

4.8 Hazards and Hazardous Materials

This section presents hazards and hazardous materials conditions in the Project vicinity and evaluates the potential for the construction or operation of the proposed Project to result in significant impacts related to exposing people or the environment to adverse hazards and hazardous materials conditions; and impairment of emergency response and access plans. Impacts related to water quality are analyzed in Section 4.9, *Hydrology and Water Quality*; impacts related to air quality are analyzed in Section 4.2, *Air Quality*; and impacts related to exposure of people or structures to wildland fires are addressed in Section 4.17, *Effects Found Not to Be Significant*.

This section relies in part on the site-specific technical reports listed below prepared in support of the Project, which were independently peer reviewed by ESA:

- ENGEO Inc., *Athletics Ballpark Development, Howard Terminal Site, Oakland, California, Phase I Environmental Site Assessment*, December 21, 2018b.
- ENGEO Inc., *Oakland Athletics Ballpark Development, Oakland, California, Considerations of Remediation and Mitigation Alternatives*, revised July 31, 2019b.
- ENGEO Inc., *Athletics Ballpark Development, Howard Terminal Site, Oakland, California, Site Investigation Report*, April 22, 2020a.

In addition, this section relies on other technical reports cited in the discussions below and listed in Section 4.8.6, *References*.

4.8.1 Environmental Setting

Site Investigation Areas

As summarized in the discussions further below, the Project site has a long history of industrial use that has resulted in the contamination of fill, soil, and groundwater. Various investigations, cleanup actions, and land use restrictions have been implemented to address the contamination. The California Department of Toxic Substances Control (DTSC) is the lead regulatory agency overseeing the investigations, proposed cleanup actions, and land use covenants (LUCs), and will continue in this role for the foreseeable future.

For the purposes of the Hazards and Hazardous Materials section of this Draft EIR, the Project site consists of the five areas listed below and delineated on **Figure 4.8-1**. The three principal areas (Howard Marine Terminal Gas Load Center, and Peaker Power Plant) that comprise the majority of the Project site are currently three separate active cleanup cases overseen by DTSC and have LUCs enforced by the DTSC that restrict land uses. Smaller areas not under LUCs include a parking lot and two road extensions into the Project site:

1. Howard Marine Terminal Site (DTSC Case No. 01440006)
2. Pacific Gas and Electric Company (PG&E) Oakland-1 MGP (DTSC Case No. 01490012), which encompasses both the Gas Load Center subarea that is part of the Project site and the Station C subarea that is across Embarcadero Street and not part of the Project site



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SOURCE: ENGEO, 2019b; Google Earth, 2019

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Figure 4.8-1
Onsite Investigation Areas



3. Peaker Power Plant (DTSC Case No. 01490020)
4. Embarcadero/Clay Street (“BevMo”) parking lot
5. Public rights-of-way associated with Jefferson Street and Martin Luther King Jr. Way

The largest portion of the Project site’s footprint is currently owned by the Port of Oakland (Port) and is known as the Charles P. Howard Terminal (Howard Terminal). The footprint also includes two additional parcels. The Gas Load Center parcel was historically owned by PG&E but was transferred to the Port on May 31, 2019. The Peaker Power Plant (also referred to as the Oakland Power Plant or the Vistra Site because its current owner is Vistra Energy Corporation) was previously owned and operated by PG&E. The BevMo parking lot is owned by the Port of Oakland and has been investigated as part of the proposed Project. The public right-of-ways are also on Port property and have been investigated as part of the proposed Project (Martin Luther King Jr. Way) or the Peaker Power Plant (Jefferson Street).

The discussions below summarize the land use history and key documents regarding each of the cleanup sites. The documents are publicly available on DTSC’s EnviroStor website (<https://www.envirostor.dtsc.ca.gov/public/>) by searching each respective cleanup identification name and/or number. The history and document list is followed by a summary description of the current nature and extent of contamination at the entire Project site.

Howard Terminal

Howard Terminal is approximately 50 acres and is located between Embarcadero and the Oakland-Alameda Estuary (Estuary). It includes two subareas whose names are used on some of the previous investigation and cleanup documents: (1) HT-East, which was the location of the PG&E Station B manufactured gas plant (MGP); and (2) HT-West, which included some MGP facilities, Station B West, as well as the Howard Company marine terminal operation.

Historically, PG&E operated the MGP from the early 1900s until approximately 1930, and it remained on standby for emergencies and peak demands thereafter until it was demolished in 1961. By 1982, all MGP related equipment and facilities were removed and the Port constructed the current container terminal. On the western portion of the site, the Howard Company operated a commercial transport and shipping terminal from the 1900s to the mid-1970s. The site was constructed to be a marine container terminal (Howard Terminal) by the Port in 1980 and rock fill was imported to create a rock dike, and sand dredged from the adjacent bay was hydraulically placed behind the rock dike. Existing uses and activities include, but are not limited to, truck parking, loaded and empty container storage and staging, longshoreperson training facilities, and berthing vessels for maintenance and storage.

The following are the key documents related to Howard Terminal (excluding documents prepared specifically for the development project, which are described and referenced in later in this section):

Key Document	Date	Summary
Underground Storage Tank (UST) Removal Report	06/17/1999	<ul style="list-style-type: none"> One 12,000-gallon diesel UST was removed, following its regulatory closure in November 1998.
Order	10/17/2000	<ul style="list-style-type: none"> DTSC issued an Imminent or Substantial Endangerment Determination and Order and Remedial Action Order to the Port.
Remedial Investigation Report	03/01/2001	<ul style="list-style-type: none"> Identified total extractable petroleum hydrocarbons (TEPH), polycyclic aromatic hydrocarbons (PAHs), cyanide, and benzene, toluene, ethylbenzene, and toluene (BTEX) in fill. Free product^a observed in southwest corner and trace amounts of PAHs in groundwater.
Remedial Action Workplan (RAW) includes Appendix C: Soil and Groundwater Risk Management Plan (RMP)	02/22/2002	<ul style="list-style-type: none"> Required geophysical survey, removal of any encountered USTs, and long-term groundwater monitoring and cap maintenance. Appendix C: RMP. The Operations & Maintenance (O&M) Agreement refers back to the RMP and is also the O&M Plan, as described in Methodology section further below.
Final Phase I Remedial Design and Implementation Plan (RDIP)	08/22/2002	<ul style="list-style-type: none"> Described procedure for Phase I – geophysical survey activities.
Land Use Covenant (LUC)	03/03/2003	<ul style="list-style-type: none"> Prohibits residential, hospitals, schools, day care, un-capped park or open space land uses. Prohibits any use that disturbs or interferes with existing cap. The capped soil cannot be disturbed without a RMP and Health and Safety Plan (HSP) approved by DTSC.
Phase I RDIP and Supplemental Workplan	03/25/2003	<ul style="list-style-type: none"> Supplemental report detailed results of geophysical survey and proposed exploratory excavations in three project areas.
Removal Action Completion Report	11/12/2003	<ul style="list-style-type: none"> Phase I, the geophysical survey and exploratory excavation, and Phase II, the fuel line abandonment removal action complete. DTSC will proceed with Site Certification.
O&M Agreement/Order	08/12/2004	<ul style="list-style-type: none"> DTSC signed O&M Agreement with the Port. The O&M Plan is also the RMP, which is outlined in Appendix C of the RAW.
Amended LUC	09/08/2004	<ul style="list-style-type: none"> Amends LUC to allow for breach of cap in event of an Emergency Event, such as fire, earthquake, explosion or equipment failure. Owner must immediately notify DTSC of the event and within seven days of the event, submit a report describing the event and measures taken in response. In a non-emergency event, the LUC continues to require 30 days prior written notice to DTSC and approval of a Risk Management Plan and Health Safety Plan prior to any breach of the cap.
Site Certification	11/04/2004	<ul style="list-style-type: none"> Certifies that RAW implementation is complete because: <ul style="list-style-type: none"> Old underground fuel pipelines filled with grout. Existing concrete asphalt pavement serves as protective cap over more than 200,000 cubic yards of untreated soil. Removed 10 cubic yards of soil disposed as non-hazardous waste. Requires long-term groundwater monitoring and cap maintenance in accordance with RMP that is part of RAW.
Annual Filings Begin	2006 to present	<ul style="list-style-type: none"> Annual O&M Reports and DTSC Cap Inspection reports continue documenting annual activities.

Key Document	Date	Summary
Five-Year Report	05/24/2007	<ul style="list-style-type: none"> Documented that the remedy in place remains protective of human health and the environment. Identified three issues: (1) concentrations of anthracene, phenanthrene, and cyanide were increasing in some wells; (2) free-phase product was observed in one groundwater monitoring in November 2006; and (3) review of the ecological risk assessment indicated that cyanide, TEPH-diesel and TEPH-motor oil still present in groundwater. The Port will continue to implement the O&M and monitor concentrations of contaminants in groundwater. Data indicated that the contaminants, with the exception of cyanide are stable and not adversely affecting ecological receptors. A fate and transport assessment indicated marine surface water quality criteria would not be exceeded, nor had cyanide been detected in downgradient wells.
Five-Year Report	12/10/2012	<ul style="list-style-type: none"> Documented that the remedy in place remains protective of human health and the environment. Minor revisions to monitoring program recommended, including reducing the schedule to a bi-annual basis for certain wells nearest to the waterfront. Besides those two wells, all other wells will be monitored once per 5-year period. Screening values for PAHs and cyanide were updated to levels protective of ecological receptors.
Five-Year Report	01/10/2018	<ul style="list-style-type: none"> Documented that the remedy in place remains protective of human health and the environment. Groundwater monitoring at the site is planned to occur annually for some wells and biannually for other wells.
Voluntary Cleanup Agreement (VCA)	01/08/2019	<ul style="list-style-type: none"> Between DTSC and Project sponsor to oversee investigation and cleanup activities related to planned redevelopment project.
O&M Agreement for Howard Terminal and Gas Load Center	05/06/2019	<ul style="list-style-type: none"> New O&M Agreement between DTSC and the Port effective upon transfer of fee title of Gas Load Center to the Port (i.e., on May 31, 2019; Gas Load Center is one of two subareas to the DTSC cleanup PG&E Oakland-1 MGP). Anticipates that this new O&M Agreement will terminate upon the Project sponsor entering into a superseding O&M Agreement with DTSC.
Human Health and Ecological Risk Assessment	08/2624/2020	<ul style="list-style-type: none"> Human Health and Ecological Risk Assessment that developed Target Cleanup Levels

NOTE:

- a Free product refers to petroleum fuel or oil that is in a separate phase floating on top of groundwater

PG&E Oakland-1 MGP – Gas Load Center

The Oakland-1 MGP site includes two subareas: the Gas Load Center located at 50 Market Street and Station C located across the street at 630 Embarcadero West. The two subareas have proceeded on separate DTSC timelines, through separate remedial documents, achieving site certification on different dates, and recording three separate LUCs. Because Station C is not part of the Project site, the table below only describes the key documents related to the Gas Load Center. This focus is also warranted because DTSC may soon incorporate the Gas Load Center into the Howard Marine Terminal Site because fee title transferred the Gas Load Center from PG&E to the Port on May 31, 2019.

From 1905 to 1958, PG&E historically operated the MGP on the Gas Load Center subarea, as well as on PG&E Substation C, and portions of Howard Terminal. The Gas Load Center is

approximately 1.58 acres and formerly included crude oil tanks, a generating building, gas holders, and purifying tanks. The MGP was dismantled in 1961. Until the early 1990s, the Gas Load Center was used as a gas distribution center, where gas was piped into the parcel in a high-pressure main and then distributed to smaller feeder mains via electronic controls. Between 1995 and 2003, the site was leased from PG&E for use as a maintenance area for vehicles, containers, cranes, and trailers. Subsequently, the site has been vacant. Based on the 2017 O&M and Groundwater Monitoring report, PG&E still maintains an active 24-inch-diameter high-pressure aboveground gas transmission pipeline that transects the northern portion of the site serving the greater Oakland metropolitan area. Otherwise, the site is vacant.

The following are the key documents related to the Gas Load Center (excluding documents prepared specifically for the development project, which are described and referenced later in this section):

Key document	Date	Summary
Voluntary Cleanup Agreement	12/18/1996	<ul style="list-style-type: none"> Between DTSC and PG&E relating to both the Gas Load Center and Station C
RAW	01/30/2008	<ul style="list-style-type: none"> Required site cap, O&M, and LUC for Gas Load Center
RAW Completion Report	04/20/2009	<ul style="list-style-type: none"> Described cap as pervious asphalt, concrete, or pea gravel, including new pavements over site
O&M Plan, includes Soil and Groundwater Management Plan (SGMP)	06/02/2009	<ul style="list-style-type: none"> Requires annual cap monitoring, maintenance, and groundwater monitoring, as well as five-year reviews Includes SGMP and Site Health & Safety Plan, as described in Methodology section further below
O&M Agreement/Order	07/27/2009	<ul style="list-style-type: none"> Originally between DTSC and PG&E; post-5/31/2019 transfer to Port, between DTSC and Port
LUC	09/09/2009	<ul style="list-style-type: none"> Prohibits residential, hospitals, schools, day care, park or open space land uses Requires any activities that will disturb soil be in accordance with approved SGMP
Site Certification	11/09/2009	<ul style="list-style-type: none"> Certified RAW implementation is complete because installed asphalt cap over approximately 15,300 cubic yards of untreated soil Requires long-term annual groundwater monitoring and cap maintenance in accordance O&M Plan
Annual Filings Begin	2009 to present	<ul style="list-style-type: none"> Annual O&M Reports, and DTSC Cap Inspection Reports
Five Year Review	08/04/2014	<ul style="list-style-type: none"> Documented that the remedy in place remains protective of human health and the environment Toxicity reference levels are valid and available information supports the protectiveness of the remedy The asphalt cap will continue to be maintained and groundwater monitoring will occur every 2 years
Five Year Review Workplan	09/07/2018	<ul style="list-style-type: none"> Workplan approved but final Five-Year Review not yet posted
O&M Agreement for Howard Terminal and Gas Load Center	05/06/2019	<ul style="list-style-type: none"> New O&M Agreement between DTSC and the Port effective upon transfer of fee title of Gas Load Center to the Port (i.e., on May 31, 2019; Gas Load Center is one of two subareas to the DTSC cleanup PG&E Oakland-1 MGP) Anticipates that this new O&M Agreement will terminate upon the Project sponsor entering into a superseding O&M Agreement with DTSC
Human Health and Ecological Risk Assessment	08/2624/2020	<ul style="list-style-type: none"> Human Health and Ecological Risk Assessment that developed Target Cleanup Levels

Peaker Power Plant

The Peaker Power Plant site is bounded to the south and east by Howard Terminal, to the west by Martin Luther King Jr. Way, and to the north by Embarcadero West Street, and identified as 601 Embarcadero West. PG&E owned the plant from 1910 until 1998, when they sold it to Duke Energy LLC. Successors have since been LS Power Equity, Dynegy, and now Vistra.

The Peaker Power Plant has operated as a power generation facility since 1888, and includes both a power plant parcel and a fuel farm parcel, on either side of Jefferson Street. Jefferson Street, located between both parcels, has existed since 1889 and is currently used for public parking and is not a through-going street. Numerous underground utilities exist under the street, including former cooling water intake and discharge ducts, several fuel pipelines, storm drains, sanitary sewers, and gas lines.

Historically, the Oakland Gaslight and Heating Company operated reciprocating steam-driven generators at the power plant parcel and Malthine Manufacturing Company occupied the fuel farm parcel, with petroleum products, paint, and distilling equipment associated with the operations. In 1908, generator facility was retrofitted with a 9,000-kilowatt vertical steam turbine fed by eight oil-fired boilers. Fuel for the boilers were provided from USTs and ASTs located on the fuel farm parcel. Based on the 1902 Sanborn map, a fuel oil AST about 50 feet in diameter was located in the southwest corner of the power plant parcel. An underground, 42-inch-diameter cooling water intake pipe and outfall were also constructed within and adjacent to the Jefferson Street right-of-way during the retrofit activities in 1908. An additional steam turbine was added three years later, and both vertical turbines were replaced with larger turbines in 1927. Based on the 1951 Sanborn map, five ASTs existed on the fuel farm parcel. Four of the five ASTs were identified as containing crude oil and the fifth AST was labeled water softener. The facility was deactivated in 1969, and the generators demolished in 1975.

In 1979, PG&E reactivated the power plant and constructed a 2.1-million-gallon AST on the fuel farm parcel to supply jet fuel to up to six on-site jet turbines, of which, three were installed and presently exist today. The fuel is supplied by the Santa Fe/Southern Pacific (now Kinder Morgan Energy Partners, L.P.) pipeline located along the northern site boundary on Embarcadero Street, entering the fuel farm parcel. The Peaker Power Plant is currently used to provide electricity at times of peak demand.

In 1998, in conjunction with PG&E's sale of the property to Duke Energy, a private LUC was recorded for the site (Conditions and Environmental Restrictions recorded in Alameda County and dated June 30, 1998). This covenant restricts the future development or use of the site for permanent or temporary lodging, hospital or other health-care facility, school, day care center for children, park, playground, or other recreational use. If any activities affecting soil or groundwater are performed, such activities must not result in the need for additional remediation, increase the cost of remediation, increase the risk of human exposure, or increase risk of a third-party claim.

The following are the key documents related to the Peaker Power Plant (excluding documents prepared specifically for the development project, which are described and referenced in later in this section):

Key Document	Date	Summary
Voluntary Cleanup Agreement	12/31/2003	<ul style="list-style-type: none"> Between DTSC and PG&E
Various investigation workplans submitted and approved	2005–2008	<ul style="list-style-type: none"> Workplans describe procedures for site investigations and cleanup.
Site Characterization Report	03/19/2009	<ul style="list-style-type: none"> Detailed soil gas sampling to supplement previously collected data for use in the Human Health Risk Assessment
Feasibility Study and Remedial Action Plan (FS/RAP)	06/16/2011	<ul style="list-style-type: none"> Included Human Health Risk Assessment Required cap, soil excavation beneath Jefferson Street and in the southeast corner of the power plant parcel, pipeline plugging/upgrade, groundwater monitoring, and land use restrictions
RDIP Pre-Construction Investigation Workplan	12/12/2012	<ul style="list-style-type: none"> Scope included potholing two pits for the purposes of inspecting a fuel pipeline and testing soil and groundwater, including hydraulic testing for groundwater recharge rates, soil density, and collection of soil samples for waste characterization Information used for shoring design during construction and waste disposition
RDIP	01/28/2013	<ul style="list-style-type: none"> RDIP implemented the RAP, addressing residual contamination at the site from former operations Included excavation of a portion of Jefferson Street where free-phase petroleum product is present Scope included shoring, excavation of approximately 1,700 cubic yards of oil-stained soil, transport of approximately 100 truckloads, and disposal at licensed landfill pumping of groundwater from excavation, treatment, and discharge or storage in tanks, and plan to decommission groundwater monitoring wells
RDIP Preliminary Investigation Completion Report	02/26/2013	<ul style="list-style-type: none"> Summarized field activities from December 2012
Well Decommissioning Report	06/25/2013	<ul style="list-style-type: none"> Decommissioned groundwater monitoring wells
Remedial Action Completion Report	12/16/2013	<ul style="list-style-type: none"> Excavated 2,500 tons of hydrocarbon-impacted soil, construction debris, and abandoned utility pipes at portion of Jefferson Street. Disposed off-site, based solely on a visual contamination standard Excavation did not include contaminated soil in southeast portion of power plant parcel as required by RAP because of physical obstacles Liquid wastes generated 94,000 gallons of water, transported off-site Other waste included 13.3 tons of concrete-encased asbestos containing material in piping and 440 gallons of petroleum liquid
O&M Plan, includes SGMP	03/24/2014	<ul style="list-style-type: none"> Described cap inspection and maintenance, groundwater monitoring, five year reviews, as required by RAP and as described in Section III below Notification required prior to breach of cap Described procedures for handling soil and groundwater in SGMP
Well Installation Completion Report	11/17/2014	<ul style="list-style-type: none"> Installed two new monitoring wells and replaced one old well located on Jefferson Street and power plant parcel

Key Document	Date	Summary
Annual O&M Reports and DTSC Cap Inspection Reports	Beginning in 2015 and continuing to date	<ul style="list-style-type: none"> • Reports on periodic monitoring activities, maintenance of remedial systems, and maintenance of caps sealing underlying contamination.
DTSC-Required LUC	03/30/2015	<ul style="list-style-type: none"> • Restricted area is 2.4 acres, divided in two parcels by Jefferson Street • Prohibits residential, hospitals, schools, day care, park or open space land use • Prohibits soil disturbance at or below grade without approved Soil Management Plan • Prohibits drilling for drinking water, oil, or gas without DTSC approval • Prohibits groundwater extraction except as approved by the Groundwater Management Plan • Cannot disturb cap without prior written approval
O&M Agreement/Order	04/11/2016	<ul style="list-style-type: none"> • Maintain cap across the site • Annual groundwater monitoring, as detailed in O&M Plan
Site Certification	06/20/2017	<ul style="list-style-type: none"> • Certifies RAP implementation is complete because cap comprised of buildings, concrete, and asphalt as maintained by the O&M plan and excavations as described above completed
Five Year Report Workplan	09/17/2018	<ul style="list-style-type: none"> • Due 2019. Describes approach to conducting five year reviews and outlines the report format.
Human Health and Ecological Risk Assessment	08/26/2020	<ul style="list-style-type: none"> • Human Health and Ecological Risk Assessment that developed Target Cleanup Levels

Current Nature and Extent of Onsite Contamination

As summarized above, numerous investigations and cleanup actions have occurred over the years. To characterize the current nature and extent of onsite contamination in soil gas, soil, and groundwater, ENGEO conducted a site investigation in 2019 that sampled soil gas, soil, and groundwater throughout the entire Project site for chemicals of concern (COCs) identified in the previous investigations. The results of that investigation are discussed in a report (the Site Investigation Report) finalized and approved by DTSC in April 2020 (ENGEO, 2020a). The Site Investigation Report compared the detected chemical concentrations to regulatory commercial and residential screening levels used by DTSC to assess whether further investigation or cleanup is needed to support the proposed Project. The Site Investigation Report also considered previous groundwater sampling results from monitoring wells at the Peaker Power Plant (ETIC, 2019a). The results are summarized below.

Chemicals of Concern

The Site Investigation Report identifies the COCs, which are those chemicals present at concentrations above human health or environmental regulatory standards (ENGEO, 2020a). The COCs identified in fill and soil include the following:

- Total petroleum hydrocarbons (TPH) as gasoline, diesel, and motor oil
- Heavy metals (e.g., lead)
- Organochlorine pesticides (e.g., dieldrin)

- Polychlorinated biphenyls (PCBs)
- Semi-volatile organic compounds (SVOCs), including PAHs
- Cyanide

COCs identified in groundwater include the following:

- TPH as gasoline and diesel
- Heavy metals (e.g., lead and select California Administrative Manual [CAM 17] metals)
- Volatile organic compounds (VOCs)
- Cyanide

Preliminary Screening Levels

The Site Investigation Report compared the chemical concentrations found on site to a range of preliminary screening levels as agreed by DTSC. These preliminary levels were used as a baseline during the various investigations. As described further below, a human health and ecological risk assessment has been prepared in compliance with established U.S. Environmental Protection Agency (USEPA) US EPA and DTSC guidelines and approved by DTSC (ENGE0, 2020b). The risk assessment comprehensively assessed the potential exposure scenarios and determined site-specific parameters that were used to develop site-specific target cleanup levels with DTSC oversight and approval.

In hierarchical order, the Site Investigation Report first compared chemical concentrations to DTSC Modified Screening Levels (DTSC-SLs) published in April 2019. For those chemicals for which a DTSC-SL has not been developed, the results were compared to May 2019 U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs). Additionally, TPH constituents (e.g., TPH-gasoline) were compared to San Francisco Bay Area Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs). Screening levels are guidelines used to evaluate the potential risk associated with chemicals found in soil or groundwater where a release of hazardous materials has occurred. Screening levels have been established for both residential and commercial/industrial land uses, and for construction workers.

Residential screening levels are generally the most restrictive; soil with chemical concentrations below these levels generally would not require remediation and would be suitable for unrestricted uses. Commercial/industrial screening levels are generally less restrictive than residential screening levels because they are based on potential worker exposure to hazardous materials in the soil (and these are generally less than residential exposures). Screening levels for construction workers are also less restrictive than for commercial/industrial workers because construction workers are only exposed to COCs during construction, while industrial workers are assumed to be exposed over a working lifetime. Chemical concentrations below these screening levels generally would not require remediation.

For groundwater, the Site Investigation Report also compared the analytical results to saltwater ecotoxicity ESLs.¹ Groundwater beneath the Project site is in contact with waters of the Estuary,

¹ Ecotoxicity ESLs are based on risk to ecological receptors.

which could expose aquatic receptors to chemicals in groundwater; however, DTSC has provided oversight for decades and will continue to provide oversight. Further, a 2007 fate and transport assessment indicated marine surface water quality criteria would not be exceeded (Baseline, 2007).

Areas above Screening Levels

The Site Investigation Report presented maps that illustrate the extent of certain individual COCs with chemical concentrations above screening levels for soil gas, soil, and groundwater. As discussed below, the maps were combined to show the combined areal extent for each media where COC concentrations exceeded screening levels. The Site Investigation Report stated that the extents were consistent with previous investigation results. The risk assessment that has been approved by DTSC assesses areas above preliminary screening levels and proposes site-specific target cleanup levels for approval by DTSC.

Soil Gas

The onsite areas with pervasive COCs in soil gas at concentrations above screening levels are shown on **Figure 4.8-2**, which combines the results for TPH as gasoline, benzene, and naphthalene. As shown, most of the Project site has soil gas with COCs at concentrations that exceed commercial screening levels, which would also exceed the lower residential screening levels. Additional areas of the Project site have soil gas with COC concentrations that exceed residential screening levels but not commercial screening levels. The combined result is that almost all of the Project site has soil gas that exceeds one or more screening level.

Soil

The onsite areas with COCs in soil at concentrations above screening levels are shown on **Figure 4.8-3**, which combines the results for TPH as gasoline, diesel, and motor oil; arsenic; lead; naphthalene, and benzo(a)pyrene (BAP) equivalent (a calculated combination of several PAHs). As shown, much of the Project site has soil with COCs at concentrations that exceed commercial screening levels, which would also exceed the lower residential screening levels. Additional areas of the Project site have soil with COC concentrations that exceed commercial screening levels. The combined result is that most of the Project site has soil that exceeds one or more screening levels.

Groundwater

For the Site Investigation Report, grab groundwater samples were collected at nine boring locations. In addition, four new groundwater monitoring wells were constructed on the harbor side of the quay and bulkhead walls. The onsite areas with COCs in groundwater at concentrations above ecological screening levels are shown on **Figure 4.8-4**, which combines TPH as gasoline and diesel (with silica gel cleanup),² and cyanide. As shown, some of the Project site has groundwater with COCs at concentrations that exceed ecological screening levels. In addition, certain onsite areas have free product floating in groundwater, as discussed below.

² Silica gel cleanup is an analytical method that removes polar hydrocarbons from samples being analyzed for petroleum hydrocarbons.



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SOURCE: ENGEO, 2019b; ESA, 2019; Google Earth, 2019

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Figure 4.8-2
Onsite Areas with Screening Level Exceedances - Soil Gas





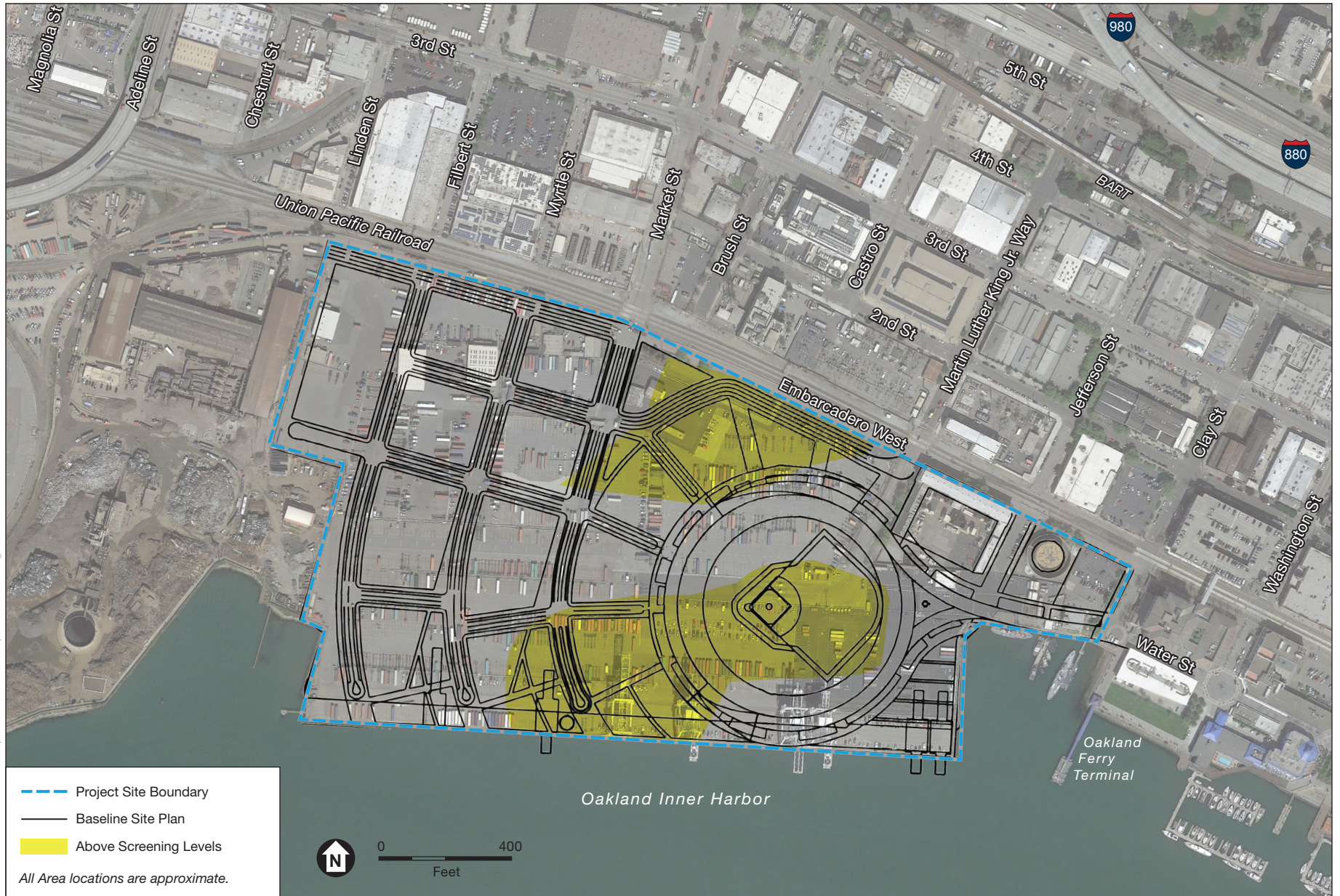
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SOURCE: ENGEO, 2019b; ESA, 2019; Google Earth, 2019

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Figure 4.8-3
Onsite Areas with Screening Level Exceedances - Soil





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SOURCE: ENGEO, 2019b; ESA, 2019; Google Earth, 2019

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Figure 4.8-4
Onsite Areas with Screening Level Exceedances - Groundwater

With the addition of the four new wells discussed above, the Project site now has an existing groundwater monitoring well network consisting of seventeen well locations, as shown on **Figure 4.8-5**. The historical depth to groundwater has ranged from about 5 to 12 feet below grade and is subject to tidal fluctuation of several feet daily (ENGE0, 2018a). Groundwater flow is diverted by the concrete quay wall toward the wood bulkhead, resulting in a general flow direction southwest toward the wells on the harbor side of the wood bulkhead (see Figure 4.8-5) (Baseline, 2019). Consequently, these wells are referred to as the compliance wells because they monitor groundwater migrating from the Project site to the Estuary. The most recent biennial³ groundwater monitoring event was conducted on October 17, 2018, and included the eight wells existing at that time (Baseline, 2019). The results are summarized as follows:

- Free-phase petroleum hydrocarbon product was encountered in two monitoring wells and one boring. The product thickness or water level in each well could not be measured accurately due to the viscous nature of the product in both wells. The wells are identified on Figure 4.8-5 in red and are both on the landward side of the quay wall. The aged, viscous petroleum hydrocarbon has limited, if any, solubility in water, and therefore, is not mobile, as evidenced by the quality of groundwater in the two downgradient monitoring wells. Notably, the 2019 site investigation only encountered free-phase product near the north-central monitoring well.
- Total extractable petroleum hydrocarbons (TEPH), PAHs, and cyanide were not detected in the three compliance wells located at the downgradient portion of the Project site, indicating that contaminated groundwater is not leaving the Project site and entering the harbor at actionable concentrations.

Human Health and Ecological Risk Assessment

In support of the Project, a Human Health and Ecological Risk Assessment (Risk Assessment), has been prepared using the historical and recent sample results for the Howard Terminal, the PG&E Gas Load Center, the Peaker Power Plant, the BevMo parking lot, and public right-of-ways associated with Jefferson Street and Martin Luther King Jr. Way. (ENGE0, 2020). The Risk Assessment provides a site-specific screening level risk assessment that identifies and evaluates potentially significant exposure scenarios. The Risk Assessment considers hypothetical future receptors, including onsite indoor commercial workers; onsite residents (adult and child); onsite construction workers; onsite utility workers; park visitors; offsite residents (adult and child); offsite commercial workers; and ecological receptors in the Bay. An exposure assessment was conducted to estimate the highest exposure that can be reasonably anticipated to occur that for each hypothetical receptor would receive to contamination in each media where there is a complete or potentially complete exposure pathway. In addition, a toxicity assessment and risk characterization were performed, and the results of all these were combined to develop target cleanup levels for the Site.

³ Every other year.



SOURCE: ESRI, 2019; GeoTracker, 2019; Amec, 2015; Baseline, 2018; Terraphase, 2018; Engeo, 2019b; ETIC 2018

Oakland Waterfront Ballpark District Project

Figure 4.8-5
Onsite Wells and Offsite Hazardous Materials Sites

The results of the Risk Assessment developed Target Cleanup Levels to be incorporated into the RAW. In soil, Target Cleanup Levels were developed for the metals arsenic, cobalt and lead; TPH as gasoline, diesel, and motor oil; the PCBs Aroclor 1254 and 1260; the pesticide dieldrin; and various SVOCs including PAHs. In soil gas, Target Cleanup Levels were developed for TPH as gasoline, and various VOCs. The Risk Assessment also concluded that observed levels of COCs at Howard Terminal do not pose a significant risk to the environment, including aquatic organisms at the groundwater-Inner Harbor interface. Therefore, there are no Target Cleanup Levels for groundwater. The DTSC reviewed and approved of the Risk Assessment (DTSC, 2020).

Nearby Hazardous Materials Sites

The area in the vicinity of the Project site also has a long history of industrial use. Adjacent or nearby industrial sites known to have spills, leaks, or releases may have contamination footprints that overlap the Project site. Active hazardous materials sites located adjacent to or within 1,000 feet of the Project site are described below. Sites that have been cleaned up to the satisfaction of the overseeing regulatory agency are not considered, since those closed sites would not be considered to pose an environmental risk surrounding properties, including the Project site.

Schnitzer Steel – Cleanup Status: Open – Verification Monitoring

The Schnitzer Steel site is adjacent and west of the Project site at 1101 Embarcadero West in Oakland, California (Terraphase, 2019a, b, c). Schnitzer Steel operates a scrap-metal recycling facility, occupying approximately 26.5 acres of flat-lying land. Schnitzer Steel operations include the shredding of automobiles, appliances, and other recyclable light steel materials; shearing and torch-cutting of heavy recyclable steel products; preparation and sorting of ferrous and non-ferrous metal recycling feedstock; temporary storage of finished recycled metal products and shredder residue; and maintenance of facility equipment. Approximately one-third of the Schnitzer Steel site is either covered by buildings or pavement. The rest of the ground surface is unpaved dirt.

Schnitzer’s consultant prepared a summary of all soil sampling results through 2019 (Terraphase, 2019b). Some soil excavation was conducted in 1984 but there have been no formal remedial actions to date. The historical soil results were compared to commercial/industrial shallow soil ESLs, construction worker soil ESLs, soil leaching to groundwater ESLs for non-drinking water, and odor nuisance ESLs for commercial/industrial shallow soil. The soil evaluation is summarized below.

- TPH has been detected in the diesel and motor oil range with various exceedances of ESLs. The detected TPH is mostly in heavier oil range. Some of these exceedances are from samples collected along the border with the Project site. However, the soil evaluation noted that the majority of higher concentrations above ESLs are within the 3- to 9-foot depth interval and not at the surface.
- Lead, arsenic, and nickel have been detected at concentrations above ESLs, along with occasional ESL exceedances for cadmium and chromium. Similar to TPH, the ESL exceedances in soil typical occur in the 3- to 9-foot depth interval.

- PCBs has been detected in soil and at concentrations above ESLs. Some of these exceedances are from surface or shallow (less than 5 feet) samples collected along the border with the Project site.
- VOCs have not been detected above ESLs.
- SVOCs are mostly below ESLs. Some PAHs have been detected above ESLs in the 5- to 8-foot depth interval, which correlates with the TPH detections.
- Dioxins and furans were tested for in five samples collected in limited area with burnt soil located along the border with the project site. Dioxins and furans are commonly screened against total toxicity equivalence (TEQ) concentrations above ESL, which combines all dioxins and furans and considers several risk levels. Most dioxins and furans were not detected in most of the soil or groundwater samples. A select few were detected at very low concentrations. One sample contained dioxins and furans above one ESL (referred to as TEQ-ND=0). Three soil and two groundwater samples exceeded a more conservative ESL (referred to as TEQ-ND=0.5), which is heavily weighted by non-detects (the detection limit is used as the sample concentration for result below the detection limit; the actual sample concentration would be lower, if detected at all).

The soil evaluation concluded that the COCs for the Schnitzer site include TPH, PCBs, and metals (specifically lead and nickel). The soil data indicated a generally heterogeneous distribution of COCs in soil. The soil evaluation also concluded that given the shallow depths to groundwater, it is reasonable to assume that TPH and metals (specifically nickel) detected in groundwater are from the fill materials beneath the Schnitzer facility. Groundwater results are discussed as follows.

Groundwater at the Schnitzer Facility has been sampled since 1991 (Terraphase, 2019c). Groundwater samples have been tested for TPH as diesel and motor oil (with and without silica-gel cleanup), metals, and PCBs. Concentrations of TPH as diesel have been below the saltwater ecotoxicity ESL, except for one sample collected in 2017. TPH as motor oil is usually not detected or is detected at concentrations below ESLs. Minor exceedances of the nickel saltwater ecotoxicity ESL have been observed in three shoreline wells. Minor exceedances of the saltwater ecotoxicity ESLs for arsenic, copper, lead, and zinc were measured in one shoreline well. Petroleum-hydrocarbon oxidation products (HOPs; often referred to as “polar compounds”) have been detected in several wells at concentrations that exceed the saltwater ecotoxicity ESL. The highest concentrations of HOPs are found in wells in the southeastern portion of the Schnitzer facility, including in wells along the southeastern shoreline along the Oakland Harbor and adjacent to the Project site. Schnitzer is currently awaiting approval from the RWQCB to implement a work plan to evaluate whether groundwater discharging to the Bay from the Schnitzer Facility poses an ecological risk.

Leaching of COCs from soil to groundwater due to surface infiltration may be occurring in unpaved areas of the Schnitzer Facility (Terraphase, 2019b). Historically, a larger portion of the Schnitzer Facility was unpaved, and the potential for leaching to groundwater was greater. Schnitzer is in progress of capping the entire facility with 12 inches of reinforced concrete to effectively eliminate potential leaching of COCs from soil to groundwater.

PG&E Compressed Natural Gas Station

PG&E operates a compressed natural gas station referred to as the Compressed Natural Gas (CNG) Station at 205 Brush Street, about 500 feet north of the Project site (see PG&E CNG Station on Figure 4.8-5). At least three gasoline 10,000-gallon USTs and two diesel 1,000-gallon USTs formerly occupied the PG&E CNG property (SWRCB, 2015). The USTs and contaminated soil were removed in 2003. Remediation consisting of in-situ chemical oxidation was conducted in 2017. A 2018 monitoring report indicated that the direction of groundwater flow from this site is to the southwest, toward the Project site (ERM, 2018). Some of the groundwater samples detected chemical concentrations that exceeded ESLs for TPH as gasoline and diesel; the fuel components of BTEX and MTBE; naphthalene; and 1,2-dichloroethane. Most of the ESL exceedances occurred in a well at the center of the PG&E CNG property. The two wells at the downgradient border of the PG&E CNG property had only one ESL exceedance each and at much lower concentrations relative to the center of the PG&E CNG property, indicating that the plume at the PG&E CNG property attenuates with distance. The monitoring report does not state how far off (southwest) of the PG&E CNG property the plume extends. However, the Port CNG station, discussed below, is located immediately south and adjacent to the PG&E CNG site and also monitors groundwater. As discussed below, regulatory records indicate the Port CNG Station site case is pending closure with the Alameda County Department of Environmental Health. This indicates that contamination in groundwater at both CNG sites does not extend to the proposed Project site.

Port of Oakland / Downtown Oakland Compressed Natural Gas Station

Clean Energy operates a compressed natural gas station commonly referred to as the Port of Oakland/Downtown Oakland CNG Station on land owned by the Port, located at 209 Brush Street, about 300 feet north of the Project site. Previously, the Port CNG site was an ice and cold storage facility, whose activities resulted in soil and groundwater contamination with petroleum hydrocarbons in the oil, diesel, and gasoline range, and PAHs associated with the petroleum hydrocarbons (Weiss, 2015). About 200 cubic yards of contaminated soil was excavated and removed from the site in 2007. Subsequent soil sampling results indicated some residual petroleum hydrocarbons with a few detections above ESLs. The groundwater monitoring results also indicated residual petroleum hydrocarbons in the diesel and motor oil range with some concentrations above ESLs. Diesel and motor oil are less mobile compared to gasoline or VOCs. Weiss concluded that the plume is largely limited to the site and recommended that the Port request case closure from the regulatory agency under the State's low-threat closure policy, which allows case closure for sites that have residual levels of contamination that do not pose a threat to other properties. The Alameda County Department of Environmental Health is in the process of reviewing the case closure request (ACDEH, 2016).

PG&E Oakland-1 MGP

The PG&E Oakland-1 MGP site is located at 50 Market Street, 101 Jefferson Street, and 630 Embarcadero, north and across the Embarcadero from the Project site and included the former MGP (the gas load center; discussed in *Gas Load Center* section above) and the Station C Electric Generating Substation (SWRCB, 2018; ETIC, 2019b). This MGP operated between 1905 and 1930, and remained on standby for emergencies and peak demands thereafter, until it was dismantled in 1961. Currently, PG&E operates Substation C, an electrical transmission and

distribution switching center and substation. In addition, PG&E maintains an active 24-inch-diameter, high-pressure, aboveground gas transmission pipeline that transects the northern portion of the Oakland-1 MGP Site, which serves the greater Oakland metropolitan area.

The contamination history at the Oakland-1 MGP site is similar to the Project site in that some of the same operations were conducted, resulting in similar spills and contaminated materials. COCs at the Oakland-1 MGP site include petroleum hydrocarbons, PAHs, metals, and cyanide. The DTSC-approved remedial action for the Oakland-1 MGP Site includes a site cap, groundwater monitoring, and a LUC. Groundwater monitoring results indicate decreasing trends in the concentrations of TPH as gasoline and diesel, BTEX, PAHs, and cyanide, with the higher COC concentrations limited to the southeast corner of the Oakland-1 MGP site. The direction of groundwater flow at this site has been consistently to the north, away from the Project site. The results indicate that the residual contamination in groundwater at the PG&E Oakland-1 MGP site is not migrating to the Project site.

Port of Oakland/Cinema Project

The Port of Oakland Cinema project is located at Clay & Embarcadero (Terraphase, 2016). From 1866 to 1904, a coal gasification plant was operated on this site. Between 1905 and 1928, the plant was operated by PG&E as a gas-control center, compressor station, and regulating station for the East Bay gas system. In 1929, structures associated with the MGP were replaced with a concrete warehouse and used as a storage and maintenance facility until 1963. In 1963, the Port purchased this site for use as a maintenance yard until 1971. In 1971, the entire site was converted and operated as a parking lot. In 1995, this site was redeveloped as the current cinema complex.

The investigations indicated that the shallow soils and groundwater at the Cinema site contain PAHs, VOCs, petroleum hydrocarbons, and elevated concentrations of metals. The remedial action consisted of excavating and removing about 1,700 cubic yards of the more highly contaminated soil, pumping and removing about 1,200 gallons of contaminated groundwater, installation of a vapor barrier, construction of a concrete cap across the entire site to eliminate direct contact exposure of contaminants to site users, and establishing a Covenant of Deed Restriction. Groundwater monitoring was conducted from 1995 until 2001 with decreasing trends of all COCs. DTSC approved of abandoning all wells by pressure grouting with cement. As of the last monitoring event, naphthalene, PAHs, TPH, and BTEX were detected in groundwater beneath the Cinema site. This site is cross-gradient of the proposed Project site, and therefore would not affect the Project site.

Jack London Square Parcel D

Jack London Square Parcel D site is located at 466 Water Street.⁴ Parcel D is the parking lot at the northeast corner of Embarcadero and Broadway. At various times from 1889 until 1993, the site previously included a planning mill, small blacksmith shop, a lumber yard, a small store and a larger structure used for lime and building materials and hay storage, a warehouse, a TV repair shop, and a restaurant (Bureau Veritas, 2015). Since 1993, the Parcel D site has been in use as an

⁴ The RWQCB lists the address as 530 Water Street, which is the address of the Port of Oakland but not the hazardous materials location.

asphalt-paved parking lot; however, the current owner has plans to build residential development on the site. Fill of unknown origin is located beneath the site.

Soil and groundwater investigations have indicated COCs in soil and/or groundwater including petroleum hydrocarbons, PAHs (anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and phenanthrene), and metals (arsenic, lead, mercury, and thallium). Contact with site contaminants is prevented by hardscape that covers most of the site and a minimum of 2 feet of clean fill in landscape areas, all managed under a soil management plan approved by and under the regulatory jurisdiction of the RWQCB. The direction of groundwater flow is to the southeast and not toward the proposed Project site.

Port of Oakland Site A (Ferry Terminal)

The Port of Oakland Site A site is located at 10 Clay Street, within 100 feet of the harbor.⁵ Site A was a lumber storage yard supported on piles in 1889, and vacant and filled as of 1910 (Baseline, 1999). A warehouse occupied the property as of 1950, and a television station and parking lot as of 1958. The television station was removed in 1988 and replaced by a lawn. The current building was constructed after 2005 and before 2009. Fill of unknown origin is located beneath the site. The fill consists of 7 to 13 feet of silty to clayey sands and gravel with clay and sand; underlain by 1 to 4½ feet of Bay Mud; and then by sands of the San Antonio Formation. A 1985 geotechnical investigation observed oil and grease in soil samples from the Bay Mud.

The last groundwater sampling event was conducted in October 1999. The groundwater samples detected PAHs (anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene) at total PAH concentrations up to 4.71 micrograms per liter. The total petroleum hydrocarbons detected in the diesel range were concluded to be individual detections of the previously listed PAHs.

The last soil sampling event was conducted in June 1998 for two trenches excavated in preparation for development of the site (Port of Oakland, 2000). The samples detected TPH (gasoline range up to 53 mg/kg and diesel range up to 2,500 mg/kg), PAHs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, fluoranthene, fluorine, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene; total PAHs up to 96 mg/kg) and metals (chromium, nickel, lead, and zinc). Oil-range hydrocarbons were determined to be present in the heavier diesel range.

The RWQCB granted case closure in 2000 (RWQCB, 2000). Although residual chemicals are present in soil, the RWQCB concluded that because PAHs are not highly mobile, the chemical concentrations in groundwater are relatively low, and the future use of the site was to be open space, public recreation, and commercial, the site did not pose a threat to the public or the environment. Contact with residual site contaminants is prevented by the hardscape of the existing building that covers Site A. The case closure also implies the RWQCB has concluded this site is not a threat to adjacent or nearby sites, including the Project site.

⁵ The RWQCB lists the address as 530 Water Street, which is the address of the Port of Oakland but not the hazardous materials location.

Merritt Two Site

The Merritt Two site is located at 655 3rd Street, about 400 feet north of the Project site (Nova, 2014). Between 1889 and the late 1990s, the Merritt Two site has had various uses relative to hazardous materials, including an asbestos factory and one UST. In the late 1990s, the original structures were demolished and the site redeveloped with the current self-storage facility constructed in 1997. The UST was reportedly removed from the site in 1968, which prompted subsequent soil investigations (Tetra Tech, 2015). Lead and PAHs were detected at concentrations above residential ESLs and RSLs in soil. Asbestos was not detected in samples collected from the location of the former asbestos factory. The property is entirely covered with hardscape and a LUC has been placed on the property to prevent disturbing the cap without the approval of the DTSC. The direction of groundwater flow beneath the Merritt Two site is southwest and toward the Project site. However, the human health screening evaluation concluded that the concentrations of residual chemicals in soil, groundwater, and soil vapor at the Merritt Two site would not present a significant risk to future residential receptors. This also means that this site would not present a risk to downgradient properties, such as the Project site.

Terradev Jefferson LLC Property

The Terradev Jefferson LLC Property is located at 645 4th Street, about 750 feet north of the Project site (Apex, 2019). Soil and groundwater at this property have been impacted from a previous single-walled steel 1,000-gallon UST, removed in 2006. Soil and groundwater have been contaminated with TPH as gasoline and diesel, BTEX, MTBE, TBA, and 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB) and naphthalene. Similar to the LUCs described above for other sites, the Terradev site has a Site Management Plan enforced by the Alameda County Department of Environmental Health that prohibits disturbing the vapor barrier at the site without their approval. Soil samples collected from three soil borings at the downgradient border of the block had low levels of TPH as diesel below RSLs and ESLs, and no detectable amounts of TPH as gasoline, BTEX, MTBE, TBA, and 1,2-DCA, EDB, and naphthalene. Grab groundwater samples collected from the same borings had a few detections of low levels of TPH as gasoline, BTEX, MTBE, EDB, and naphthalene. At the three most downgradient borings, grab groundwater samples detected none of the above-listed compounds in two borings, and much reduced concentrations of TPH as gasoline, MTBE, and EDB (another fuel additive) in the third boring, although the concentrations of TPH as gasoline and MTBE still exceed their respective ESLs. Given the distance from the Project site and the low to non-detectable chemical concentrations along the downgradient side of this Terradev site, it is unlikely that the Terradev site would be able to affect the Project site.

E-D Coat Inc.

The former E-D Coat Inc. facility was located at 715 4th Street, about 700 feet north of the Project site (DTSC, 2018). The E-D facility was an electroplating facility providing zinc, cadmium, and chromium plating services from 1966 until approximately 2012. The facility was closed in 2017. The liquid contents of three tanks were emptied and disposed at an offsite facility permitted to accept the waste. As of 2018, the property and all equipment were sold; no equipment remains at the facility. The facility is scheduled for further investigation to evaluate whether soil and groundwater have been contaminated. The available documents on the DTSC EnviroStor website do not indicate

whether the groundwater beneath the former E-D facility is contaminated. The nature of some chemicals used at the site are known (zinc, cadmium, chromium) and it is assumed that cleaning solvents were also used (e.g., trichloroethene [TCE]). The extent of the release, including migration in groundwater, if any, is unknown. However, the listed metals are not highly mobile in groundwater and unlikely to have migrated to the Project site. In addition, if solvents such as TCE has been used and had migrated in groundwater, the solvents would have been previously detected at the Project site or at the intervening sites (PG&E CNG Station, Port of Oakland CNG Station, and/or Merritt Two). Given that solvents associated with plating shops (e.g., TCE) have not been detected in groundwater at the Project site, this indicates that contamination from the E-D Coat site has not migrated to the Project site.

East Bay Ford Truck Sales

East Bay Ford Truck Sales is located at 333 Filbert Street, about 700 feet north of the Project site (SCS, 2017). Several soil and groundwater investigations have been conducted at this site and revealed soil contamination with TPH as diesel and motor oil, 2-methylnaphthalene, and arsenic above ESLs. The arsenic detections were within what are considered to be background arsenic concentrations for the San Francisco Bay area. The analyzed grab groundwater samples detected TPH as gasoline, diesel, and motor oil, PCE, TCE, DCE, and naphthalene in excess of ESLs.

Groundwater remediation consisting of in-situ treatment by anaerobic bioremediation was conducted in 2014. The post-treatment sampling results indicated only cis-1,2-DCE and benzene in two wells at concentrations slightly above ESLs. In addition, one grab groundwater sample collected from the southern and hydraulically downgradient portion of the site detected TPH as diesel and motor oil in excess of their respective ESLs. The investigation concluded that groundwater contamination from this site does not extend far offsite, and no further investigation is recommended.

Proximity to Existing Sensitive Receptors

There are no schools within 0.25 miles of the Project site; the nearest school is Lincoln Elementary, about 0.74 miles from the Project site. There are no hospitals located within a mile of the Project site; the nearest hospital is the Providence Hospital about 2 miles to the northeast.

There are several residential uses within 1,000 feet of the Project site, as listed below:

- One live-work loft building immediately across Embarcadero West from the site at 737 2nd Street between Brush Street and the PG&E electrical substation
- Three residences on the northeast corner of 4th Street and Brush Street
- Four residences at the north corner of Martin Luther King Jr. Way and 4th Street
- One residential high-rise with 144 units at 222 Broadway at the east corner of Broadway and 2nd Street

As of March 2019, there were also 14 liveaboards (boats used as residences) in the Jack London Square marina, an estimated 600 to 800 feet from the eastern boundary of the Project site (see Section 4.10, *Land Use, Plans, and Policies*).

4.8.2 Regulatory Setting

Federal

The primary federal agencies with responsibility for hazardous materials management include the USEPA, U.S. Department of Labor Occupational Safety and Health Administration (Fed/OSHA), and the U.S. Department of Transportation (USDOT). Federal laws, regulations, and responsible agencies are summarized in **Table 4.8-1**.

**TABLE 4.8-1
 FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT**

Classification	Law or Responsible Federal Agency	Description
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act [SARA])	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, the USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from “cradle to grave.”
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the “cradle to grave” system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
Hazardous Materials Transportation	USDOT	USDOT has the regulatory responsibility for the safe transportation of hazardous materials. The USDOT regulations govern all means of transportation except packages shipped by mail (49 CFR).
	U.S. Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	Fed/OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR 1910).
Structural and Building Components (Lead-based paint, polychlorinated biphenyls, and asbestos)	Toxic Substances Control Act	Regulates the use and management of polychlorinated biphenyls in electrical equipment, and sets forth detailed safeguards to be followed during the disposal of such items.
	USEPA	The USEPA monitors and regulates hazardous materials used in structural and building components and their effects on human health.

State and local agencies often have either parallel or more stringent rules than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the State or local agency section.

State

The primary State agencies with responsibility for hazardous materials management in the region include the DTSC and the RWQCB within the California Environmental Protection Agency

(Cal EPA), California Occupational Safety and Health Administration (Cal/OSHA), California Department of Health Services, California Highway Patrol (CHP), and the California Department of Transportation (Caltrans). State laws, regulations, and responsible agencies are summarized in **Table 4.8-2**.

**TABLE 4.8-2
 STATE LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT**

Classification	Law or Responsible State Agency	Description
Hazardous Materials Management	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program); CUPA (Health and Safety Code Sections 25404 et seq.)	In January 1996, Cal EPA adopted regulations, which implemented a Unified Program at the local level. The agency responsible for implementation of the Unified Program is called the CUPA, which for the City of Oakland, is the Alameda County Department of Health Services (ACDEH), discussed further below.
	State Hazardous Waste and Substances List (Cortese List); DTSC, RWQCB, Alameda County Environmental Health Department.	Three of the five subparcels that comprise the Project site are on the "Cortese List" compiled pursuant to Government Code Section 65962.5 and referenced in Public Resources Code Section 21092.6. The oversight of hazardous materials sites often involves several different agencies that may have overlapping authority and jurisdiction. DTSC is the lead agency.
Hazardous Waste Handling	California Hazardous Materials Release Response Plan and Inventory Law of 1985; CUPA	The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act) requires that businesses that store hazardous materials onsite prepare a Hazardous Materials Business Plan (HMBP) and submit it to the local CUPA, which in this case is the ACDEH.
	California Hazardous Waste Control Act; DTSC	Under the California Hazardous Waste Control Act, California Health and Safety Code, Division 20, Chapter 6.5, Article 2, Section 25100 et seq., DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. DTSC is also the administering agency for the California Hazardous Substance Account Act. California Health and Safety Code, Division 20, Chapter 6.8, Section 25300 et seq., also known as the State Superfund law, providing for the investigation and remediation of hazardous substances pursuant to State law.
	California Fire Code	The California Fire Code regulates the storage and handling of hazardous materials, including the requirement for secondary containment, separation of incompatible materials, and preparation of spill response procedures. In addition, the Fire Code includes designing structures to enable ingress and egress during emergencies such as fires and other emergencies. The code includes designing for ingress and egress, emergency escape routes, exit design requirements, and lighting.
Hazardous Materials Transportation	Titles 13, 22, and 26 of the California Code of Regulations	Regulates the transportation of hazardous waste originating in and passing through the state, including requirements for shipping, containers, and labeling.
	CHP and Caltrans	These two State agencies are primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies.

TABLE 4.8-2 (CONTINUED)
STATE LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible State Agency	Description
Occupational Safety	Cal/OSHA	Cal/OSHA has primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations (CFR). Cal/OSHA standards are generally more stringent than federal regulations.
	Cal/OSHA regulations (Title 8 CCR)	Concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.
	California Office of Statewide Health Planning and Development	The Office of Statewide Health Planning and Development serves as the regulatory building agency for all hospitals and nursing homes in California. Its primary goal in this regard is to ensure that patients in these facilities are safe in the event of an earthquake or other disaster, and to ensure that the facilities remain functional after such an event in order to meet the needs of the community affected by the disaster.
Construction Storm Water General Permit (Construction General Permit; Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ)	RWQCB	Dischargers whose project disturbs one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the <i>NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities</i> (Construction General Permit; Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). Construction activity subject to this permit includes clearing, grading, grubbing, and other disturbances to the ground such as excavation and stockpiling, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of a facility. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific Best Management Practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving offsite into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management and good housekeeping, and are intended to protect surface water quality by preventing the offsite migration of eroded soil and construction-related pollutants from the construction area.

TABLE 4.8-2 (CONTINUED)
STATE LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible State Agency	Description
Municipal Separate Storm Sewer System (MS4) Permits	State Water Resources Control Board (SWRCB)	The Municipal Storm Water Program regulates storm water discharges from municipal separate storm sewer systems (MS4s) throughout California. An MS4 is a conveyance or system of conveyances that is: owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.; designed or used to collect or convey stormwater (e.g., storm drains, pipes, ditches); is not a combined sewer; and is not part of a sewage treatment plant, or publicly owned treatment works. Pursuant to the Federal Water Pollution Control Act (Clean Water Act) Section 402(p), storm water permits are required for discharges from an MS4 serving a population of 100,000 or more. The Municipal Storm Water Program manages the Phase I Permit Program (serving municipalities over 100,000 people), the Phase II Permit Program (for municipalities less than 100,000), and the Statewide Storm Water Permit for the State of California Department of Transportation. The State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (collectively, the Water Boards) implement and enforce the Municipal Storm Water Program. The MS4 permits of the Port of Oakland and the City of Oakland are discussed further in Section 4.9, <i>Hydrology and Water Quality</i> .
Industrial Storm Water General Permit Order No. 2014-0057-DWQ	RWQCB	Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ (IGP). The IGP regulates discharges associated with certain defined categories of industrial activities including manufacturing facilities; hazardous waste treatment, storage, or disposal facilities; landfills, land application sites, and open dumps; cement manufacturing; fertilizer manufacturing; petroleum refining; phosphate manufacturing; recycling facilities; steam electric power generating facilities; transportation facilities; and sewage or wastewater treatment works. The IGP requires the implementation of best management practices, a site-specific SWPPP, and monitoring plan. The IGP also includes criteria for demonstrating no exposure of industrial activities or materials to storm water, and no discharges to waters of the United States.
Underground Infrastructure	California Code of Regulations Sections 4216-4216.9	Sections 4216-4216.9, "Protection of Underground Infrastructure" require an excavator to contact a regional notification center (e.g., Underground Services Alert or Dig Alert) at least two days prior to excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert, the regional notification center for southern California. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities are then notified and are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area.

**TABLE 4.8-2 (CONTINUED)
 STATE LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT**

Classification	Law or Responsible State Agency	Description
Emergency Response	California Office of Emergency Services (OES) and local government partners	<p>The State of California and local governments throughout the Bay Area, including Alameda County, have made investments in the planning and resources necessary to respond to natural and human-caused emergencies and disasters. Cal OES and its local government partners developed the Bay Area Regional Emergency Coordination Plan with support from the Department of Homeland Security to provide a framework for collaboration and coordination during regional events. The Regional Emergency Coordination Plan (RECP) has been prepared in accordance with national and State emergency management systems and plans. The RECP provides an all-hazards framework for collaboration among responsible entities and coordination during emergencies in the San Francisco Bay Area. The RECP defines procedures for regional coordination, collaboration, decision-making, and resource sharing among emergency response agencies in the Bay Area.</p> <p>The RECP does not replace existing emergency response systems. Rather, it builds on the Standardized Emergency Management System (SEMS) and the California State Emergency Plan to provide methods for cooperation among Operational Areas and Cal OES, Coastal Region. The RECP provides linkages to ensure that existing Bay Area emergency response systems work together during the response to an event. In addition, the RECP complies with the requirements of the National Incident Management System, and is consistent with the National Preparedness Goal.</p>

Regional

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Program, codified in Health and Safety Code Sections 25404 et seq., requires the administrative consolidation of six hazardous materials and waste programs under one agency, a CUPA. The following programs are consolidated under the unified program:

- Hazardous Materials Release Response Plans, and Inventory (also referred to as HMBPs)
- California Accidental Release Program
- Underground Storage Tanks
- Aboveground Petroleum Storage Spill Prevention Control and Countermeasures
- Hazardous Waste Generation and Onsite Treatment
- Uniform Fire Code Plans and Inventory Requirements

The State Secretary for Environmental Protection designated ACDEH as the local CUPA. The CUPA is charged with the responsibility of conducting compliance inspections of hazardous materials facilities in Alameda County, including the City of Oakland. These facilities handle hazardous materials, generate or treat a hazardous waste, and/or operate underground storage tanks. The CUPA uses education and enforcement to minimize the risk of chemical exposure to

human health and the environment. The CUPA forwards important facility information to local fire prevention agencies that enables them to take appropriate protective action in the event of an emergency at regulated facilities. In order to legally store and use hazardous materials above the trigger quantities, users must apply for permits and demonstrate satisfactory compliance with regulations. The quantities that trigger disclosure are based on the maximum quantity on site at any time:

- 55 gallons, 500 pounds, or 200 cubic feet capacity for 30 days or more at any time in the course of a year
- Any amount of hazardous waste
- Category I or II pesticides
- Explosives
- Extremely hazardous substances above the threshold planning quantity

Alameda County Sheriff's Office – Office of Emergency Services

The Alameda County Sheriff's Office – Office of Emergency Services (County OES) is the lead agency for Alameda County under the Standardized Emergency Management System (SEMS; see Emergency Response above under State regulations), and the purpose of which is to prepare the County to respond efficiently and effectively to emergencies which threaten life, property, or the environment. The County OES administers and operates the Emergency Operations Center (EOC) from which centralized emergency management can be conducted. The EOC is activated by an on-call County OES Coordinator in the event of an emergency. Under such condition, the EOC supports and coordinates emergency response and recovery operations; coordinates and works with other appropriate federal, State and other local government agencies; and prepares and disseminates emergency public information, among other responsibilities.

The Alameda County Board of Supervisors adopted the current Emergency Operations Plan (EOP) in 2012. The Alameda County operational area includes the City of Oakland. The EOP is an extension of the State's California Emergency Plan, and provides tasks, policies, and procedures for managing multi-agency and multi-jurisdictional emergency operations, public information functions and resource management. The EOP identifies a number of potential threats based upon a hazard analysis, including earthquakes, wildland urban/interface fire, extreme weather, public health emergency, technological and resource emergency, hazardous material incident, terrorism, floods and landslides.

In addition, in 2011, the County OES, with participation by 12 of the incorporated cities in Alameda County including Oakland, committed to participating with the 2010 Association of Bay Area Governments Local Hazard Mitigation Plan, *Taming Natural Disasters, Multi-Jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area*. This serves as the County's Local Hazard Mitigation Plan pursuant to the State Disaster Mitigation Act of 2000. The document identifies the County-wide mitigation strategies to be implemented by the participating agencies in order to reduce hazard risk and increase resiliency throughout Alameda County.

Local Plans, Ordinances and Policies

Port of Oakland Ordinances

Port of Oakland Environmental Ordinance No. 4345 (Environmental Ordinance)

The Board of Port Commissioners adopted the Port of Oakland Environmental Ordinance No. 4345, which became effective on September 1, 2015 and which establishes environmental requirements that apply to all entities that access or use Port property. The requirements cover, among other matters, storage tanks, compliance with environmental laws, hazardous materials management and cleanup, imported fill, reuse of excavated materials, asbestos, permits, and reporting.

Phase II Small Municipal Separate Storm Sewer System (MS4) and Port of Oakland Ordinance 4311

As discussed above under State Regulations, the MS4 permit for small MS4 systems requires permittees (in this case, the Port of Oakland) to reduce pollutants and runoff flows from new development and redevelopment using BMPs to the maximum extent practicable. The Port adopted Ordinance No. 4311, known as the Storm Water Ordinance on January 15, 2015, to provide legal authority to control discharges to its storm drainage system to meet its NPDES Phase II Small MS4 Permit conditions for water quality in stormwater discharged into the Estuary. The requirements are detailed in Section 4.9, *Hydrology and Water Quality*. However, the City and the Port are cooperating to establish a shared regulatory framework under which the City will apply its MS4 NPDES permit requirements for design and enforcement, as discussed in Section 4.9.

Port of Oakland Ordinance No. 4474 (Ordinance Adopting by Reference Oakland Municipal and Planning Codes)

Port Ordinance 4474 adopts by reference Oakland Municipal and Planning Codes Sections 13.08.590 through 13.08.620, which requires Port tenants to comply with private sewer lateral regulations, and directs Port staff to prepare plans to assess and repair Port-owned private sewer laterals.

Port of Oakland Ordinance No. 4113 (Ordinance Establishing Design, Construction, Testing, and Inspection Standards for Sanitary Sewer Facilities)

Port Ordinance 4113 regulates the type of wastewater discharged into the Port sewer system and to require that sewers and connections be properly designed and constructed (Carollo, 2010). The Port developed the Port-Wide Sewer System Management Plan (SSMP) to establish design, construction, testing, and inspection standards for sanitary sewer facilities, and limits on the type, character, and volume of allowable discharges to the sanitary sewer system. The SSMP includes sanitary sewer design standards; an overflow emergency response plan; a fats, oil, and grease control plan; and a system evaluation and capacity assurance plan.

Port Hazardous Materials Management Guide

The Port's Hazardous Materials Management Guide (HMMG) identifies requirements for the storage, use, generation, and disposal of hazardous materials and waste on Port property. The HMMG identifies individuals responsible for hazardous materials management at the Port; describes typical hazardous materials/wastes stored, generated and handled; provides management procedures; and provides information on regulatory requirements, training requirements, and record keeping procedures including inspection checklists.

City of Oakland General Plan

The *Public Safety Element* of the Oakland General Plan describes the following policies regarding hazards and hazardous materials, adopted for the purpose of avoiding or mitigating an environmental effect, and that apply to the Project.

Policy HM-1: Minimize the potential risks to human and environmental health and safety associated with the past and present use, handling, storage, and disposal of hazardous materials.

Action HM-1.1: Continue to exercise unified-program responsibilities, including the issuance of permits for and inspection of certain industrial facilities, monitoring the filing of disclosure forms and risk-management plans, hazardous-materials assessment reports and remediation plans, and closure plans by such facilities.

Action HM-1.2: Continue to enforce provisions under the zoning ordinance regulating the location of facilities which use or store hazardous materials.

Action HM-1.6: Through the Urban Land Redevelopment program, and along with other participating agencies, continue to assist developers in the environmental clean-up of contaminated properties.

Policy HM-2: Reduce the public's exposure to toxic air contaminants through appropriate land use and transportation strategies.

Action HM-2.1: Continue to enforce performance standards controlling the emission of air contaminants, particulate matter, smoke and unpleasant odors.

Policy HM-3: Seek to prevent industrial and transportation accidents involving hazardous materials, and enhance the city's capacity to respond to such incidents.

Action HM-3.1: Continue to enforce regulations limiting truck travel through certain areas of the city to designated routes, and consider establishing time-based restrictions on truck travel on certain routes to reduce the risk and potential impact of accidents during peak traffic hours.

Oakland Municipal Code

Under Oakland Municipal Code, Title 8 Section 12.010, the City of Oakland assumes the authority and responsibility for the implementation of Chapter 6.95 of the California Health and Safety Code (Health and Safety Code Section 25500 et seq.), as to the handling of the hazardous materials in the city. Pursuant to Section 25502 of Chapter 6.95, the City shall have exclusive jurisdiction within its boundaries for the purposes of carrying out Chapter 6.95.

Oakland Municipal Code, Title 8 Section 42 previously described the City as the local CUPA. However, that role has been transferred to the Alameda County Department of Environmental Health, as previously noted.

Existing and Future Site-Specific Regulatory Framework and Governing Documents

The DTSC is the regulatory agency overseeing investigation and cleanup of the Project site and will continue in this regulatory role for the foreseeable future. As previously noted, each of the three principal parts of the Project site (Howard Terminal, Gas Load Center, and Peaker Power Plant) is regulated by the DTSC under separate existing governing documents and separate LUCs, which restrict the use of the Project site for certain land uses and activities. The existing three-site regulatory framework described further below is proposed to be replaced shortly after certification of the EIR through DTSC approval of consolidated LUCs and associated governing documents, including two LUCs (one for all Port-owned property on the Project site and one for all private property on the Project site) that would allow activities and uses, such as residential, which are currently prohibited on the site under existing LUCs. The subsections below describe the existing LUCs and associated governing documents, followed by a summary of the anticipated process to consolidate the governing documents to allow activities and uses proposed by the Project.

Land Use Covenants

The existing LUCs for the three principal parts of the Project site are largely the same and are summarized as follows:

- **Prohibited Uses.** The Property shall not be used for any of the following:
 - a. A residence, including any mobile home or factory built housing, constructed or installed for use as residential human habitation.
 - b. A hospital for humans.
 - c. A public or private school for persons under 21 years of age.
 - d. A day care center for children.
 - e. Un-capped park or un-capped open space that exposes contaminated soil.
- **Prohibited Activities.**
 - a. Except as otherwise provided... the Property shall not be used in such a way that will disturb or interfere with the integrity of the existing cap.
 - b. The Property shall be used and developed in a way that preserves the integrity of the cap installed on the Property. The capped soil shall not be disturbed without a Risk Management Plan, a Health Safety Plan, and a Soil Management Plan submitted to the Department for review and approval.
 - c. The Owner shall provide the [DTSC] written notice at least thirty (30) days prior to any activities, which will disturb the cap and underlying soils.
 - d. The owner shall inspect and maintain improvements constructed on the Property as provided in the Risk Management Plan.
 - e. The owner shall notify the [DTSC] of each of the following:
 - i. The type, cause, location and date of any damage to the cap and

- ii. The type and date of repair of such damage. Notification to the Department shall be made as provided below within ten (10) working days of both the discovery of any such disturbance and the completion of any repairs.
- f. The Owner shall not extract the groundwater for purposes other than site remediation or construction dewatering.

As listed above, the LUCs currently prohibit residential use. This prohibition in the LUCs may be amended with approval by the DTSC, provided changes to the site continue to protect site users from the contaminated materials. Such changes may include an engineered equivalent (e.g., drainage layer and fill preventing contact with the underlying contaminated material) or removal of LUCs in uncontaminated areas with DTSC approval of the changes. The anticipated process for consolidating the LUCs and governing documents to, among other things, allow residential use, is summarized further below (see *Future Governing Documents* below).

Individual Plans for the Three Sites

The LUCs also require the implementation of Operations and Maintenance Plans (O&M Plans; available on the DTSC EnviroStor website at: <https://www.envirostor.dtsc.ca.gov/public/>). Each of the three sites have separate plans governing the ongoing operations and maintenance, which include components describing how soil and groundwater must be managed during future maintenance activities, utility installations, and other activities. For Howard Marine Terminal, the soil and groundwater plan is titled the Soil and Groundwater Risk Management Plan (RMP) and is Appendix C to the RAW, which is the remedial decision document. The RMP is incorporated by reference into the O&M Agreement, but no separate document is titled the O&M plan. Thus, uniquely, the RMP is the O&M Plan for Howard Marine Terminal. For both the Gas Load Center and the Peaker Power Plant, the O&M Plan is separate from the remedial document, which is the more typical format. For both, the O&M Plan includes an SGMP.

Overall, the O&M Plans, which include the SGMPs, contain many of the same monitoring requirements and procedures to ensure maintenance of the integrity of the site cap overtime, so that impacted soil and groundwater is properly characterized and handled when cap disturbance activities occur. All require annual groundwater monitoring programs, annual and five year reporting obligations, health and safety plans, notification requirements, cap maintenance obligations, and for more involved construction projects, project specific soil and groundwater management plans must be approved by DTSC before work can begin.

With regard to the specific soil and groundwater plans, all plans must describe site management measures for:

- Handling impacted soil
- Minimizing dust
- Preventing access to excavated or exposed soil
- Managing storm water
- Equipment decontamination measures

- Control of construction dewatering water
- Proper characterization of soil and groundwater
- Disposal of impacted soil and groundwater in accordance with applicable laws, notification requirements
- Restoration of the cap to match the existing pavement.

A detailed summary of the Howard Terminal RMP is provided first below because its RMP is the more robust and comprehensive plan of the three sites. Descriptions of the Gas Load Center SGMP and the Peaker Power Plant SGMP follow, highlighting similarities and differences with the Howard Terminal RMP.

Howard Marine Terminal: RMP Summary

The existing RMP contains the following risk management measures that would be implemented during any construction activity at the Project site that would include breaching of the existing cap:

- **Construction Risk Management Measures**

- *Dust Management*

- Basic Control Measures for all Construction Sites
 - Water all active construction areas at least twice daily.
 - Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of free board.
 - Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved and staging areas at construction sites.
 - Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
 - Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Enhanced Control Measures: for Construction Sites Greater than Four Acres
 - Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles.
 - Limit traffic speeds on unpaved roads to 15 mph.
 - Install sandbags or other erosion control measures to prevent silt runoff to public roadway.
- Optional Control Measures
 - Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site; install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas; suspend excavation and grading when winds (instantaneous gusts) exceed 25 mph, and/or limit the area subject to excavation, grading, and other construction activity at any one time.

- **Soil Management**

- ***Excavated Soil***

- All excavated soils will be stockpiled onsite and isolated from the public by fencing or other means of site control. Control measures (i.e., water spraying, cover) for the stockpiles will be implemented to minimize dust plumes. In the event that excavated soils were stockpiled during the rainy season, typically from October to April, the stockpiles will be covered with anchored plastic sheeting, or an equivalent cover, to minimize erosion of the stockpiled soil and mixing with store water runoff.
 - All excess excavated soil will be disposed of offsite in accordance with all applicable federal and State regulations; non-excess soil will be placed back into excavations. Prior to offsite disposal, the excavated soil will first be appropriately classified to determine whether the waste will constitute a hazardous or non-hazardous waste. Waste characterization will include waste stream delineation, representative sampling, analysis, and statistical evaluation in accordance with the guidelines contained in U. S. Environmental Protection Agency's (U.S. EPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Method, SW-846, Third Edition. If the soil is found to be non-hazardous, then further evaluation may be needed to determine which non-hazardous waste landfills may be able to accept the waste.

- ***Imported Soil***

- All imported soil will consist of clean fill that meets import criteria. A certificate will be obtained from the supplier of the soil regarding the chemical composition of the soil to ensure it is free of contamination.

- **Dewatered Groundwater Management**

Appropriate engineering techniques will be employed to minimize the amount of dewatering necessary during construction activities. All dewatered groundwater will be contained (e.g., Baker tanks). During the rainy season, the containment may be covered to prevent the accumulation of rain water. Dewatered groundwater will be transported off site for disposal or treated and disposed with approval from overseeing agencies. The groundwater will be first characterized to determine appropriate disposal options.

- **Storm Water Management**

An SWPPP will be required for all construction activities that involve breaching the cap, in accordance with the requirements of the National Pollutant Discharge Elimination System, General Permit for Discharges of Storm Water Associated with Construction Activities, Water Quality Order 99-08-DWQ, adopted by SWRCB. The purpose of the SWPPP is to minimize the potential for soil erosion and for discharge of pollutants during construction activities. The SWPPP will be consistent with guidance from the San Francisco Regional Water Quality Control Board (e.g., Best Management Practices) and the Manual of Standards for Erosion and Sedimentation Control Measures established by the Association of Bay Area Governments.

- **Site Health and Safety**

During construction activities, construction workers that may directly or indirectly be exposed to onsite soil or groundwater would perform work in accordance with Cal/OSHA regulations. All site construction activities associated with exposure to onsite soil or groundwater will be conducted in compliance with a site-specific HSP to protect workers and the environment from site contaminants. The site specific HSP will be prepared according to

Title 8. California Code of Regulations, Section 5192 and Title 29 Code of Federal Regulations 1910.120. The HSP will include provisions for air monitoring and personal protective equipment to be worn by workers during site redevelopment activities.

- **Cap Maintenance and Inspection**

The RMP requires that the asphaltic concrete cap over the Project site must be maintained to ensure that there is no exposure to site users from residual contamination present in the subsurface. The RMP requires that the Port or its contractor will inspect the site semi-annually to check for cap deterioration. The inspection will consist of visual inspections along longitudinal (north to south) traverses every 100 feet. The inspection will consist of observations regarding cap cracking, erosional damage, settlement, sloughing, seepage, or other damage to the cap. The inspection will be documented and kept in the Port files for the Project site and submitted to DTSC. If damage is detected in the cap, routine maintenance will be performed to correct cap damage.

As stated in the section on the Land Use Covenant, the cap may be disturbed and reworked with DTSC approval providing that “the Property shall be used and developed in a way that preserves the integrity of the cap installed on the Property.” This would allow replacement of the cap with other equivalent engineering solutions (e.g., adding additional fill constructing drainage systems), so long as the engineered solution preserves the integrity of the cap and is acceptable to DTSC.

- **Groundwater Monitoring Program**

The RMP required that groundwater monitoring will occur for five years to assess the future groundwater quality and to confirm the conclusions of the ecological risk assessment. Monitoring was to occur semi-annually for one year and then annually for the following four years.

- **Future Construction/Utility Maintenance Risk Management Measures**

The RMP requires that utility and construction workers will be required to conduct work in accordance with risk management measures specified, above, as deemed applicable. These risk management measures will be included in an O&M Plan. The O&M Plan will be prepared by the Port (or its contractors) and referenced in the deed restriction established for the site.

- **Implementation Evaluation**

The RMP requires that the Port will reevaluate periodically to ensure that the risk management measures in the RMP are appropriate and effective.

Gas Load Center: O&M and SGMP Summary

Ongoing operations and maintenance for the Gas Load Center is currently governed by the LUC, the O&M Agreement, and the O&M Plan, which includes Section 4.0 SGMP.

Similar to the Howard Terminal RMP, the existing Gas Load Center O&M Plan sets forth the site monitoring and maintenance requirements, including the annual groundwater monitoring program, the Gas Load Center SGMP, the annual and five-year reporting obligations, the site health and safety plan, and the notification requirements.

In particular, the SGMP describes the framework for managing soil and groundwater. The owner of the site has overall responsibility for implementing the SGMP and must periodically evaluate if the control measures must be updated to be effective.

The soil handling guidelines are largely similar to that provided in the Howard Terminal RMP. For example, notification is required to DTSC and other agencies prior to any work that would disturb the cap. Stockpiled soil must be temporarily placed on plastic sheeting of a minimum thickness in a designated stockpile area. Small volumes could be placed in 55-gallon drums and large volumes could be placed directly in secured, roll-off bins. The stockpiled soil must be secured with a cover to prevent erosion or run-off and secured by temporary fences to prevent access. Any reuse of affected soil for backfill requires DTSC concurrence. Soil and groundwater must be fully characterized prior to disposal and disposal must be done in accordance with applicable laws. If any backfill material is used at the site, the soil must be tested, based on the knowledge of the soil source, and the analytical results must be provided to DTSC for approval.

Minor construction projects, including routine maintenance, must be included in the annual report. Prior to any major construction projects, a construction plan must first be submitted to DTSC for approval as well as a completion report.

The Gas Load Center SGMP also describes equipment decontamination procedures and dust control and monitoring practices that must be taken, in accordance with Bay Area Air Quality Management District requirements. For example, vehicle speeds should be kept below 5 miles per hour, spray water should be utilized to minimize dust, and stockpiles should be covered when not in use. For monitoring, earthwork activities require daily work zone air monitoring and the SGMP sets for the specific action levels for dust.

The Gas Load Center SGMP also outlines procedures to take if unanticipated subsurface structures, soil, or groundwater conditions are encountered, including that work must be stopped and the area be secured so that further evaluation can occur prior to taking additional action. Any equipment onsite must be decontaminated prior to leaving the access-controlled work area, to prevent inadvertent exposure of impacted soil or groundwater, or tracking onto other parts of the site or public streets.

Stormwater management and construction dewatering water must be managed in the same or similar manner as described in the RMP for Howard Terminal, including that construction dewatering water must be pumped into holding tanks and the water must be characterized prior to discharge. The SGMP also describes the disposal requirements, which in general require that any soil or groundwater removed from the site must be recorded and characterized prior to disposal.

Following the completion any construction activities, the cap must be restored to match the existing paving, which includes pervious asphalt, pervious concrete, regular asphalt, regular concrete slab, and aggregate cover. Any different pavement used requires DTSC approval.

Peaker Power Plant: O&M and SGMP Summary

Ongoing operations and maintenance for the Peaker Power Plant is currently governed by the LUC, the O&M Agreement, and the O&M Plan, including Appendix B containing the SGMP.

The O&M and SGMP largely mimics the SGMP for the Gas Load Center and the RMP for Howard Terminal. Because it was drafted by the same PG&E consultant for the Gas Load Center, these reports contain many of the same terms. For the Peaker Power Plant, PG&E as the historical former operator, is obligated to monitor the cap, inspect for LUC compliance, perform groundwater monitoring, and prepare annual and five- year reports. The current property owner, which is now Vistra, must notify DTSC in the event of a site cap disruption and if any potentially impacted soil or groundwater is exposed.

Because soil impacted with free product that was excavated in 2013 emitted odors, the Peaker Power Plant SGMP also provides that odor mitigation measures may be required for future work that could expose soil with free product, including tarps, foam, or other odor neutralizing agents.

Overall, the remaining aspects of the Peaker Power Plant SGMP include those identified in the Gas Load Center SGMP.

Future Governing Documents

Moving forward, the Oakland A's are engaged in a process with DTSC to consolidate the existing cleanup decision documents for the different portions of the Project site into a single set for the entire site. The new, consolidated decision documents are proposed to address all three current DTSC sites within the Project site, including the previously described Embarcadero/Clay parking lot (BevMo parking lot) and the public rights of way. The objective is for DTSC to approve a new consolidated RAW for the entire Project area, requiring the preparation of a site management plan or equivalent document and an O&M plan and agreement, as well as recordation of two LUCs, one for all the Port-owned portions of the Project area, and one for the portions to be owned by the Oakland A's. The objective is also for DTSC to rely on this Project EIR for CEQA compliance for its decision to approve the new RAW, which means the RAW could not be approved until after the Project EIR is certified by the City. DTSC approval will be required before any grading or construction commences.

The substantive requirements of these replacement documents would be similar to those in the existing governing documents described above, but would be specifically tailored to ensure protections appropriate for the Project's anticipated construction activity and anticipated land uses, including allowing residential use under specified conditions. These substantive requirements would be based on the Human Health and Ecological Risk assessment that has been prepared in compliance with established US EPA and DTSC guidelines and approved by DTSC. The risk assessment proposes, and the RAW would establish, numeric target cleanup levels for each COC, with residential and commercial/industrial tiers. These numeric target levels are designed to achieve a theoretical lifetime excess cancer risk of no more than 1 in a million, and non-cancer hazard index utilizing standard Cal EPA and US EPA methodology of less than or equal to 1. The future consolidated governing documents are further described below in Impact HAZ-2.

4.8.3 Significance Criteria

The City of Oakland has established thresholds of significance for CEQA impacts, which incorporate those in Appendix G of the State CEQA Guidelines (City of Oakland, 2016). The Project would have a significant adverse impact related to hazards and hazardous materials if it would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
3. Create a significant hazard to the public through the storage or use of acutely hazardous materials near sensitive receptors;⁶
4. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
5. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (i.e., the “Cortese List”) and, as a result, would create a significant hazard to the public or the environment;⁷
6. Result in less than two emergency access routes for streets exceeding 600 feet in length unless otherwise determined to be acceptable by the Fire Chief, or his/her designee, in specific instances due to climatic, geographic, topographic, or other conditions;⁸
7. Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would result in a significant safety hazard for people residing or working in the project area;
8. Be located within the vicinity of a private airstrip, and would result in a significant safety hazard for people residing or working in the project area;
9. Fundamentally impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
10. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The changes to Appendix G of the State CEQA Guidelines effective in December 2018 were intended to reflect recent changes to the CEQA statutes and court decisions. Many of these recent

⁶ Per the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, evaluate whether the project would result in persons being within the Emergency Response Planning Guidelines (ERPG) exposure level 2 for acutely hazardous air emissions either by siting a new source or a new sensitive receptor. For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers.

⁷ The Cortese List includes hazardous waste sites from the DTSC EnviroStor database, leaking underground storage tank sites from the RWQCB GeoTracker database, list of solid waste disposal sites with waste constituents above hazardous waste levels outside the waste management unit, list of active Cleanup and Desist Orders and Cleanup and Abatement Orders from RWQCB, and list of hazardous waste facilities subject to corrective action by the DTSC. The Howard Terminal and the Peaker Power Plant are on the Cortese List.

⁸ See the Transportation/Traffic thresholds for additional thresholds related to transportation.

changes and decisions are already reflected in the City's adopted significance thresholds, which have been used to determine the significance of potential impacts. To the extent that the topics or questions in Appendix G are not reflected in the City's thresholds, these topics and questions are considered in the impact analysis below, even though the determination of significance relies on the City's thresholds. For example, the Appendix G criterion 7 adds excessive noise to the airport criterion. However, as stated below in *Topics Considered and Determined to Have No Impact*, the Project site is not located within two miles of an airport. Therefore, any issues associated with proximity to airports are not relevant to this analysis.

Approach to Analysis

General

The analysis in this section is based on the conditions described in the reports cited below in Section 4.8.6, *References*. The methodology for analysis of hazards and hazardous materials impacts includes an assessment of both construction and operational impacts. Hazardous materials impacts relative to air quality are evaluated in Section 4.2, *Air Quality*, and are not considered further in this section. Note that dust suppression and vapor intrusion barriers are remedies included in the previously discussed decision documents addressing hazardous materials where appropriate. Dust suppression is also addressed along with other potential air pollutants in Section 4.2, *Air Quality*. Issues related to exposure of people or structures to wildland fires are addressed in Section 4.17, *Effects Found Not to Be Significant*, and are not considered further in this section.

The Project would be regulated by the various laws, regulations, and policies summarized in Section 4.8.2, *Regulatory Setting*. Compliance by the Project with applicable federal, State, and local laws and regulations is assumed in this analysis, and local and State agencies would be expected to continue to enforce applicable requirements to the extent that they do so now. Note that compliance with many of the laws and regulations is a condition of permit approval.

As discussed in Section 4.8.1, *Environmental Setting*, the Peaker Power Plant is an operating power generation facility. This power plant is planned to be developed with new clean energy resources (PG&E, 2017); see also a description of the disposition of use of that plant under the Power Plant Variant in Chapter 3, *Project Description* and Chapter 5, *Variants*. The LUC and cap (or engineered equivalent) would still remain regardless of the future land use.

Remediation and Mitigation of Contaminated Materials

As discussed above in Section 4.8.1, *Environmental Setting*, various investigations and remedial actions (cleanups) have been conducted on the Project site. The investigations include the most recent Site Investigation Report (ENGE0, 2020a) summarized above in Section 4.8.1, *Environmental Setting, Current Nature and Extent of Onsite Contamination*. The Site Investigation Report consolidated and discussed the nature and extent of contamination in soil gas, soil, and groundwater throughout the Project site and listed a range of remedial actions that could be implemented to address the contamination. The Risk Assessment completed in 2020 developed site-specific Target Cleanup Levels to be incorporated into the RAW and applied during remedial activities (ENGE0 2020b).

The Project will require development-related environmental remediation and/or mitigation and site grading. These processes could occur in a phased manner as the Project is built out over time, or they could be completed for the entire site at once. In either case, the remediation and/or mitigation will proceed according to the RAW that will be considered for approval by DTSC after certification of the EIR by the City; the general standards and available methods for the anticipated future RAW is summarized below in Impact HAZ-2. As described in Chapter 3, *Project Description*, Phase 1 of the Project would include the area generally east of Market Street. The balance of the site west of Market Street would be improved, utilizing existing pavement areas to serve as a surface parking lot before the full project site is developed.

If the project takes the phased approach to address development-related environmental issues and grading, targeted remediation and/or mitigation would occur on Phase 1 portions of the site, and the same portions would be raised to future grade. This approach to site grading would require some interim circulation conditions to connect through the approximate 3- to 5-foot grade differential between Phase 1 and the rest of the site (stairs, ramps, etc.). After Phase 1 is complete, site remediation could occur over the balance of the site or with a similar targeted approach.

If the project addresses development related environmental issues and grading across the site all at once, targeted remediation and/or mitigation and site grading would occur across the entirety of the project site at once. This approach to site grading would also require interim circulation conditions, however, there would be fewer grade changes to negotiate. With either the phased or un-phased approach, remediation and/or mitigation would be required per the RAW as approved by DTSC following certification of the EIR.

Potential remedial action approaches and methods are further described in *Consideration of Remediation and Mitigation Alternatives*, dated July 31, 2019 (ENGE0, 2019b). The RAW would include a combination of the methods summarized here. Methods that would treat or remove soil gas and/or soil contamination in the vadose zone⁹ include encapsulation or surface capping, excavation, soil vapor extraction (SVE), bioventing and in-situ bioremediation,¹⁰ in-situ chemical oxidation (reduction), and/or thermal desorption.¹¹ Methods that would treat or remove groundwater contamination include monitored natural attenuation, pump and treat, petroleum skimming from wells, air sparging,¹² dual-phase extraction, and/or permeable reactive barriers. Containment strategies include vapor intrusion mitigation systems (vapor barriers) and vertical cutoff barriers/walls, in addition to the previously listed surface capping. The RAW would identify the methods to be used, the specific areas and media for the given remedial methods would be applied, the regulatory standards to be achieved, and measures to restore the cap integrity where required.

⁹ The soil zone above groundwater.

¹⁰ Bioventing and bioremediation are processes of stimulating the natural in situ biodegradation of contaminants in soil by providing air, oxygen, and/or nutrients to existing soil microorganisms.

¹¹ Thermal desorption is a treatment method where the contaminated materials are heated to release the contaminants to soil vapor, which are then pumped out and collected for treatment.

¹² Air sparging is a treatment method where air is bubbled through contaminated groundwater, contaminants are transferred to the air, and the now contaminated air pumped out and collected for treatment.

Although any number of the above-listed methods may be used, the approach is currently anticipated to consist of the following combination of actions, subject to DTSC approval:

Soil Management and Reconsolidation and Select Offsite Disposal

Site grades would be raised to facilitate redevelopment, and the placement of clean overlying fill material would provide a protective barrier for the overlying land users to prevent exposure to underlying contaminated materials. In addition, the proposed urban development plan would incorporate hardscape areas and reduce the extent of privately owned areas where people could potentially come into contact with underlying contaminated materials.

Several areas of free-phase petroleum hydrocarbons floating on groundwater are present, including at the southwestern portion of the Project site near the subsurface wooden bulkhead wall, in a well along the south side of the former Gas Load Center, at the southeast corner of the Peaker Power Plant parcel, and possibly at the existing AST footprint in the Peaker Power Plant Parcel that has not been tested due to the presence of the ASTs. Much of these impacts would likely require removal from the Project site or active remediation.

The northern portion of the proposed ballpark overlies or is near noted contaminated materials and may require more intensive remediation or removal. The baseball playing surface may be lowered with respect to existing and future grades. If this design is pursued, the resulting excavations would generate excess soil materials, much of which would be expected to be contaminated, necessitating remediation.

The contamination, consisting primarily of TPH, PAHs, and metals, including lead, has been observed to the maximum explored depths of 10 feet during the 2019 investigation. In general, and with some localized exceptions, these impacts become shallower with increased distance to the south, with impacts generally limited to surface and near-surface soil at the southern portion of the proposed ballpark footprint. Potential remediation strategies are identified in the preceding section.

In general, other soil impacts would be managed at the time of grading and redevelopment. Impacted soils would be reconsolidated at the Project site, where they would be protectively capped (the current engineering control at the Project site) with overlying clean engineered fill materials and/or hardscape land improvements, such as building floor plates and paved surfaces. Contaminated soils would be reconsolidated in such locations. Select soil materials not meeting the criteria for onsite reconsolidation would be removed from the Project site and disposed of at an offsite licensed disposal facility permitted to accept the waste.

Much of the impacted material may be maintained at the Project site. However, it is important to note that remedial action objectives (RAOs) have not been established; this would occur after the RAW and the Human Health and Ecological Risk Assessment are approved, and would be reflected in the anticipated new RAW. Consequently, threshold conditions or COC concentration limits that would necessitate excavation and removal or more intensive remediation activity for hotspots have not yet been developed.

For the purposes of an initial conservative preliminary volume estimate, it is assumed that an area of 12 acres for hotspots or areas of significant impact would require excavation and removal.

Estimated volumes for various potential scenarios were calculated based on the assessed lateral extent, depth, and thickness in these areas. These volumes are summarized below in **Table 4.8-3**.

**TABLE 4.8-3
 ESTIMATED SOIL VOLUMES FOR REMOVAL DURING REMEDIATION ACTIVITIES**

Scenario	Volume (cubic yards)
Phase 1	100,000
Remainder of Buildout	100,000
Total	200,000

SOURCE: Oakland Athletics, 2020

It is conservatively assumed that 50 percent of this material may be handled as Class II non-hazardous (designated) waste. A candidate non-hazardous landfill would be Waste Management Altamont Landfill near Livermore, California. The remainder of the material would be handled as RCRA Hazardous Waste or Class I California Hazardous Waste. A candidate Class I Hazardous Waste landfill would be Clean Harbors Buttonwillow Landfill in Buttonwillow, California.

Groundwater Management

A number of COCs are present at low-level concentrations (though exceeding some risk-based screening levels for drinking water). Additionally, localized areas of free-phase petroleum hydrocarbon contamination have been identified in several areas, as previously discussed. Although the concentrations exceed drinking water standards, the domestic utilization of groundwater at the Project site is not considered feasible given the naturally occurring brackish nature of groundwater adjacent to the Estuary. Therefore, groundwater is not considered to pose a human health risk through ingestion or dermal contact because the public would not use or be exposed to groundwater from beneath the Project site. The Risk Assessment also concluded that observed levels of COCs at Howard Terminal do not pose a significant risk to the environment, including aquatic organisms at the groundwater-Inner Harbor interface.

Consequently, large-scale groundwater remediation is not proposed. Site construction activities may result in groundwater extraction during dewatering activities. If groundwater is extracted, treatment would likely be necessary to remove sediments and/or COCs from groundwater prior to disposal. Such measures include the use of desilting equipment or basins and treatment using granular activated carbon (GAC). The treatment would be performed prior to discharge. The post-treatment management of the dewatering effluent would depend on the residual concentrations of COCs in the dewatering effluent. The most likely management option would be to discharge the effluent to the sanitary sewer in compliance with their acceptance criteria or reuse for dust control operations. If the effluent COC concentrations exceed the acceptance criteria of the sanitary sewer, then the effluent would need to be transported to an offsite licensed disposal facility permitted to accept the waste.

Because of the presence of contaminated groundwater beneath the Project site, the existing groundwater monitoring well network would be reinstalled following land redevelopment to

allow for the required long-term groundwater monitoring. Long-term operational groundwater treatment may be necessary if a cutoff wall and underdrain system are installed for the ballpark. As described in Chapter 3, *Project Description*, a cutoff wall and drainage system would be installed beneath the ballpark. Seasonal rainwater would be collected in a shallow drainage system that would route the rainwater to the storm drain system. While the cutoff wall would largely isolate groundwater beneath the ballpark, it is anticipated that some groundwater may seep through or under the cutoff wall. The groundwater levels within the area of the cutoff wall would be monitored and dewatering would occur on an as-needed basis. The dewatering effluent would be tested to assess the appropriate treatment and disposal method, as discussed above.

In the event short- or long-term groundwater extraction operations are required for the ballpark or elsewhere at the Project site, groundwater treatment would be required due to TPH and available cyanide. These materials can be treated and removed with common dewatering treatment technologies, including sand filtration and GAC prior to discharge.

Soil Vapor Intrusion Mitigation

The presence of contaminants in soil gas pose a risk of indoor vapor intrusion that will require mitigation. This can be addressed through building design where the entire ground floor footprint is not inhabited and is used for parking. With such designs, it is often required to install continuously operating fresh-air ventilation systems, which purge accumulated indoor gases to the atmosphere and exchange with fresh air. When a vapor intrusion risk is present and ground floor spaces are inhabited for residential or commercial purposes, a vapor intrusion management system (VIMS) may be required. Because land use plans and structural/architectural layouts have not been finalized and given the widespread potential for vapor intrusion at the Project site, it is assumed that active remediation and/or VIMSs would be required beneath the footprint of all habitable structures located on grade.

Implementation of Institutional Controls

As discussed above in Section 4.8.2, *Regulatory Setting, Existing and Future Site-Specific Regulatory Framework and Governing Documents*, LUCs are currently in place for almost the entire Project site. It is anticipated that contaminated soil would be reconsolidated and capped, some contaminated groundwater would remain in place, and VIMS would be required for certain structures to mitigate vapor intrusion concerns. Consequently, the new consolidated RAW to be approved by DTSC would require that the existing LUCs and their associated plans (RMPs, O&M Agreements, and SGMPs) be replaced to account for the changes to the Project site. The substantive requirements of these documents would be similar to those in the existing documents, but would be specifically tailored to ensure protections appropriate for the type of anticipated construction activity and the type of anticipated uses, including allowing residential use under specified conditions.

With respect to soil, it is common for LUCs and associated plans and agreements to identify a specific depth horizon to prevent future excavations into potentially contaminated soil. Once a depth horizon has been established, permission must be obtained from the oversight regulatory agency (in this case, DTSC) prior to excavations, borings, or similar subsurface activity.

Although groundwater would not be used in the future as a domestic water source, the LUCs would typically prohibit the use or extraction of groundwater in the future without the express permission of the oversight regulatory agency, similar to that described with soil excavation or exploration activity. In the event that groundwater is extracted in the future, there would be provisions in the consolidated RAW for characterization prior to re-use and/or discharge to a receiving system, such as the sanitary sewer. In addition, the LUCs will require that onsite monitoring wells would need to be protected (or relocated) and reasonable access would need to be provided to facilitate ongoing monitoring.

The LUCs and associated plans and agreements would also require ongoing monitoring and maintenance obligations for the VIMS. Further, work that could potentially compromise or breach the components of the VIMS would not be allowed without DTSC notification and restoration of components of the system that could be disturbed or damaged.

Topics Considered and Determined to Have No Impact

The following topics are considered to have no impact caused by the Project based on the proposed Project characteristics, its geographical location, and underlying site conditions. Therefore, these topics are not addressed further in this document for the following reasons:

- ***Acutely Hazardous Materials*** (Criterion 3). The DTSC defines acutely and extremely hazardous materials as P-listed wastes in the federal waste classification system. The P-list includes a number of specific chemicals including various pesticides, metals, and PCBs, all with specific concentrations.¹³ None of these materials would be used or would be expected to be encountered on a widespread basis during construction or operation of the Project. Therefore, there would be no impact relative to sensitive receptors and this criterion is not discussed further.
- ***Schools*** (Criterion 4). There are no schools within one-quarter mile of the Project site. Therefore, there would be no impact relative to schools and this criterion is not discussed further.
- ***Airports Hazard/Safety*** (Criteria 7 and 8). The Project site is not located within two miles of an airport. Therefore, no impact is associated with airports.
- ***Wildland Fires*** (Criterion 10). See Section 4.17, *Effects Found Not to Be Significant*.

¹³ P list waste are identified at <https://www.epa.gov/hw/defining-hazardous-waste-listed-characteristic-and-mixed-radiological-wastes#PandU>.

4.8.4 Impacts of the Project

Hazardous Materials

Impact HAZ-1: The Project would not create a significant hazard to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials. (Criteria 1 and 2) (*Less than Significant with Mitigation*)

Construction Impacts

Phase 1 and Buildout – Construction

During the construction phase, Project construction equipment and materials would include fuels, oils and lubricants, solvents and cleaners, cements and adhesives, paints and thinners, degreasers, cement and concrete, and asphalt mixtures, which are all commonly used in construction. The routine use or an accidental spill of hazardous materials used in construction could result in inadvertent releases, which could adversely affect construction workers, the public, and the environment. The potential impacts from encountering hazardous materials associated with encountering contamination from prior uses (e.g., contaminated soil or groundwater, hazardous building materials) during construction are analyzed further below in Impact HAZ-2.

Construction activities would be required to comply with the numerous federal, State, and Port hazardous materials regulations, summarized in Section 4.8.2, *Regulatory Setting*, designed to ensure that hazardous materials are transported, used, stored, and disposed of in a safe manner to protect worker safety, and to reduce the potential for a release of construction-related fuels or other hazardous materials into the environment, including stormwater and downstream receiving water bodies, including San Francisco Bay. Contractors would be required to prepare and implement Hazardous Materials Business Plans (HMBPs) that would require that hazardous materials used for construction would be used properly and stored in appropriate containers with secondary containment, as needed, to contain a potential release. The California Fire Code would also require measures for the safe storage and handling of hazardous materials.

As discussed in Section 4.6, *Geology, Soils, and Paleontological Resources*, and Section 4.9, *Hydrology and Water Quality*, construction contractors would be required to prepare an SWPPP for construction activities according to the National Pollutant Discharge Elimination System (NPDES) General Construction Permit requirements. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, equipment and fuel storage; protocols for responding immediately to spills; and describe BMPs for controlling site run-on and runoff.

In addition, the transportation of hazardous materials would be regulated by the U.S. Department of Transportation (USDOT), Caltrans, and the California Highway Patrol (CHP). Together, federal and State agencies determine driver-training requirements, load labeling procedures, and container specifications designed to minimize the risk of an accidental release.

Finally, in the event of a spill that releases hazardous materials at the project component sites, a coordinated response would occur at the federal, State, and local levels, including the City of Oakland. The Oakland Fire Department is the local hazardous materials response team. In the

event of a hazardous materials spill, the Oakland Police and Fire departments would be simultaneously notified and sent to the scene to respond to and assess the situation.

The required compliance with the numerous laws and regulations discussed above that govern the transportation, use, handling, and disposal of hazardous materials would limit the potential for creation of hazardous conditions due to the use or accidental release of hazardous materials, and would render this impact less than significant.

Operational Impacts

Phase 1 and Buildout – Operations

The proposed ballpark, and residential, office, retail, cultural and civic uses would use and store chemicals associated with their particular use that would include fuels, oils and lubricants, solvents and cleaners, and paints and thinners, which are all commonly used in the proposed land uses. The routine use or an accidental spill of hazardous materials could result in inadvertent releases, which could adversely affect workers, the public, and the environment.

As required by the State Hazardous Materials Management Program (Hazardous Materials Business Plan; HMBP discussed above), the ballpark operations, commercial uses, and residential property management companies would be required to prepare and submit HMBPs to the ACDEH, the local CUPA within the City of Oakland prior to the start of operations for each facility. The HMBPs are required to include information on hazardous material handling and storage, including site layout, storage in appropriate containers with secondary containment to contain a potential release, and emergency response and notification procedures in the event of a spill or release. In addition, the HMBPs require annual employee health and safety training. The HMBPs must be approved by the CUPA prior to commencement of operations and the various facilities would be subject to periodic compliance inspections. The HMBPs would also provide the local agencies with the information they need to plan appropriately for a chemical release, fire, or other incident, which would reduce the potential for an accidental release to cause harmful health effects to workers or the public or substantial degradation of the environment. All hazardous materials are required to be stored and handled according to manufacturer's directions and local, State and federal regulations. The California Fire Code would also require measures for the safe storage and handling of hazardous materials.

Transportation and disposal of wastes, such as spent cleaning solutions, would also be subject to regulations for the safe handling, transportation, and disposal that would include appropriate containerization and labeling, transportation by licensed hazardous materials haulers, and disposal at licensed facilities permitted to accept the waste.

Finally, the facilities proposed under the Project would be required to comply with the municipal stormwater permit for municipal separate storm sewer systems (MS4) development standards, as discussed in Section 4.9, *Hydrology and Water Quality*, which would reduce pollutants and runoff flows from new development and redevelopment using BMPs and Low Impact Development (LID)/post-construction standards. **Mitigation Measure HYD-1b: NPDES Stormwater Requirements**, would ensure that the Project would comply with the requirements of the City's MRP Permit for post-construction stormwater management on the Project site.

The required compliance with Mitigation Measure HYD-1b and the numerous laws and regulations discussed above that govern the transportation, use, handling, and disposal of hazardous materials would limit the potential for creation of hazardous conditions due to the use or accidental release of hazardous materials, and would render this impact less than significant.

Mitigation Measure HYD-1b: NPDES Stormwater Requirements. (See Section 4.9, *Hydrology and Water Quality*)

Significance after Mitigation: Less than Significant.

Listed Hazardous Materials Site

Impact HAZ-2: The Project is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (i.e., the “Cortese List”) and could create a significant hazard to the public or the environment. (Criterion 5) (Less than Significant with Mitigation)

Construction Impacts

Phase 1 and Buildout – Construction

As discussed above in Section 4.8.1, *Environmental Setting*, the Project site is a listed hazardous materials site. The Project site is currently capped, preventing contact with the underlying contaminants in fill, soil, and groundwater. Project construction would remove all of the existing cap on the Project site as construction proceeds with the exception of a portion of the Peaker Power Plant site, where the existing cap would be retained in place, pending future plans for the Peaker Power Plant. Depending on the specific proposed land use and location of the use within the Project site, some areas would have a new hardscape cap installed, some areas may have an engineered equivalent installed, and some areas may not require a cap, as described further below. Subsurface Project construction activities would also include installation of piers, construction of building foundations, and installation of subsurface utilities. Certain subsurface construction would also require temporary dewatering. If proper engineering and institutional controls and BMPs are not implemented during construction, such activities could expose construction workers and the environment to underlying contaminated fill, soil, soil vapor, and/or groundwater.

In addition, most existing structures and all buildings present on the Howard Terminal portion of the Project site would be removed (except for the shipping container cranes, which may be retained, and the existing Fire Station 2 in the far eastern corner of the Howard Terminal portion of the project site that will be retained). Given the pre-1980s age of some of the structures, the structures may include hazardous building materials, such as asbestos-containing materials (ACM) and/or lead-based paint (LBP). Construction workers removing these structures could be exposed to the hazardous building materials.

As discussed above in Impact HAZ-1, construction activities would be required to comply with numerous hazardous materials regulations designed to ensure the proper transportation, use, storage, and disposal of hazardous materials in a safe manner to protect worker safety and the environment, including encountering hazardous building materials and hazardous waste.

In particular, as described above in Section 4.8.2, *Regulatory Setting, Land Use Covenants*, the Project site is subject to existing LUCs, with their associated plans (O&M Agreements, SGMPs, and RMPs) enforced by the DTSC. These LUCs and their associated plans (RMPs, O&M Agreements, and SGMPs) are expected to be replaced and consolidated before commencement of construction to account for the changes to the Project site. The substantive requirements of these replacement documents would be similar to those in the existing documents, but would be specifically tailored to ensure protections appropriate for the type of anticipated construction activity and the type of anticipated uses, including allowing residential use (which is currently prohibited) under specified conditions. The existing LUCs and associated plans include the specific requirements listed below for activities that would disturb the cap and contaminated materials beneath the cap (and as discussed in Section 4.8.2, the replacement documents are expected to include similar requirements, specifically tailored to the changes to the Project site). It is assumed that the new consolidated LUCs and associated plans and agreements would be similar.

- The Project site shall be used and developed in a way that preserves the integrity of the cap installed on the Project site. The capped soil shall not be disturbed without revised LUCs, associated plans, and Health and Safety Plans submitted to the DTSC for review and approval. This means that the cap could be removed and restored with other types of engineering controls with DTSC approval, so long as the public and the environment are protected from underlying contaminated materials.
- The Owner shall provide the DTSC written notice at least thirty (30) days prior to any activities which will disturb the cap and underlying soils.
- The owner shall inspect and maintain improvements constructed on the Project site as provided in the plans.
- The Owner shall not extract the groundwater for purposes other than Project site remediation or construction dewatering.

The plans would specify how the construction contractor(s) would remove, handle, transport, and dispose of all excavated materials in a safe, appropriate, and lawful manner. The plans required by the existing LUCs evaluate the effectiveness of the selected remedy (monitored natural attenuation in conjunction with the LUCs and associated plans and engineering controls, which includes caps or engineered equivalents). Details of the existing LUCs and their associated plans are described above in Section 4.8.2, *Regulatory Setting*.

As previously noted, the cap may be replaced with a new hardscape (asphalt or concrete) cap, consistent with the existing cap. Concrete foundations of buildings and other structures would serve as hardscape cap with DTSC approval. In addition, the cap may be replaced with an engineered equivalent that maintains preventing exposure of the public or the environment to the underlying contaminated materials, again with DTSC approval. For example, in some areas, the cap could be replaced with fill or a drainage system and fill. This engineered equivalent would prevent public exposure to the contaminated materials by adding fill and would prevent rainfall and landscape water from infiltrating into the underlying materials and mobilizing contaminants through the installation of a drainage system. In addition, if areas are identified that have no underlying contaminated materials or an acceptable risk management designation, the DTSC may approve not installing a cap or engineered equivalent in those areas. Note that all changes will require DTSC

approval, either through compliance with protocols and requirements for preapproved activities set forth in the expected new LUCs and associated plans, or through activity-specific approvals from DTSC pursuant to procedures expected to be established in the LUCs and O&M Agreements. Finally, as discussed in Section 4.9, *Hydrology and Water Quality*, several feet of fill would be added to the Project site to address sea level rise, which would further isolate any underlying contaminated materials. Note that DTSC approval will be required for the changes.

As discussed above in Impact HAZ-1, construction contractors would be required to prepare a SWPPP in compliance with the State General Construction Permit that would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, equipment and fuel storage; protocols for responding immediately to spills; and describe BMPs for controlling site runoff. In addition, given the presence of chemicals above regulatory standards in fill, soil, and groundwater, and the presence of free-phase petroleum hydrocarbons on groundwater, contractors should anticipate and plan that some of the excavated materials and dewatering fluids will require handling and disposal as hazardous waste.

Additionally, **Mitigation Measure HYD-1a, Creek Protection Plan**, would require the Project to comply with the provisions of the City's Creek Protection Ordinance, and prepare a Creek Protection Plan, including erosion and sedimentation control measures during construction, which would further reduce potential discharges of hazardous materials into waterways.

The required compliance with the numerous laws and regulations, and in particular with the requirements of the consolidated RAW, LUCs, and associated plans and agreements described above, would control and manage those hazardous materials, and would render this impact less than significant. However, because details of the consolidated RAW, LUCs, and associated plans are not known at this time, **Mitigation Measures HAZ-1a** through **HAZ-1d** are provided below to ensure that with regulatory requirements and review and approval by DTSC, redevelopment and use of the Project site occurs in a manner that is protective of construction workers, the public, future users and residents of the Project site, and the environment.

Operational Impacts

Phase 1 and Buildout – Operations

Once constructed, the maintenance of the cap and engineering equivalent controls would prevent the public and workers at the ballpark, commercial outlets, and residences from encountering the hazardous materials beneath the cap and its engineered equivalents. In addition, as discussed above, the cap and engineering equivalents would prevent or control the infiltration of rainwater and landscape water from infiltrating down into the contaminated materials, and vapor barriers and/or vapor intrusion management systems (VIMS) would prevent indoor vapor intrusion. As required by the previously-described LUCs and associated plans and agreements required by Mitigation Measures HAZ-1a and HAZ-1b, the cap and engineered equivalents would be periodically inspected, maintenance conducted as needed, and disturbance of the cap and engineered equivalents prohibited without DTSC approval. If alternate engineering equivalents are implemented with DTSC approval, routine inspections and maintenance activities would still

be required under the previously described LUCs and their associated plans and agreements, revised as needed.

Mitigation Measures

Required compliance with the numerous laws and regulations previously discussed, and in particular with the requirements of the proposed (consolidated) RAW, LUCs, and associated plans and agreements described above, would prevent contact with the buried hazardous materials, and would render this impact less than significant. However, because details of the consolidated RAW, LUCs, and associated plans are not known at this time, mitigation measures are provided below to ensure that with regulatory requirements and oversight by DTSC, redevelopment and use of the Project site occurs in a manner that is protective of construction workers, the public, future users and residents of the Project site, and the environment.

Mitigation Measure HAZ-1a: Preparation and Approval of Consolidated RAW, LUCs and Associated Plans.

Prior to Project-related grading or construction onsite, the project sponsor shall prepare a consolidated RAW, LUCs, and associated plans, all of which shall be submitted to the DTSC for review and approval. The project sponsor shall provide the chief building official with documentation of DTSC's approval prior to issuance of a grading, excavation, and/or construction permits on the project site. The consolidated RAW, LUCs, and associated governing plans shall include the following:

1. A ***Remedial Action Workplan (RAW)*** shall be prepared in compliance with established US EPA and DTSC guidelines, specifically tailored to ensure protections appropriate for the Project's anticipated construction activity and land uses, including allowing residential use under specified conditions. The RAW shall identify and address potential impacts of the remediation activities themselves. The RAW shall:
 - a. Identify known areas with soil, soil gas, and/or groundwater with COC concentrations above the Target Cleanup Levels developed in the previously described Risk Assessment.
 - b. Describe specific remedial methods to be applied to each of the contaminated media and areas.
 - c. Describe procedures for the excavation, treatment, stockpiling, containerization, transportation, and disposal of contaminated media, including soil and dewatering effluent. Offsite disposal of contaminated materials shall be conducted by licensed hazardous waste transporters and offsite disposal facilities shall be licensed facilities permitted to accept the waste materials.
 - d. For those areas and media where removal or treatment is proposed, describe sampling and analytical methods to verify that contaminated materials have been removed or treated such that the numerical cleanup levels have been achieved.
 - e. Describe vapor intrusion barriers and other required remedies for those areas that will require inhalation protection (e.g., ground floor residential areas).
 - f. Describe cap restoration actions for those areas that will require a cap or engineered equivalent. The cap may consist of asphalt or concrete hardscape.

Engineered equivalents may include the addition of sufficient fill and/or engineered drainage to isolate the public and the environment from underlying contaminants.

2. Separate but similar *LUCs* shall be prepared for the A's and Port portions of the project site. The *LUCs* shall describe prohibited land uses (e.g., hospital), prohibited activities (e.g., disturbance of the cap or engineered equivalent without the approval of the DTSC), and notification and reporting requirements for activities that disturb areas with a cap or engineered equivalent.
3. An *Operations and Maintenance (O&M) Plan* shall be prepared describing long-term groundwater monitoring and cap maintenance procedures. The *O&M Plan* shall govern the ongoing operations and maintenance and shall include procedures describing how soil and groundwater shall be managed during future maintenance activities, utility installations, and other activities. The *O&M Plans* shall require annual groundwater monitoring programs, annual and five-year reporting obligations, health and safety plans, notification requirements, cap maintenance obligations. For certain construction projects raising unique issues, project specific soil and groundwater management plans shall be submitted to the DTSC for their approval before work can begin. The *O&M Plan* shall describe operations for the seasonal drainage of rainwater and the as-needed drainage of groundwater for the area within the cutoff wall beneath the ballpark.

Mitigation Measure HAZ-1b: Compliance with Approved RAW, LUCs and Associated Plans.

Prior to issuance of any grading, building, or construction permit for the Project, the Project sponsor shall provide evidence to the chief building official of DTSC concurrence that the proposed action is consistent with the RAW, LUCs, and Associated Plans adopted to ensure protections appropriate for the type of anticipated construction activity. Prior to issuance of a certificate of occupancy or similar operating permit for new buildings and uses by the chief building official, the Project sponsor shall provide evidence of successful implementation of protective measures to ensure protections appropriate for the type of anticipated uses, including allowing residential use under specified conditions, in the form of a certificate of completion, finding of suitability for the project's intended use, or similar documentation issued by the DTSC.

Mitigation Measure HAZ-1c: Health and Safety Plan.

Prior to issuance of building, construction, or grading permits, the Project sponsor and its contractors shall prepare and implement Health and Safety Plans (HASPs) for the protection of workers, the public, and the environment. The HASPs shall be prepared by a California licensed professional of applicable expertise (e.g., certified industrial hygienist, professional engineer, professional geologist). The HASPs shall include measures consistent with customary protocols and applicable regulations (including, but not limited to Title 8 of the California Code of Regulations) for the protection of workers, site users, the public, and the environment. The HASPs shall include procedures for the management of impacted soil; use of personal protective equipment; management, use and or treatment of water associated with construction activities; and dust mitigation). In addition, the HASPs shall include procedures to address the discovery of any suspect soils (e.g., chemical odor and/or discoloration) during construction activities, including notification and the investigation, removal, and disposal of soils as appropriate under

DTSC directives and local, State, and federal regulations). The HASPs shall be submitted to the chief building official prior to the commencement of construction activities.

Mitigation Measure HAZ-1d: Hazardous Building Materials.

Numerous existing regulations require that demolition and renovation activities that may disturb or require the removal of materials that consist of, contain, or are coated with hazardous building materials, such as ACM and/or LBP, must be inspected and/or tested for the presence of such hazardous materials. If present, the hazardous materials must be managed and disposed of in accordance with applicable laws and regulations. The identification, removal, and disposal for ACM is regulated under CCR Title 8, Division 1, Chapter 4, Article 4, Sections 1529 and 5208. The identification, removal, and disposal for LBP is regulated under CCR Title 8, Division 1, Chapter 4, Article 4, Section 1532.1. All work must be conducted by a State-certified professional, which would ensure compliance with all applicable regulations. If ACM and/or LBP are determined to exist on-site, a site-specific hazard control plan must be prepared detailing removal methods and specific instructions for providing protective clothing and equipment for abatement personnel. A State-certified ACM and/or a LBP removal contractor shall be retained to conduct the appropriate abatement measures as required by the plan. Wastes from abatement and demolition activities shall be transported and disposed of at a landfill permitted to accept such waste and in compliance with applicable local, State, and federal laws and regulations. Once all abatement measures have been implemented, the contractor shall conduct a clearance examination and provide written documentation to the local Bay Area Air Quality Management District that ACM and LBP testing and abatement have been completed in accordance with all federal, State, and local laws and regulations. Upon acceptance by the Bay Area Air Quality Management District that abatement activities have been completed, the acceptance documentation shall be provided to the chief building official prior to the issuance of a demolition permit or (in the case of a building renovation) a certificate of occupancy or similar operating permit.

Mitigation Measure HYD-1a: Creek Protection Plan. (See Section 4.9, *Hydrology and Water Quality*)

Significance after Mitigation: Less than Significant.

Emergency Access and Emergency Response Plan or Emergency Evacuation Plan

Impact HAZ-3: The Project would provide adequate emergency access but could fundamentally impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Criteria 6 and 9) (*Less than Significant with Mitigation*)

Construction Impacts

Phase 1 and Buildout – Construction

During the construction phase, the great majority of construction activities would occur within the Project site, with the exception of certain offsite transportation, public amenity, and utility improvements on nearby streets. Construction equipment and materials would enter and exit the Project site through existing roadways. The temporary increases in construction traffic and

potential temporary closures of nearby roads could interfere with emergency vehicle access in the Project vicinity.

As discussed in Section 4.15, *Transportation and Circulation*, **Mitigation Measure TRANS-4, Construction Management Plan**, would require the preparation and implementation of a construction traffic plan, which would manage the movement of vehicles, including those transporting hazardous materials, on roads. With the implementation of the required construction traffic plan, the volume and timing of construction traffic would be managed so as not to adversely affect the level of service on nearby roads and the impact relative to emergency response or evacuation plans would be less than significant.

Operational Impacts

Phase 1 and Buildout – Operations

The proposed Project uses would increase the daily population at the Project site, including from increases in employees and patrons of games and events at the proposed ballpark, as well as increases in daily employment and visitors of the proposed office, retail, cultural and civic uses; and would also create a permanent residential population associated with the proposed onsite residential uses. Adequate emergency response and evacuation plans would be needed to serve the Project in the event of a large natural or manmade emergency.

As discussed in the Section 4.8.2, *Regulatory Setting*, Alameda County adopted the Emergency Operations Plan, an extension of the State's California Emergency Plan, which includes the City of Oakland. Under this plan, the County has established policies and procedures to respond to a variety of emergencies. In addition, the County participates in the Association of Bay Area Governments Local Hazard Mitigation Plan, *Taming Natural Disasters*. The plans have established policies and procedures to respond to earthquakes, fires, extreme weather, public health emergency, technological and resource emergency, hazardous material incidents, terrorism, floods and landslides.

With regard to emergency vehicle access, the existing Fire Station 2 located at 47 Clay Street within the Project site will continue to operate at 47 Clay Street. Given that this fire station is located within the Project site, the response time for fire services would be minimal and there would be no access limitations. In addition, the Project site would have emergency access routes from the east via Embarcadero West and Water Street and from the north via Market Street and Martin Luther King Jr. Way. However, since at-grade railroad tracks, utilized by UPRR and Capitol Corridor, run within the Embarcadero West right-of-way immediately north of the Project site and cross both Market Street and Martin Luther King Jr. Way, there is potential for the latter two routes to be blocked by rail traffic during an emergency. As described in Chapter 3, *Project Description*, an additional EVA on the west side of the Project site would be constructed on an alignment to be determined by the Port that connects the west end of Embarcadero West to Middle Harbor Road. Middle Harbor Road connects to Adeline Street, which contains an above-grade rail overpass. This EVA would be made available to police, fire, ambulance and other emergency service providers only for the purpose of responding to an emergency on the Project site when other means of access to and from the area are unavailable or sub-optimal. In the event of a major/mass casualty event (e.g. a major earthquake), if needed to safely evacuate the

ballpark, the EVA may also be used for general egress as directed by on site fire/police personnel. While the EVA would cross the “Roundhouse” railroad spur, this spur is off the mainline and used less frequently. Emergency vehicle access via Water Street and the eastbound side of Embarcadero West would remain available in the unlikely event that, during an emergency, rail traffic utilizing the “Roundhouse” spur blocks the Middle Harbor EVA at the same time that rail traffic on the UPRR main line in Embarcadero West separately blocks access via Market and Martin Luther King Jr. Way.

As discussed in Section 4.13, *Public Services*, new development within the Project site would be reviewed by the Oakland Fire Department to ensure the provision of adequate emergency access ways within the Project site for emergency vehicles. In addition, as discussed in Section 4.15, *Transportation and Circulation*, which addresses conflicts with plan and policies addressing safety of the circulation system, including transit, roadways, railroad, bicycle, and pedestrian facilities, the proposed Project would include a program to manage traffic and minimize congestion within and surrounding the Project site including, but not limited to, construction activities and games and events at the proposed ballpark.

Major League Baseball requires all teams to prepare and implement an emergency response plan in accordance with the Major League Baseball Best Stadium Operating Practices and establish procedures for the safe evacuation of the ballpark during an emergency. While specific security requirements and features are kept confidential, they generally:

- Aid in the planning and implementation of security and emergency response plans, processes, and procedures at MLB stadiums;
- Outline the creation of a crisis management team and a threat response protocol/risk assessment protocol;
- Outline club security policies relating to security deployment, training, and responses to specific risks and incidents;
- Provide guidance for establishing effective patron screening, bag checking, and perimeter security; and
- Establish a management plan for critical stadium infrastructure, such as HVAC and gas lines.

Finally, the State Fire Code, Chapter 10, *Means of Egress*, requires that all habitable structures, including residential, commercial, and the ballpark, comply with all relevant sections of the Fire Code, which includes designing structures to enable ingress and egress during emergencies such as fires and other emergencies. The code includes designing for ingress and egress, emergency escape routes, exit design requirements, and lighting.

The proposed development and existing emergency response requirements are sufficient to ensure that possible impairment or implementation of any emergency response or evacuation plans would be considered a less-than-significant impact for operations.

Mitigation Measure TRANS-4: Construction Management Plan. (See Section 4.15, *Transportation and Circulation*.)

Maritime Reservation Scenario

Under the Maritime Reservation Scenario, the Port of Oakland may retain up to approximately 10 acres at the southwest corner of the Project site to accommodate future expansion of a turning basin that is used to turn large vessels accessing berths in Oakland's Inner Harbor. If this option is exercised, that portion of the proposed Project site would not be developed, and the Project site boundary would change and the Project site area would become smaller. However, all site conditions relative to hazards and hazardous materials would remain the same as described for the proposed Project, and therefore the impacts and analysis for the Maritime Reservation Scenario would be the same as those discussed above for the proposed Project. As discussed earlier, environmental remediation and/or mitigation, and grading improvements proposed as part of the Project may be phased, and they are unlikely to occur on any part of the site affected by the Maritime Reservation Scenario until a decision is made regarding the need for and size of an expanded turning basin. If and when a decision is made to expand the turning basin, the Port could proceed with remediation and/or mitigation of the affected portion of the property as part of a separate project. The impacts from the construction of an expanded turning basin would be analyzed by the Port of Oakland under a separate CEQA document.

4.8.5 Cumulative Impacts

Impact HAZ-1.CU: The Project, combined with cumulative development in the Project vicinity, could result in significant cumulative impacts relative to hazards and hazardous materials. (*Less than Significant with Mitigation*)

Geographic Context

The geographic area affected by the Project and its potential to contribute to cumulative impacts varies based on the environmental resource under consideration. The geographic scope of analysis for cumulative hazards and hazardous materials impacts encompasses and is limited to the Project site and its immediately adjacent area, including the harbor adjacent to the Project site. This is because impacts relative to hazards and hazardous materials are generally site-specific and depend on the nature and extent of the hazardous materials release, and existing and future soil and groundwater conditions. For example, hazardous materials incidents tend to be limited to a smaller more localized area surrounding the immediate spill location and extent of the release, and could only be cumulative if two or more hazardous materials releases spatially overlapped.

The timeframe during which proposed Project could contribute to cumulative hazards and hazardous materials effects includes the construction and operations phases. For the Project, the operations phase is permanent. However, similar to the geographic limitations discussed above, it should be noted that impacts relative to hazardous materials are generally location- and time-specific. Hazardous materials events could only be cumulative if two or more hazardous materials releases occurred over the same time period before cleanup is completed, as well as overlapping the same location.

This section presents an analysis of the cumulative effects of the Project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively

considerable impacts. Cumulative projects are listed and described in Section 4.0 and **Appendix DEV**, *Oakland Major Development Projects List – March 2019*.

Cumulative Impacts during Project Construction

Significant cumulative impacts related to hazards and hazardous materials could occur if the incremental impacts of the Project combined with the incremental impacts of one or more cumulative projects to substantially increase risk that people or the environment would be exposed to hazards and hazardous materials. However, cumulative projects would be subject to the same regulatory requirements discussed for the Project, including the implementation of health and safety plans and soil management plans, as needed. That is, cumulative projects involving releases of or encountering hazardous materials also would be required to remediate their respective sites to the same established regulatory standards. This would be the case regardless of the number, frequency, or size of the release(s), or the residual amount of chemicals present in the soil from previous spills. While it is possible that the Project and cumulative projects could result in releases of hazardous materials at the same time and in overlapping locations, the responsible party associated with each spill would be required to remediate site conditions to the same established regulatory standards.

Known nearby hazardous materials sites under investigation for spills and releases are discussed above in Section 4.8.1, *Environmental Setting, Nearby Hazardous Materials Sites*, and shown on Figure 4.8-5. None of the other nearby hazardous materials sites have affected soils or groundwater at the Project site.

Mitigation Measures HAZ-1a through HAZ-1d, and HYD-1a would ensure that with regulatory requirements and review and approval by DTSC, redevelopment and use of the Project site occurs in a manner that is protective of construction workers, the public, future users and residents of the Project site, and the environment. The residual less-than-significant effects of the Project that would remain after mitigation, remediation and compliance with regulatory requirements would not combine with the potential residual effects of cumulative projects to cause a potential significant cumulative impact because residual impacts would be highly site-specific, and in the case of the proposed Project, are and will be either removed or encapsulated at the Project site. In addition, the available information indicates that the various nearby hazardous materials sites identified above are not known to overlap the Project site, and therefore cannot combine impacts. Finally, as discussed in the Environmental Setting, groundwater monitoring results verify that the contamination encapsulated at the Project site is not migrating offsite. Accordingly, no significant cumulative impact with respect to the use or release of hazardous materials would result. For the above reasons, the combined effects of the construction of the Project in combination with cumulative projects would not have a cumulatively considerable contribution to a cumulative impact.

Mitigation Measure TRANS-4 would require implementation of a construction management plan for the Project, which would ensure the provision of adequate emergency access during construction. Similarly, other cumulative construction projects would be required to provide appropriate traffic control and emergency access for their projects. Note that cumulative projects would be required by the City of Oakland to comply with Standard Conditions of Approval (SCA) SCA-TRANS-2: *Construction Activity in the Public Right-of-Way*, which would prevent a cumulative impact to emergency vehicle access from occurring due to temporary road closures

associated with construction activities. No significant cumulative impact related to hazards and hazardous materials is identified during construction of the Project. For the above reasons, the combined effects of the construction of the Project in combination with cumulative projects would not have a cumulatively considerable contribution to a cumulative impact.

Cumulative Impacts during Project Operations

Significant cumulative impacts related to operational hazards could occur if the incremental impacts of the project combined with those of one or more cumulative projects were to cause a substantial increase in risk that people or the environment would be exposed to hazardous materials used or encountered during the operations phase.

Similar to hazardous materials during construction, compliance with the laws and regulations regarding the safe transport, use, storage, and disposal of hazardous materials, as well as Mitigation Measure HYD-1b would reduce the Project-specific incremental impact to a less-than-significant level under Impact HAZ-1. Similar to the Project, the cumulative project components involving the handling, storage, and disposal of hazardous materials would also be required to prepare and implement a HMBPs and comply with the same applicable laws and regulations, including those governing containment, site layout, and emergency response and notification procedures in the event of a spill or release. Transportation and disposal of wastes, such as spent cleaning solutions, would also be subject to regulations for the safe handling, transportation, and disposal of chemicals and wastes. As noted previously, such regulations include standards to which parties responsible for hazardous materials releases must return spill sites, regardless of location, frequency, or size of release, or existing background contaminant concentrations to their original conditions and in compliance with existing regulations. Therefore, compliance with existing laws and regulations regarding hazardous materials would reduce the risk of environmental or human exposure to such materials.

As discussed under Impact HAZ-2, once constructed, the maintenance of the cap and engineering equivalent controls would prevent the public and workers at the ballpark, commercial outlets, and residences from encountering the hazardous materials beneath the cap and its engineered equivalents, as required by the previously-described LUCs and associated plans and agreements required by Mitigation Measures HAZ-1a and HAZ-1b. Similar to construction, the residual less-than-significant effects of the Project that would remain after mitigation, remediation and compliance with regulatory requirements would not combine with the potential residual effects of cumulative projects to cause a potential significant cumulative impact because residual impacts would be highly site-specific, and in the case of the proposed Project, are and will be either removed or capped (i.e., encapsulated) at the Project site. In addition, the available information indicates that the various nearby hazardous materials sites identified above are not known to overlap the Project site, and therefore cannot combine impacts. Further, as previously discussed, the Project would have no impact with respect to being located within one-quarter mile of a school or two miles of an airport or airstrip, therefore the proposed Project could not combine with other cumulative projects to result in a cumulative impacts related to these topics. For the above reasons, the combined effects of the Project and cumulative projects would not have a cumulatively considerable contribution to a cumulative impact. No significant cumulative impact is identified.

As discussed in Impact HAZ-3, above, site review required under City regulations for individual building projects and existing emergency response requirements are sufficient to ensure that the Project's effect on potential impairment or implementation of any emergency response or evacuation plans would be considered a less-than-significant impact. Other non-Project cumulative development in the surrounding area could increase the amount of people and structures that could interfere with emergency evacuation or emergency response plan.

As described in the *Regulatory Setting* above, the County OES is the lead agency to support and coordinate emergency response and recovery operations in the County. The OES also participates in the Local Hazard Mitigation Plan and the Alameda County EOP. These regional plans are adaptive to changes in population and provide the inter-agency coordination to ensure that emergency response and evacuation can be effectively coordinated in an emergency. All cumulative projects would be required to comply with the same regulations. Within the City of Oakland, the Project and other cumulative projects would be subject to review by the Oakland Fire Department to ensure the provision of adequate emergency access ways for emergency vehicles. Therefore, the effects of the Project would not combine with other non-Project cumulative development in the surrounding area to become cumulatively considerable.

Mitigation Measure HAZ-1a: Preparation and Approval of Consolidated RAW, LUCs and Associated Plans. (See Impact HAZ-2)

Mitigation Measure HAZ-b: Compliance with Approved RAW, LUCs and Associated Plans. (See Impact HAZ-2)

Mitigation Measure HAZ-1c: Health and Safety Plan. (See Impact HAZ-2)

Mitigation Measure HAZ-1d: Hazardous Building Materials. (See Impact HAZ-2)

Mitigation Measure HYD-1a: Creek Protection Plan. (See Section 4.9, *Hydrology and Water Quality*)

Mitigation Measure HYD-1b: NPDES Stormwater Requirements. (See Section 4.9, *Hydrology and Water Quality*)

Mitigation Measure TRANS-4: Construction Management Plan. (See Section 4.15, *Transportation and Circulation*)

Significance after Mitigation: Less than Significant.

Maritime Reservation Scenario – Cumulative

As described above, under the Maritime Reservation Scenario, approximately 10 acres of the proposed Project site would not be developed. The reconfigured project site boundary would change and the Project site area would become smaller. However, all site conditions relative to hazards and hazardous materials would remain the same as described for the proposed Project,

and therefore the cumulative impacts and analysis for the Maritime Reservation Scenario would be the same as those discussed above for the proposed Project.

As discussed above, environmental remediation and/or mitigation, and grading improvements proposed as part of the Project may be phased, and they are unlikely to occur on any part of the site affected by the Maritime Reservation Scenario until a decision is made regarding the need for and size of an expanded turning basin. If and when a decision is made to expand the turning basin, the Port could proceed with remediation and/or mitigation of the affected portion of the property as part of a separate project. The impacts from the construction of an expanded turning basin would be analyzed by the Port of Oakland under a separate CEQA document, and that project would be subject to the same regulatory requirements as the Project, and would not combine to cause a significant cumulative impact.

4.8.6 References – Hazards and Hazardous Materials

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