005).

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Site property. We have developed and performed the all appropriate inquiries in conformance with the standard and practices set forth in 40 CFR Part 312.

REFERENCES

AMEC Geomatrix, Inc. (Geomatrix), 2008. *Pre-Acquisition Environmental Site Assessment, Point Molate, Richmond, California*. April.

California Regional Water Quality Control Board (RWQCB), 2007. *Closure Letter – 2101 Western Drive, Richmond, Contra Costa County*. April 2.

Environmental Data Resources Inc. (EDR, 2016a). *EDR Historical Topo Map Report*. January 13.

EDR, 2016b. *Certified Sanborn® MapReport*. January 13.

EDR, 2016c. *The EDR Aerial Photo Decade Package*. January 14.

EDR, 2016d. *The EDR-City Directory Image Report*. January 14.

EDR, 2016e. *The Environmental LienSearch™*. February 19.

EDR, 2016f. *The EDR Radius Map™ Report with GeoCheck®*. January 13.

Innovative Technical Solutions, Inc. (ITSI, 2005). *Final Post-Construction Summary Report. Closure of the UST, Pipeline, and Valve Box Systems, Former Naval Fuel Depot Point Molate, Richmond, California*. November.

IT Corporation (IT, 2001). *Final As-Built Report, Point Molate Pipeline Removal Projects, Naval Fuel Depot Point Molate, Richmond, California*. May 2001.

RWQCB, 2011. Revised Tentative Order, Updated Site Cleanup Requirements and Rescission of Order Nos. 95-235, 97-124 and 97-125, City of Richmond and United States Department of Defense, Department of the Navy.

Terraphase Engineering Inc (Terraphase), 2011. *Site-Wide Groundwater Monitoring Plan, Former Naval Fuel Depot Point Molate, Richmond, California*. May 24.

Terraphase, 2013. *Third Quarter 2013 Self-Monitoring Report for the Package Groundwater Treatment Plant, Former Naval Fuel Depot Point Molate, Western Drive, Richmond, California (CIWQS 657165) Order No. R2-2012-0012, NPDES No. CAG912002*. October 30.

Terraphase, 2015. *Soil and Groundwater Management Plan, Former Naval Fuel Depot Point Molate, Richmond, California*. September 21.

Tetra Tech EM Inc. (Tetra Tech), 2001. *Characterization of USTs and Fuel Pipelines, Final Report, Naval Fuel Depot Point Molate, Richmond, California*. September 28.

Tetra Tech, 2002. *Final Corrective Action Plan, Naval Fuel Depot Point Molate, Richmond, California*. March 4.

Tetra Tech, 2003a. *Final Supplemental Environmental Baseline Survey. Naval Fuel Depot Point Molate, Richmond, California*. March 3.

Tetra Tech, 2003b. *Final Human Health and Ecological Risk Assessment, Installation Restoration Site 4, Naval Fuel Depot Point Molate, Richmond, California*. March 24, 2003.

Tetra Tech and Sullivan Consulting Group, 2005. *Draft Risk Assessment, Technical Memorandum, Installation Restoration Site 4, Naval Fuel Depot Point Molate, Richmond, California*. January.

PLATES





Copyright: © 2013 National Geographic Society, i-cubed

San Francisco Bay Trail at Point Molate

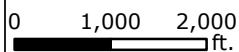
Proposed Alignment Overview Map



Legend

— Proposed Trail Alignment

1 in. = 2,000 ft.



N



Credits: ESRI USA Topo basemap

Date: 12/31/2015

Author: jhall

Figure

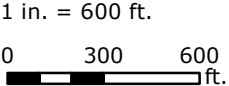
1



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

San Francisco Bay Trail at Point Molate
 Segment A Detail Map

- Legend**
- Segment A
 - - - Segment A Alternate



Credits: ESRI World Imagery basemap
 Date: 12/22/2015
 Author: jhall

Figure 2





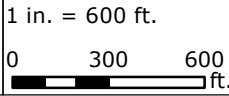
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

San Francisco Bay Trail at Point Molate
 Segment B Detail Map



Legend

— Segment B



Credits: ESRI World Imagery basemap

Date: 12/22/2015
 Author: jhall

Figure 3



Photo 1. View facing north at the former railroad corridor in the northern portion of Segment B (February 1, 2016; Map 16).



Photo 2. View facing south at the former railroad corridor. Building No. Warehouse is located in the left hand portion of the photograph (February 1, 2016; Map 16).



Photo 3. View facing north at the former railroad corridor in the northern portion of Segment B (February 1, 2016; Map 16).



Photo 4. View facing northeast at IR Site 3 (Former Treatment Ponds). Remedial excavation activities were recently completed in this area (February 1, 2016; Map 15).



8795 Folsom Blvd., Suite 250
 Sacramento, California 95826
 (916) 388-5655

Site Photographs
 Hazardous Waste Memorandum
 San Francisco Bay at Point Molate
 Richmond, California

PLATE

4

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	



Photo 5. View facing northeast at the northern portion of IR Site 4 (Drum Lot 1) (February 1, 2016; Map 14).



Photo 6. View facing northeast at the northwest portion of IR Site 4 (Drum Lot 1). What appeared to be asbestos roofing shingles were observed in this area (February 1, 2016; Map 13).



Photo 7. View facing northeast at the northwest portion of IR Site 4 (Drum Lot 1). Visible in the central portion of the photograph are what appear to be asbestos roofing shingles (February 1, 2016; Map 13).



Photo 8. View facing east at the Operations Building located at IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13).



8795 Folsom Blvd., Suite 250
 Sacramento, California 95826
 (916) 388-5655

Site Photographs
 Hazardous Waste Memorandum
 San Francisco Bay at Point Molate
 Richmond, California

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	



Photo 9. View of what appears to be an asbestos roofing shingle at IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13)).



Photo 10. View facing east at drum located adjacent to Operations Buildings (February 1, 2016; Map 13).



Photo 11. View facing south at Pumps located at IR Site 4 (Drum Lot 1) (February 1, 2016; Map 14).



Photo 12. View facing west at Pump House located adjacent to the pier at IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13).



8795 Folsom Blvd., Suite 250
 Sacramento, California 95826
 (916) 388-5655

Site Photographs
 Hazardous Waste Memorandum
 San Francisco Bay at Point Molate
 Richmond, California

PLATE

6

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	



Photo 13. View facing south at southern portion of IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13).



Photo 14. View facing south at southern portion of IR Site 4 (Drum Lot 1). Former petroleum pipeline is visible in the top central portion of photograph (February 1, 2016; Map 13).



Photo 15. View facing northwest at southern portion of IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13).



Photo 16. View facing northeast at Building 69 Pump House located in the southeastern portion of IR Site 4 (Drum Lot 1) (February 1, 2016; Plate 13).



8795 Folsom Blvd., Suite 250
 Sacramento, California 95826
 (916) 388-5655

Site Photographs
 Hazardous Waste Memorandum
 San Francisco Bay at Point Molate
 Richmond, California

PLATE

7

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	



Photo 17. View facing southwest at the southern portion of IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13).



Photo 18. View of drums located in Building 69 Pump House located in the southeast portion of IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13).



Photo 19. View facing southwest at AST located on the east side of Building 69 Pump House (February 1, 2016; Map 13).



Photo 20. View facing south at AST located to the east of IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13).



8795 Folsom Blvd., Suite 250
 Sacramento, California 95826
 (916) 388-5655

Site Photographs
 Hazardous Waste Memorandum
 San Francisco Bay at Point Molate
 Richmond, California

PLATE

8

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	



Photo 21. View facing west at former petroleum pipeline (February 1, 2016; Map 12).



Photo 22. View facing east at former aboveground petroleum pipeline. Pipeline appears to contain asbestos coating (February 1, 2016; Map 12).



Photo 23. View facing southwest at a concrete pad (February 1, 2016; Map 12).



Photo 24. View facing east at former railroad corridor (February 1, 2016; Map 12).



8795 Folsom Blvd., Suite 250
 Sacramento, California 95826
 (916) 388-5655

Site Photographs
 Hazardous Waste Memorandum
 San Francisco Bay at Point Molate
 Richmond, California

PLATE

9

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	



Photo 25. View facing southeast at the former railroad corridor (February 1, 2016; Map 10).



Photo 26. View facing north at the former railroad corridor adjacent to Burma Road (February 1, 2016; Map 10).



Photo 27. View facing southeast at the former railroad corridor. Visible in the upper left hand corner of the photograph is Building 87 (February 1, 2016; Map 9).



Photo 28. View facing north at Building 89 Lube Oil Store (February 1, 2016; Map 13).



8795 Folsom Blvd., Suite 250
 Sacramento, California 95826
 (916) 388-5655

Site Photographs
 Hazardous Waste Memorandum
 San Francisco Bay at Point Molate
 Richmond, California

PLATE

10

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	



Photo 29. View facing south at the former railroad corridor in the eastern portion of IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13).



Photo 30. View facing east at surface raveling in the vicinity of OU1 Upland Cap Section TO-101 (June 18, 2014).



Photo 31. View facing south at the former railroad corridor in the northeastern portion of IR Site 4 (Drum Lot 1) (February 1, 2016; Map 13).



Photo 32. View facing east at the southern portion of Segment A (February 1, 2016; Map 1).



8795 Folsom Blvd., Suite 250
 Sacramento, California 95826
 (916) 388-5655

Site Photographs
 Hazardous Waste Memorandum
 San Francisco Bay at Point Molate
 Richmond, California

PLATE

11

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	



Photo 33. View facing southwest at the wetland located in the central portion of Segment A (February 1, 2016; Map 3).



Photo 34. View facing north of the former railroad corridor at Point Molate Beach Park (February 1, 2016; Map 8).



Photo 35. View facing south at the former railroad corridor in the southern portion of Segment B (February 1, 2016; Map 7).



Photo 36. View facing south in the southern portion of Segment B (February 1, 2016; Map 6).



8795 Folsom Blvd., Suite 250
 Sacramento, California 95826
 (916) 388-5655

Site Photographs
 Hazardous Waste Memorandum
 San Francisco Bay at Point Molate
 Richmond, California

PLATE

12

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	



Photo 37. View facing north at the former railroad corridor in the southern portion of Segment B (February 1, 2016; Map 7).



Photo 38. View of abandoned pipeline supports in the southern portion of Segment B (February 1, 2016; Map 7).



Photo 39. View facing north at the northern portion of Castro Point. The darker rocks in the central portion of the photograph may be ballast related to the former railroad corridor (February 1, 2016; Map 4).



Photo 40. View facing southwest at Castro Point (February 1, 2016; Map 4).

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
BAB	567.04.55		2/16	

ATTACHMENT A
MAPS 1 THROUGH 16





MAP 1

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⬜ Staging Areas 100 ft buffer
- ⋯ Chevron Easement
- ⬜ Wetlands_WGS_1984
- ⬜ Trail Buffer - 100 ft
- High Tide Line





Former Tank Pad

I-580

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MAP 2

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ⋯ Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





15 16
14 12
13 11 10
9 8
7
6
5
4
3
2 1

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MAP 3

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- - - Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China

Castro Point

Storm Water Retention Pond

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MAP 4

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- - - Chevron Easement
- - - Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





MAP 5

100
Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ▭ Trail Buffer - 100 ft
- ▭ Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





15 16
14 12
13 11 10
9 8 7
6
5 6
4 3 2 1

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MAP 6

100
Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ⋯ Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





15 16
14 12
13 11 10
9 8 7
6
5 6
4 3 2 1

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MAP 7

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- - - Chevron Easement
- - - Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





MAP 8

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ⋯ Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





15 16
14 12
13 11 10
9 8 7
6
5 6
4 3 2 1

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China

**Drum Lot 2/
Building 87**

Building 87

**Point Molate
Beach Park**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MAP 9

100
Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- Chevron Easement
- Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





MAP 10

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ▭ Trail Buffer - 100 ft
- ▭ Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





MAP 11

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ▭ Trail Buffer - 100 ft
- ▭ Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





MAP 12

100
 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ▭ Trail Buffer - 100 ft
- ▭ Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





MAP 13

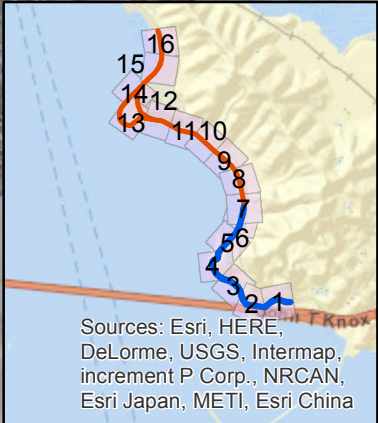
100
Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ⋯ Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MAP 14

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ⋯ Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





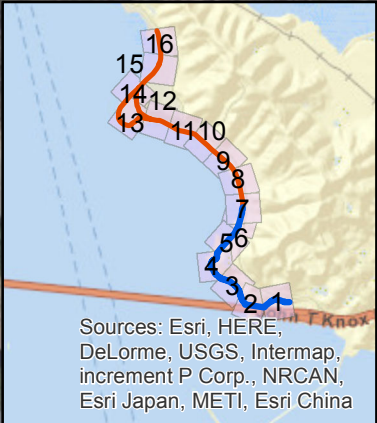
MAP 15

100
Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line





MAP 16

100 Feet

1 inch = 100 feet

- NCE_P
- ▲ Staging Areas
- Segment A - Park District
- Segment B - City
- ⋯ Chevron Easement
- ⊞ Trail Buffer - 100 ft
- Staging Areas 100 ft buffer
- Wetlands_WGS_1984
- High Tide Line

