



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
1515 CLAY STREET, SUITE 1400
OAKLAND, CA 94612**

DRAFT
INITIAL STUDY

**SOUTH FIELD TANK FARM REMEDIATION PROJECT
OAKLAND, CALIFORNIA**

STATE CLEARINGHOUSE #

January 20, 2011

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS	iii
SUMMARY	1
1.0 INTRODUCTION	4
2.0 PHYSICAL SETTING	5
3.0 BACKGROUND	6
3.1. Known Subsurface Contamination	6
4.0 PROJECT DESCRIPTION	8
4.1. Removal Action Plans.....	8
4.2. Site Cleanup Requirements.....	15
4.3. Self-Monitoring Program.....	15
5.0 PROJECT OBJECTIVES.....	16
6.0 REQUIRED PERMITS	17
7.0 INITIAL STUDY CHECKLIST AND DISCUSSION	18
8.0 REFERENCES	67
9.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED.....	69
10.0 INCORPORATION OF MITIGATION MEASURES INTO THE PROPOSED PROJECT	70
11.0 DETERMINATION OF APPROPRIATE ENVIRONMENTAL DOCUMENT	72

APPENDICES

- A: Greenhouse Gas and Air Quality Calculations
- B: Mitigation Monitoring Reporting Program

FIGURES

- 1: Regional Location
- 2: South Field Tank Farm
- 3: Wetlands Boundaries
- 4: Tank Farm S Anticipated Redevelopment Phases
- 5: Remediation Anticipated Areas for Tank Farm S
- 6: Tank Farm C and Fuel Transfer Station Layout

TABLES

1: Tier 2 Groundwater Cleanup Goals.....8
2: Tier 2 Soil Cleanup Goals9
3: Tier 2 Surface Water Cleanup Goals.....9
4: Estimated Daily Criteria Pollutant Emissions from Construction (Tank Farm S)24
5: Special-Status Animal Species, Potential Occurrence in Project Vicinity.....33
6: Vibration Levels and Abatement Potential of Construction Equipment Vibration.....55

ACRONYMS AND ABBREVIATIONS

AB-32	Assembly Bill 32
ABAG	Association of Bay Area Governments
AST	aboveground storage tank
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit District
Basin	San Francisco Bay Air Basin
BAT	Best Available Technology
Bay	San Francisco Bay
BCDC	Bay Conservation and Development Commission
BCT	Best Conventional Technology
bgs	below ground surface
BMPs	Best Management Practices
BTEX	benzene, toluene, ethylbenzene and xylenes
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
Chevron	Chevron Products Company
CMA	Congestion Management Agency
CMP	congestion management plan
CMP-network	CMP roadway network
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
Construction General Permit	NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002
CWA	Clean Water Act
dBA	A-weighted decibels
EBMUD	East Bay Municipal Utility District
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act

ESLs	environmental screening levels
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Federal Insurance Rate Map
GHGs	Greenhouse gases
IS	Initial Study
Fuel Transfer Station	Kinder Morgan Energy Partners SFPP, L.P. Oakland Airport Transfer Station
KMEP	Kinder Morgan Energy Partners, L.P.
lb/day	pounds per day
Leq	equivalent noise level
LOS	level of service
Master Plan	Oakland International Airport Master Plan
mg/kg	milligrams per kilogram
MNA	monitored natural attenuation
MND	Mitigated Negative Declaration
MTBE	methyl tert-butyl ether
MTS	Metropolitan Transportation System
NAVD88	North American Vertical Datum 1988
NOx	oxides of nitrogen
NPDES	National Pollution Discharge Elimination System
OFFC	Oakland Fuel Facilities Corporation
OIA	Oakland International Airport
Order or SCR	Site Cleanup Requirements
PCB	polychlorinated biphenyls
PM	particulate matter
PM10	respirable particulate matter from exhaust with an aerodynamic resistance diameter of 10 micrometers or less
PM2.5	fine particulate matter from exhaust with an aerodynamic resistance diameter of 2.5 micrometers or less
Port	Port of Oakland
PRB	permeable reactive barrier
PST Tank Farm	Former Humble/PS Trading Inc. Tank Farm
RAP	Remedial Action Plan
Regional Water Board	San Francisco Bay Regional Water Quality Control Board
ROGs	reactive organic gas
RMP	Risk Management Plan

SCR or Order	Site Cleanup Requirements
SFO	San Francisco International Airport
SFTF	South Field Tank Farm
SMP	Self-Monitoring Program
SSC	Species of Special Concern
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
TDM	Travel-Demand Management
Tier 2 cleanup goals	site-specific soil, groundwater, and surface water cleanup goals
TPH	total petroleum hydrocarbons
USFWS	U.S. Fish and Wildlife Service
µg/L	micrograms per liter

SUMMARY

The San Francisco Bay Regional Water Quality Control Board (“Regional Water Board”) has completed the following Initial Study (“IS”) and Proposed Mitigated Negative Declaration for this project in accordance with the requirements of the California Environmental Quality Act (“CEQA”) (California Public Resources Code, Division 13, Section 2100 et seq.) and CEQA Guidelines (Title 14, California Code of Regulations, Chapter 3, Section 15000 et seq.).

Project Title:	South Field Tank Farm Remediation Project, Oakland International Airport, Oakland, California	
Lead Agency’s Name and Address:	San Francisco Bay Regional Water Quality Control Board 1515 Clay Street, Suite 1400 Oakland, California 94612	
Lead Agency Contact:	Max Shahbazian	
State Clearinghouse #:		
Project Sponsors’ Name and Address:	Port of Oakland 530 Water Street Oakland, CA 94612	Oakland Fuel Facilities Corporation 2702 Love Field Drive HDQ 7FM PO Box 36611 Dallas, TX 75235-1611
	Kinder Morgan Energy Partners, L.P. 1100 Town and Country Rd. Orange, CA 92868	Chevron Products Company 145 South State College Boulevard P.O. Box 2292 Brea, CA 92822-2292
Sponsors’ Contact:	Dale Klettke, Port of Oakland	
Project Location:	South Field Tank Farm, Oakland International Airport, Oakland, California	
Assessor’s Parcel No.:	Portion of 0042-4540-002-01	
City of Oakland General Plan Designation:	Industrial/Transportation	
Surrounding Land Uses:		
North:	Oakland International Airport Employee parking and stormwater retention basins.	
South:	Levee and San Francisco Bay.	
East:	Stormwater retention basin.	
West:	Stormwater retention basin.	

The proposed project consists of the adoption of the Regional Water Board Site Cleanup Requirements (“SCR”) and associated Self-Monitoring Program (“SMP”) for four fuel storage and fuel transfer facilities in the South Field Tank Farm (“SFTF”), implementation of the final Remedial Action Plans (“RAPs”), and redevelopment of Tank Farm S into a facility to support airport fueling operations at Oakland International Airport in Oakland, California. The four facilities at the SFTF consist of:

- Tank Farm S
- Tank Farm C

- Former Humble/PS Trading Inc. Tank Farm (“PST Tank Farm”)
- Kinder Morgan Energy Partners SFPP, L.P. Oakland Airport Transfer Station (“Fuel Transfer Station”)

Soil and groundwater at each of the four facilities have been affected by historic releases of petroleum hydrocarbons. The RAPs propose remedies to ensure protection of human health and the environment. These remedies include removal of contaminated source soils and free product (as part of decommissioning and redevelopment of Tank Farm S), operation of a groundwater treatment barrier (Fuel Transfer Station), monitored natural attenuation (“MNA”) (Tank Farm S, Tank Farm C, and Fuel Transfer Station), a contingency for limited enhanced natural attenuation by biosparging/bioventing if necessary (Tank Farm S), engineering controls (e.g., site capping and vapor barriers in areas of impacted soils above established criteria for structures intended for full-time occupancy by commercial workers) for all facilities, and institutional controls (deed restrictions) for all facilities. Site-specific cleanup Tier 2 goals have been developed for soil, groundwater, and surface water and an SMP is proposed to monitor the progress of remedies. The SCR would require implementation of the remedies proposed in the RAPs.

Based on the analysis presented in this IS, the Regional Water Board has determined that this proposed project would not result in significant impacts that cannot be reduced to a less-than-significant level by implementation of the recommended mitigation measures. The project sponsors have agreed to include the recommended mitigation measures into the project design. Therefore, a Mitigated Negative Declaration (“MND”) will be prepared for this proposed project. None of the conditions described in CEQA or the CEQA Guidelines calling for the preparation of an Environmental Impact Report (“EIR”) has occurred.

This IS and proposed MND are available for public review and agency review from: January 20, 2011 to February 20, 2011.

Copies of the IS and proposed MND are available for review at the following locations:

**Oakland Public Library
125 14th Street
Oakland, CA 94612**

**In addition, the IS and proposed MND are available on-line at:
<http://.www.waterboards.ca.gov/sanfranciscobay/pub-notice.htm>**

The Regional Water Board will hold a public meeting on:

**Date: March 9, 2011
Time: 9:00 AM
Place: Auditorium, Elihu Harris State Building
1515 Clay Street, Oakland, CA**

To be considered in the decision-making for this project, comments on the IS and

proposed MND must be received by February 20, 2011 at the following address:

Max Shahbazian, Project Manager
mshahbazian@waterboards.ca.gov
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Late comments will not be accepted into the administrative record unless the Regional Board Chair determines that good cause exists to make an exception and that other interested persons will not be prejudiced as a result.

1.0 INTRODUCTION

Under CEQA, the purpose of an Initial Study is to provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR or MND for the proposed project. The IS process also enables the applicant or the Lead Agency to modify the proposed project to avoid or reduce significant impacts, thereby enabling the project to qualify for a Negative Declaration. The process in which mitigation measures are incorporated into the project, before the Lead Agency's approval, is known as an MND.

The Regional Water Board, as the lead agency under CEQA, is proposing to adopt the Final SCR and associated Self-Monitoring Program ("SMP") for four fuel storage and fuel transfer facilities in the SFTF at the Oakland International Airport ("OIA") in Oakland, California. The SFTF is located at 1 Edward White Way in Oakland (Figures 1 and 2). As a result of the SCR, final remedial action plans ("RAPs") and associated redevelopment would be implemented for each of the four fuel storage and transfer facilities. The four facilities consist of:

- Tank Farm S
- Tank Farm C
- PST Tank Farm
- Fuel Transfer Station

The sponsors of this project consist of the Port of Oakland ("Port"), the owner of the properties, and Kinder Morgan Energy Partners L.P. ("KMEP"), Oakland Fuel Facilities Corporation ("OFFC"), and Chevron Products Company ("Chevron") who are current or former operators of the fuel storage and transfer facilities.

The Port is also a responsible agency under CEQA, since some of the remedial actions proposed in the RAPs and Order would require discretionary permits from the Port.

2.0 PHYSICAL SETTING

The SFTF consists of about seven acres of land in the eastern portion of the OIA. The area was originally submerged in the San Francisco Bay (“Bay”). A perimeter levee was constructed in the mid-1950s to surround that portion of the Bay that was subsequently filled for the South Field of the OIA. The levee is located immediately south of the four SFTF facilities. The top of the levee is paved and is used as an access road (Dike Road on Figure 2). The SFTF area was initially hydraulically filled with materials from the Bay. Fill was subsequently brought onto the SFTF to create pads for the four facilities. The fill, varying in thickness from 5 to more than 10 feet, is underlain by native Bay Mud.

Groundwater is present in the fill as a perched water table and typically occurs from 2 to 7 feet below ground surface (“bgs”). Groundwater from the four SFTF facilities discharges to adjacent stormwater retention basins. Groundwater discharges and stormwater flow westerly toward a channel west of Tank Farm S, where the water flows to a pump station inside the levee and is intermittently pumped over the levee and into the Bay.

Stormwater retention basins are adjacent to the four SFTF facilities. A wetlands delineation by the U.S. Corps of Engineers was updated in 2007 for OIA. The jurisdictional wetlands boundaries at and near the SFTF are shown on Figure 3. Parking lots for OIA employees are located north of Edward White Way. A portion of the Bay Trail is located southwest of the SFTF. The nearest residential area is more than one mile to the east in San Leandro.

3.0 BACKGROUND

Fuel has been stored in aboveground storage tanks (“ASTs”) at the three tank farms since the late 1960s. Fuel for storage in the ASTs has been supplied by the Fuel Transfer Station. The tank farms have supplied fuel to the OIA.

Tank Farm S is currently the only operating tank farm at SFTF. It was constructed in about 1970 and stores and distributes jet A fuel to OIA. The tank farm is planned for decommissioning and redevelopment starting in the beginning of 2011.

Tank Farm C was operational from about 1969 to about 1989. In 2007, the ASTs and associated piping were removed and the tank farm is currently being redeveloped as a modern fuel storage facility, expected to be complete in mid-2011.

PST Tank Farm was in operation from about 1969 to about 1991. In 2001, the ASTs and associated appurtenances were removed; the site is vacant but is used temporarily as a staging area for redevelopment of Tank Farm C and is proposed as staging area for the redevelopment of Tank Farm S.

Fuel Transfer Station has been operating as a fuel transfer station since the 1970s and supplies jet A fuel to Tank Farm S; following decommissioning of Tank Farm S and operation of the newly redeveloped Tank Farm C, the Fuel Transfer Station will supply fuel to the redeveloped Tank Farm C.

Below is a discussion of the known contamination at the four facilities, identified through years of subsurface investigation conducted by the Port and current and former operators of the tank farms and fuel transfer station.

3.1. Known Subsurface Contamination

Numerous subsurface investigations have been conducted by the Port and existing or former operators of the four facilities. The investigations determined the extent of contaminants in soil and groundwater from documented spills of petroleum hydrocarbons. The remedial investigations were conducted in accordance with the requirements of previous Regional Water Board Orders (99-103, R2-2002-0013, and R2-2007-0082). In addition, interim remedial actions were conducted at each facility to reduce the volume of contaminated source materials or limit migration of contaminants.

3.1.1. Tank Farm S

Soil contamination at Tank Farm S consists primarily of jet A fuel (up to 9,480 milligrams per kilogram [mg/kg]), but other fuel components such as benzene, toluene, ethylbenzene and xylenes (“BTEX”); methyl tert-butyl ether (“MTBE”), polynuclear aromatic hydrocarbons; as well as gasoline have also been found in the soil. Dissolved fuel-related compounds were also identified in the groundwater; in October 2009 up to 74,000 micrograms per liter (“µg/L”) of total petroleum hydrocarbons (“TPH”) as jet A fuel were present in the groundwater as well as BTEX, MTBE, and TPH as gasoline. In addition, free product has been observed in certain locations on the tank farm (up to 0.15 feet in October 2009).

An interim remedial action in 2003 consisted of the removal of about 144 cubic yards of contaminated soil and extraction of about 220,000 gallons of contaminated groundwater from 2003 through 2007.

3.1.2. Tank Farm C

Soil contamination on Tank Farm C has consisted primarily of jet A fuel contamination. In 2007, an interim remedial action removed about 2,040 cubic yards of contaminated soil. Residual contamination remains in the excavation area on the tank farm, primarily jet A fuel (up to 1,400 mg/kg) as well as BTEX, TPH as gasoline, and MTBE and outside the excavation area (up to 2,700 mg/kg). Dissolved contaminants have also been identified on this tank farm, especially along the western and southern boundary of the tank farm (up to 97,000 µg/L.)

3.1.3. PST Tank Farm

Soil contamination on the PST Tank Farm consisted of jet A fuel and polychlorinated biphenyls (“PCB”s). An interim remedial action in 2004 resulted in the removal of about 3,600 cubic yards of jet A fuel- and PCB-contaminated soil. Residual contamination in deeper soils remains on this tank farm; jet A fuel (up to 4,600 mg/kg) and PCBs (up to 3.4 mg/kg). Groundwater monitoring has shown that in successive monitoring events, no contaminants are present in the groundwater above environmental screening levels (“ESLs”) developed by the Regional Water Board for the protection of groundwater discharging to estuarine or marine surface waters.

3.1.4. Fuel Transfer Station

Soil contamination has been identified at the Fuel Transfer Station, predominantly in the northern portion of the facility near the border with Tank Farm C. Contaminants of concern include predominantly TPH as jet A fuel (up to 7,600 mg/kg), TPH as gasoline, and MTBE. Dissolved contaminants in groundwater have been identified as primarily TPH as jet A fuel (up to 32,000 µg/L) but TPH as gasoline, BTEX, and MTBE have also been identified.

As an interim remedial action, KMEP installed a permeable reactive barrier (“PRB”) between the Fuel Transfer Station and Tank Farm C to treat groundwater migrating between the Fuel Transfer Station and Tank Farm C. The PRB is 200 feet long and 12 feet deep. It is constructed of impermeable material except for two, 20-foot wide sand-filled reactive sand “gates;” within each reactive sand gate are two biosparge points connected to an air sparge blower. The sand gates thus provide a zone of treatment for groundwater migrating between the Fuel Transfer Station and Tank Farm C.

4.0 PROJECT DESCRIPTION

The proposed project consists of adoption of the SCR and associated SMP, implementation of the RAPs for the four SFTF facilities (“proposed project”) and redevelopment of Tank Farm S into a facility to support airport fueling operations. The purpose of the SCR, SMP, and RAPs is to ensure that known soil and groundwater contamination at the four facilities will be remediated such that public health and the environment are not adversely affected. Below is a discussion of the proposed remedial actions, as described in the RAPs for each facility.

4.1. Removal Action Plans

The four RAPs describe the investigations conducted on each facility and the extent of soil and groundwater contamination. The RAPs also describe the remedial objectives and site-specific cleanup goals. Each RAP then evaluates various alternatives, including the no-action alternative, based on technical feasibility, implementability, and costs. Based on these parameters, each RAP recommends a preferred alternative.

Site-specific cleanup goals were developed for the entire SFTF and pertain to each of the four SFTF facilities during continued fuel storage and transfer operations. The site-specific soil, groundwater, and surface water cleanup goals (“Tier 2 cleanup goals”) (Tables 1, 2, and 3) were developed to ensure that soil and groundwater contamination would not result in effects to adjacent surface waters, although surface waters currently do not exhibit any effects even though remediation has not yet begun.

Table 1: Tier 2 Groundwater Cleanup Goals

Constituent	Cleanup Goal (µg/L)	Basis
TPH as jet A fuel	2,500	Site-specific Tier 2
TPH as gasoline	5,000	Gross contamination ESL
Benzene	284	Site-specific Tier 2
Toluene	400	Gross contamination ESL
Ethylbenzene	300	Gross contamination ESL
Xylenes	5,300	Gross contamination ESL
MTBE	1,800	Gross contamination ESL

Table 2: Tier 2 Soil Cleanup Goals

Constituent	Standard (mg/kg)	Basis
TPH as jet A fuel	2,143	Site-specific Tier 2 for leaching to groundwater
TPH as gasoline	4,286	Site-specific Tier 2 for leaching to groundwater
Benzene	12	Site-specific Tier 2 for leaching to groundwater
Toluene	29	Site-specific Tier 2 for leaching to groundwater
Ethylbenzene	33	Site-specific Tier 2 for leaching to groundwater
Xylenes	583	Site-specific Tier 2 for leaching to groundwater
MTBE	8.4	Site-specific Tier 2 for leaching to groundwater

Table 3: Tier 2 Surface Water Cleanup Goals

Constituent	Standard (µg/L)	Basis
TPH as jet A fuel	640	Protective of saltwater aquatic species and humans in contact with or eating aquatic species
TPH as gasoline	3,700	Protective of saltwater aquatic species and humans in contact with or eating aquatic species
Benzene	71	Protective of saltwater aquatic species and humans in contact with or eating aquatic species
Toluene	5,000	Protective of saltwater aquatic species and humans in contact with or eating aquatic species
Ethylbenzene	86	Protective of saltwater aquatic species and humans in contact with or eating aquatic species
Xylenes	2,200	Protective of saltwater aquatic species and humans in contact with or eating aquatic species
MTBE	8,000	Protective of saltwater aquatic species and humans in contact with or eating aquatic species

Below is a description of the recommended remedial actions for each of the South Field Tank Farm facilities; the recommended remedial action for each of the facilities is evaluated for potential environmental impacts in this IS.

4.1.1. Tank Farm S

At Tank Farm S, the recommended remedial action would be implemented in a phased manner as Tank Farm S is being decommissioned and redeveloped. The recommended remedy would occur both during decommissioning of the tank farm and during redevelopment. Decommissioning would consist of removal of pipelines and ASTs within the tank farm. The decommissioning activities would occur in two phases, as described below.

Redevelopment would consist of construction of a combined truck maintenance facility and office building (Figure 4), creation of parking areas for employee vehicles, repaving of portions of Edward White Way, and placement of asphalt or clean fill over areas exceeding the Tier 1 cleanup goals.

Currently 49 employees work at Tank Farm S (about 44 of these employees are transient at Tank Farm S, since they service aircraft at OIA); at the redeveloped Tank Farm S and Tank Farm C, 9 employees would work at Tank Farm C and 41 employees would be associated with Tank Farm S (a net increase of one employee). The proposed Tank Farm S remediation would consist of the following elements:

Free Product Recovery at OB-15 Location (upon Approval and Finalization of the RAP)

One permanent free product recovery well would be installed in an area where free product was identified during the remedial investigation in 2009 (Figure 5). Free product would be monitored on a regular basis and removed, as necessary, by a vacuum truck and the extracted fluids would be treated on-site in an oil-water separator. The petroleum would be hauled offsite for resale as fuel and the water would be treated prior to discharge under permit to the sanitary sewer.

Groundwater and Surface Water Monitoring West of Tank Farm S (Late 2010 and On-going)

One groundwater monitoring well and three surface water monitoring points would be installed west of Tank Farm S. The purpose of these monitoring points is to verify that water quality west of the tank farm is not affected by any contaminants potentially migrating from the tank farm toward the surface water west of Tank Farm S.

Soil Excavation during Pipeline Removals and AST Decommissioning in AST Secondary Containment Area (Mid 2011 to Late 2011); New Building (Late 2011 to Late 2012) – PHASE 1

Existing above- and belowground pipelines and ASTs would be removed within the existing AST containment area (Figure 5). The pipelines would be transported off-site for recycling, either as scrap metal or reconditioning and the ASTs would also be transported off-site for recycling. Any water generated during decommissioning activities (i.e., cleaning of ASTs) and shown to be impacted would be either treated on-site prior to discharge to the sanitary sewer or hauled off-site for permitted disposal or recycling.

Impacted soil surrounding the pipelines would be excavated as well as additional soil in areas of known soil contamination exceeding the site-specific soil cleanup goal. About 3,300 tons of soil are estimated to be excavated during this soil excavation phase. In the areas of known soil contamination, the soil would be excavated to a depth of about 7 feet bgs (which is the approximate interface between artificial fill and underlying native Young Bay Mud). It is estimated that about 2,400 tons of the excavated soil might be available for reuse on the tank farm and about 900 tons would be transported off-site for disposal. Determination of whether soil can be reused would occur after characterization; only soils that do not exceed the Tier 2 cleanup goals would be available for on-site reuse.

The soil would be excavated by excavators and either loaded directly onto trucks for off-site disposal or stockpiled on-site for further characterization prior to off-site transport or reuse on-site. Depending on the quality of the excavated soil, the soil would either be hauled to the Port's Materials Management Program site at Ron Cowen Parkway (if acceptable to the Port), west of OIA, for future reuse or to a commercial permitted landfill. If the excavated soils were transported to a commercial permitted landfill, the trucks would travel along Neil Armstrong Way to Airport Drive to 98th Avenue to access I-880 to reach landfills in Contra Costa or Alameda counties.

Portions of Edward White Way would also be demolished and subsequently repaved (Figure 4). Redevelopment of Edward White Way would be coordinated with the Port of Oakland and City of Oakland Fire Department to ensure access to Tank Farm C.

An estimated six workers would routinely be engaged in decommissioning of the ASTs, removal of pipelines and excavation activities, but the number of workers could reach a maximum of 30 for shorter durations. Construction of the new administration and maintenance building could involve up to 100 workers during short-term peak periods, with an average of 40 workers for one year.

As part of AST and pipeline removals within the AST containment area, two existing monitoring wells would be destroyed prior to demolition and two replacement monitoring wells would be installed after redevelopment is complete.

Soil Excavation and Pipeline Removals outside AST Secondary Containment Area (Not before Late 2011 to Late 2013) – PHASE 2

Pipelines in the remaining portion of Tank Farm S would be removed, where possible, during this phase of decommissioning and redevelopment. Impacted soil would be excavated around the pipelines and soil expected to exceed Tier 2 cleanup goals would also be excavated (Figure 5). A total of about 11,000 tons of soil is estimated to be excavated. The soil would be managed similarly to the soil excavated within the AST secondary containment, described above. It is estimated that about 1,800 tons of the soil would require off-site disposal and the remaining excavated soil would meet Tier 2 cleanup goals and could be reused on-site. Pipelines removed during this phase would be either transported off-site for recycling or reconditioned for off-site reuse.

About five workers would be working routinely on decommissioning and soil excavation activities, with a peak of 20 workers during short periods of time. An additional average of 20 workers would be engaged in construction of fencing, gates, lighting installation and paving after soil excavation and pipeline removals (for about three months).

As part of the pipeline removal and soil excavation, eight existing groundwater monitoring wells would be abandoned before demolition and four new monitoring wells would be installed after redevelopment.

Monitored Natural Attenuation (On-going)

Groundwater monitoring wells that are part of a monitoring network (included in the SMP) would be sampled on an annual or semi-annual basis to assess the progression of natural attenuation of contaminants in the groundwater. This would involve about two technicians accessing the tank farm semi-annually for approximately two days to collect water samples.

Engineering Controls (During and after Tank Farm S Redevelopment and then On-going)

The remedial action includes placement of an asphalt cover or one foot of clean imported soil on the surface of the tank farm where contaminated soil has been identified but not excavated and areas not occupied by structures, to prevent human contact with underlying soil.

For any new structures destined for full-time occupancy by commercial workers, an impermeable barrier and vent pipes would be installed beneath the building(s); the pipes would safely vent any vapors from soil and groundwater above the roofline. The purpose of the vapor barrier would be to prevent any fuel-related vapors from entering the structure(s) and potentially affecting human health.

Risk Management Plan (After Tank Farm S Redevelopment)

The Risk Management Plan (“RMP”) provides procedures to be implemented during any future construction and maintenance activities. These measures include requirements for a site-specific health and safety plan for any construction, soil management procedures for excavated soils, specific sampling and analysis requirements for imported soils, groundwater management procedures, stormwater management, and dust control.

Institutional Control (After Redevelopment is Complete)

A deed restriction will be recorded with Alameda County to prohibit certain sensitive land uses (residences, hospitals, day care centers, and primary and secondary schools) in areas of residual contamination.

Possible Groundwater Biosparging/Bioventing (As-needed)

Treatment of groundwater and/or soil may be employed in selective portions of the tank farm. The groundwater and soil treatment by biosparge or bioventing would depend on the progress of natural attenuation evaluated during 5-year reviews. About four possible areas on the tank farm could be candidates for enhanced groundwater/soil treatment. Biosparging/bioventing would consist of injecting air (and possibly nutrients) into the subsurface to increase the activity of naturally occurring micro-organisms to reduce concentrations of petroleum compounds. If this option were implemented, up to about 12 new well points would be installed and one or more compressors would be operating on the tank farm.

4.1.2. Tank Farm C

The recommended remedy for Tank Farm C consists of contaminated groundwater plume definition, MNA, implementation of an RMP, and a deed restriction.

Contaminated Groundwater Plume Definition (2011 and On-going))

Three new monitoring wells will be installed to assess groundwater quality along the western tank farm boundary (two wells) and in the northern, downgradient location of the tank farm (Figure 6). Well installation is estimated to be about two days of work.

Monitored Natural Attenuation (2011 and On-going)

Six groundwater monitoring wells will be monitored on a semi-annual basis for natural attenuation parameters to determine the progress of natural attenuation. This would involve about two technicians accessing the tank farm semi-annually for about one day to collect water samples.

Risk Management Plan (After Completion of Tank Farm C Redevelopment and then On-going)

The RMP provides procedures to be implemented during any future construction and maintenance activities. These measures include requirements for a site-specific health and safety plan for any construction, soil management procedures for excavated soils, specific sampling and analysis requirements for imported soils, groundwater management procedures, stormwater management and dust control. In addition, the RMP requires that if any structures were to be located in the tank farm within 100 feet of known petroleum hydrocarbon contamination, soil sampling must be performed to determine the need for a vapor barrier for the structure.

Institutional Control (After Redevelopment is Complete)

A deed restriction will be recorded with Alameda County to prohibit certain sensitive land uses (residences, hospitals, day care centers, and primary and secondary schools).

4.1.3. PST Tank Farm

The recommended remedy for the PST Tank Farm is abandonment of two groundwater monitoring wells, implementation of risk management measures for potential future construction activities, and recordation of a deed restriction.

Monitoring Well Abandonment (2011)

The RAP recommends the abandonment of two groundwater monitoring wells that were part of the groundwater monitoring network for the tank farm. Abandonment of the two wells would require about one day with a drill rig and a two-man crew.

Risk Management Plan (On-going)

The RMP provides procedures to be implemented during any future construction and maintenance activities. These measures include requirements for a site-specific health and safety plan for any construction, soil management procedures for excavated soils, specific sampling and analysis requirements for imported soils, groundwater management procedures, stormwater management and dust control.

Institutional Control (On-going)

A deed restriction will be recorded with Alameda County to prohibit certain sensitive land uses (residences, hospitals, day care centers, and primary and secondary schools).

4.1.4. Fuel Transfer Station

The recommended remedy for the Fuel Transfer Station is performance monitoring associated with the PRB operation, MNA of groundwater contamination, risk management measures, and a deed restriction. The recommended remedy includes an option to expand the existing treatment system at the PRB by either upgrading the technology used in the reactive sand gates or extension of the biosparging system to contaminated areas near the PRB.

Operation and Monitoring of PRB (On-going)

A biosparge treatment system is currently operating within reactive sand gates in the PRB. System operations and maintenance may require one or two technicians to maintain or adjust the rates of air flow into the biosparge wells within the sand gates on an intermittent basis. Groundwater sampling will continue to occur on at least a semi-annual basis as part of groundwater monitoring for the entire Fuel Transfer Station.

Additional treatment of groundwater north of the PRB could be implemented if, after evaluation, groundwater quality data in performance monitoring wells indicate that the cleanup goals are not met. The RAP recommends that if during two out of four consecutive monitoring events, groundwater performance goals are exceeded, an evaluation shall be conducted to determine the need for treatment system expansion. Such expansion could require excavation of trenches for utilities and installation of additional aboveground biosparging wells and installation of additional blower(s). This work could involve about one week of construction with a drill rig and two to four technicians and would be implemented jointly with Chevron (on behalf of Tank Farm C)..

Monitored Natural Attenuation (2011 and on-going)

Thirteen groundwater monitoring wells will be monitored on a semi-annual basis for natural attenuation parameters to determine the progress of natural attenuation. This monitoring includes monitoring the two wells within the sand gates of the PRB and three performance monitoring wells north of the PRB. Monitoring of the latter three performance wells would be conducted jointly with Chevron (on behalf of Tank Farm C). The monitoring activities would involve about two technicians accessing the tank farm semi-annually for about three days.

Risk Management Plan (On-going)

The RMP provides procedures to be implemented during any future construction and maintenance activities. These measures include requirements for a site-specific health and safety plan for any construction, soil management procedures for excavated soils, specific sampling and analysis requirements for imported soils, groundwater management procedures, stormwater management and dust control. The RMP also addresses contingency measures for the PRB (i.e., potential expansion of the treatment system, as discussed above).

4.2. Site Cleanup Requirements

The SCR requires that the remedial actions presented in the RAPs for the four facilities be implemented. It further requires that certain technical reports be submitted to the Regional Water Board within certain time frames and that annual and five-year reports are submitted to the Regional Water Board by OFFC, Chevron, KMEP, and the Port to evaluate the effectiveness of the RMP measures and the remedies in protecting public health and the environment.

4.3. Self-Monitoring Program

The SMP requires that groundwater and surface water monitoring occurs at Tank Farm S, Tank Farm C, and the Fuel Transfer Station on a semi-annual and annual basis (specific wells will be sampled semi-annually or annually). An annual report is required to document groundwater monitoring results and remedial system operations.

5.0 PROJECT OBJECTIVES

The objective of the proposed project (implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and the SMP) is to ensure that the four SFTF facilities are remediated to a level that will ensure that they do not adversely affect public health and the environment.

6.0 REQUIRED PERMITS

Implementation of the remedial actions and redevelopment of Tank Farm S would require permits from the Port. If the treatment system at the Fuel Transfer Station were to be enhanced or expanded, a permit may also be required from the Port. No permits would likely be required for the remedial actions at the PST Tank Farm and Tank Farm C.

7.0 INITIAL STUDY CHECKLIST AND DISCUSSION

This section evaluates the potential impacts associated with implementation of the RAPs and adoption of the SCR and SMP. The format follows the Initial Study Checklist of the CEQA Guidelines, Appendix G, where each topic (e.g., land use and geology) is identified and a determination is made with regards to the impact's significance. An explanation is provided to support the finding of impact significance. Mitigation measures are provided, as applicable, for significant impacts. In those instances where the potential impacts for the four SFTF facilities are unique to each facility, those impacts have been called out for each facility. In instances where the potential impacts are similar for each of the facilities, no differentiation has been made between the four facilities.

Based on the analysis presented in this Initial Study, the Regional Water Board has determined that this proposed project would not result in significant impacts that cannot be reduced to a less-than-significant level by implementation of the recommended mitigation measures. Therefore, a Mitigated Negative Declaration will be prepared for this proposed project. None of the conditions described in CEQA or the CEQA Guidelines calling for the preparation of an EIR has occurred.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Have a substantial adverse effect on a scenic vista? (No Impact)*

There are no identified scenic vistas in the SFTF area. The dominant visual components in the area are the ASTs on Tank Farms S and C. Removal of the ASTs on Tank Farm S during decommissioning activities would lessen the industrial nature of the SFTF. Replacement of the ASTs with a one-story office and maintenance building in the area of the removed ASTs would be less noticeable than the ASTs from nearby roadways and Bay Trail. Therefore, there would be no impacts from implementation of the RAPs and associated redevelopment of Tank Farm S, SCR, or SMP.

b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway? (No Impact)*

The SFTF does not contain any trees or rock outcroppings. Vegetation is limited to shrubs and grasses along the edges of the four facilities. The closest designated State scenic highway is I-580; the SFTF is not visible from I-580. Therefore, there would be no impacts from implementation of the RAPs and associated redevelopment of Tank Farm S, SCR, or SMP.

c) *Substantially degrade the existing visual character or quality of the site and its surroundings? (No Impact)*

Refer to the analysis in section 7.1.a, above.

d) *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (No Impact)*

Active remediation activities (e.g., soil excavation and free product removal) would occur during daytime hours and therefore not require lighting. Any maintenance and operations activities on the redeveloped Tank Farm S would not significantly differ from existing conditions. Routine groundwater monitoring activities at Tank Farm S, Tank Farm C, and the Fuel Transfer Station would not occur at night and there are no activities planned for PST Tank Farm. Therefore, there would be no impacts from implementation of the RAPs and associated redevelopment of Tank Farm S, SCR, or SMP.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
--	---	---	---	----------------------

2. AGRICULTURAL AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
- d) Result in the loss of forest land or conversion of forest land to non-forest use?
- e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

a) *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use? (No Impact)*

The SFTF is located in an industrial area and there are no farmlands at or near the project site. Therefore, there would be no impacts from implementation of the RAPs and associated redevelopment of Tank Farm S, SCR, or SMP.

b) *Conflict with existing zoning for agricultural use, or a Williamson Act contract? (No Impact)*

Refer to the analysis in section 7.2.a, above.

c) *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? (No Impact)*

Refer to the analysis in section 7.2.a, above.

d) *Result in the loss of forest land or conversion of forest land to non-forest use? (No Impact)*

Refer to the analysis in section 7.2.a, above.

e) *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? (No Impact)*

Refer to the analysis in section 7.2.a, above.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Conflict with or obstruct implementation of the applicable air quality plan? (Less than Significant)*

The Bay Area Air Quality Management District (“BAAQMD”) periodically prepares and updates plans with strategies to achieve or maintain State and federal ambient air quality standards. The plans estimate the current and future emissions from industry, motor vehicles, and other sources and combine that information with air monitoring data to assess progress in improving air quality. Computer modeling simulations are run to test future strategies to reduce emissions in order to achieve air quality standards. Air quality plans include measures to reduce air pollutant emissions from industrial facilities, commercial processes, motor vehicles, and other sources. Bay Area plans are prepared with the cooperation of the Metropolitan Transportation Commission and the Association of Bay Area Governments (“ABAG”).

The BAAQMD’s current air quality planning document is the 2010 Clean Air Plan, which was adopted on 15 September 2010. The 2010 Clean Air Plan updates the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement “all feasible measures” to reduce ozone; provide a control strategy to reduce ozone, particulate matter (“PM”), air toxics, and greenhouse gases in a single, integrated plan. The plan contains control measures to be implemented with the goal to reduce emissions from specific sources.

The 2010 Clean Air Plan’s control measures for construction equipment is to reduce emissions by: 1) providing cash incentives to retrofit construction equipment with diesel particulate matter filters or upgrade to Tier III or Tier IV off-road engines; 2) work with the California Air Resources Board (“CARB”) and the California Energy Commission to develop more fuel

efficient off-road engines and drive trains; and 3) work with local communities, contractor, and developers to encourage the use of renewable alternative fuels in applicable equipment.

Implementation of the RAPs and the associated redevelopment of Tank Farm S, the SCR, and SMP would not conflict or obstruct implementation of these control measures; therefore, this impact is less than significant.

b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation? (Potentially Significant unless Mitigation Incorporated)*

The SFTF is located in the San Francisco Bay Air Basin (“Basin”) and is under the jurisdiction of the BAAQMD. On June 2, 2010, the BAAQMD’s Board of Directors adopted new CEQA air quality thresholds of significance, which are included in the BAAQMD’s updated CEQA Guidelines.¹

The San Francisco Air Basin is currently in non-attainment status for the State and federal ambient air quality standard for particulate matter and ozone. The BAAQMD’s CEQA guidelines contain screening values based on the size and land use types to determine if the proposed project could potentially result in significant air quality impacts. If a proposed project is below the screening criteria, further air quality evaluation is not necessary.

Tank Farm S. The BAAQMD land use type most closely matching the remediation and associated redevelopment of Tank Farm S is “general light industry”. The screening size for general light industry is 259,000 square feet for construction phase emissions of criteria pollutants. The proposed office and maintenance building at Tank Farm S would be 6,700 square feet in size.

To use the construction screening criteria, the following conditions must be met:

1. A project is below the applicable screening level size of 256,000 square feet for general light industry;
2. All Basic Construction Mitigation Measures (from the BAAQMD guidelines) would be included in the project design and implemented during construction; and
3. Construction-related activities would not include any of the following:
 - a. Demolition;
 - b. Simultaneous occurrence of more than two construction phases (e.g., paving and building construction would occur simultaneously);
 - c. Simultaneous construction of more than one land use type (e.g., project would develop residential and commercial uses on the same site);
 - d. Extensive site preparation; or
 - e. Extensive material transport requiring a considerable amount of haul truck activity.

¹ Bay Area Air Quality Management District, 2010, *California Environmental Quality Act, Air Quality Guidelines*, June.

Since the Tank Farm S remediation and associated redevelopment include decommissioning of the existing AST structures and extensive material transport, the criteria pollutant emissions during construction were quantified and compared to the following BAAQMD thresholds of significance for construction emissions.

• Reactive organic gas (“ROG”)	54 pounds per day
• Oxides of nitrogen (“NOx”)	54 pounds per day
• Respirable particulate matter from exhaust with an aerodynamic resistance diameter of 10 micrometers or less (“PM10”)	82 pounds per day (exhaust emissions only)
• Fine particulate matter from exhaust with an aerodynamic resistance diameter of 2.5 micrometers or less (“PM2.5”)	54 pounds per day (exhaust emissions only)

The construction and associated remediation activities for Tank Farm S would be conducted in two phases. Each phase would contain a variety of activities in which equipment emissions would be generally consistent over a period of time.

Phase I would include: 1) free product recovery well installation; 2) removal of the secondary containment block wall; 3) removal of the aboveground pipes; 4) removal of the aboveground tanks; 5) removal of the asphalt and concrete tank pads; 6) removal of underground pipes; 7) soil excavation; 8) backfill of the excavations; and 9) building construction (including asphalt cap and vapor barrier).

Phase II construction activities would include: 1) removal of underground pipes; 2) soil excavation; 3) backfill of the excavation, and 4) asphaltting of parking lot and/or placement of soil cap.

For preconstruction activities, which include the remedial activities and tank farm decommissioning, the estimated emissions from each activity were calculated based on the types of equipment and length of time each piece of equipment would be operated using emission factors from the California Air Resources Board’s OFFROAD2007 emissions model. Construction emissions during construction (building and paving) were estimated using URBEMIS2007 modeling software. The detailed calculations are included in Appendix A. The results are summarized in Table 4, below.

Table 4: Estimated Daily Criteria Pollutant Emissions from Construction (Tank Farm S)

PHASE I	ROG (lb/day)	NOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Free Product Recovery Well Installation	0.97	15	0.38	0.35
Remove Block Wall	4.8	43	2.1	1.9
Remove Aboveground Pipes	4.9	42	2.2	2.0
Remove Aboveground Tank	5.0	43	2.2	2.0
Remove Asphalt and Tank Pad	5.2	45	2.3	2.0
Remove Underground Pipes	4.7	37	2.1	1.9
Excavate Soil	3.4	38	1.7	1.5
Backfill	3.2	40	1.6	1.4
Fine Grading	2.9	24	1.2	1.1
Trenching	4.6	39	1.6	1.5
Building Office and Maintenance Bay	1.6	14	0.73	0.68
Paving and Building (assumed to occur simultaneously)	4.8	31	2.1	1.9
Architectural Coating	15	0.010	0.0	0.0
PHASE II	ROG (lb/day)	NOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Remove Underground Pipes	5.4	43	2.5	2.2
Excavate Soil	4.2	45	2.1	1.9
Backfill	3.6	41	1.8	1.6
Paving	2.0	11	0.93	0.85
BAAQMD Threshold of Significance	54	54	82¹	54¹

¹ Applies to construction exhaust emissions only.

Notes:

ROG = reactive organic gas

NOx = oxides of nitrogen

PM10 = respirable particulate matter from exhaust with an aerodynamic resistance diameter of 10 micrometers or less

PM2.5 = fine particulate matter from exhaust with an aerodynamic resistance diameter of 2.5 micrometers or less

lb/day = pound per day

The estimation of criteria pollutant emissions during construction activities at Tank Farm S are less than the BAAQMD significance thresholds for ROG, NOx, exhaust PM10 and exhaust PM2.5. However, since the San Francisco Air Basin is in non-attainment of the federal and state ambient air quality standards for PM10 and PM2.5, which includes dust, emissions of dust from construction may be a potentially significant impact.

Tank Farm C, Fuel Transfer Station, and PST Tank Farm. Implementation of the RAPs, SCR, and SMP for these three facilities would not include significant emissions relative to existing conditions. Groundwater monitoring would continue at the Fuel Transfer Station and

additional wells would be installed at Tank Farm C. At PST Tank Farm, no active remediation would occur. Therefore, this is not an impact.

Implementation of Mitigation Measure AIR-1 would reduce this potentially significant impact at Tank Farm S to less than significant.

Mitigation Measure AIR-1 (*Tank Farm S*)

OFFC shall insure that contract specifications require the following BAAQMD recommended basic construction mitigation measures during construction activities at Tank Farm S to reduce emission of particulate matter as dust (BAAQMD, 2010).

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, as necessary, to prevent wind-blown dust.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day, or as necessary. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Post a publicly visible sign with the telephone number and person to contact at the Port of Oakland regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (Less than Significant)

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant (BAAQMD,2010).

The thresholds of significance developed by the BAAQMD represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the San Francisco Air Basin's existing air quality conditions. Since the levels of emissions of criteria pollutants from implementation the RAPs, the SCR, and the SMP are not significant, the cumulative impact is less than significant (Table 4, above).

d) Expose sensitive receptors to substantial pollutant concentrations? (No Impact)

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP would result in diesel particulate emissions, which CARB has identified as a toxic air contaminant (“TAC”). Remedial actions may also result in the dispersion of volatile organic compounds such as benzene, which is also a TAC. However, no sensitive receptors are located near the SFTF; the closest residences are located approximately one mile away to the southeast by Oyster Bay Regional Shoreline in San Leandro. Since airborne contaminants either settle or disperse as they move away from the source, diesel particulate or volatile organic emissions from construction or remediation activities would not be expected to reach these residences. Therefore this is not an impact.

e) Create objectionable odors affecting a substantial number of people? (No Impact)

Implementation of the RAPs and associated Tank Farm S redevelopment, the SCR, and SMP could result in odor emissions from contaminated soil as it is excavated and loaded onto trucks. However, the odors associated with these activities would be limited to the four SFTF facilities and immediate environs. There are no sensitive receptors or residences near the SFTF. Therefore, odors from the SFTF would not result in an impact to a substantial number of people.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	--	------------------------------	-----------

4. BIOLOGICAL RESOURCES. Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) Through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (Potentially Significant Unless Mitigation Incorporated)*

Biological resources were identified through the review and compilation of existing information and conduct of a field reconnaissance survey of the site. The review provided information on general resources in the Oakland area and the distribution and habitat requirements of special-status species that have been recorded from or are suspected to occur in the project vicinity, including: records on occurrences of special-status species and sensitive natural communities maintained by the California Natural Diversity Data Base (“CNDDDB”) of the California Department of Fish and Game (“CDFG”); the California Native Plant Society’s (“CNPS”) *Inventory of Rare and Endangered Plants of California* (2001, 2010 electronic edition update); the CDFG’s list of special animals (CDFG, 2009) and plants (CDFG, 2010a); and a number of site-specific assessments. A field reconnaissance survey was conducted on 8 October 2010 to determine the suitability of the project site to support special-status species and the extent of jurisdictional wetlands.

Special-status species² are plants and animals that are legally protected under the California and/or federal Endangered Species Acts (“ESAs”)³ or regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning

² Special-status species include:

- listed (rare, threatened, or endangered) and candidate species for listing by the CDFG.
- listed (threatened or endangered) and candidate species for listing by the U.S. Fish and Wildlife Service (“USFWS”) and National Marine Fishery Services.
- species considered to be rare or endangered under the conditions of Section 15380 of the CEQA Guidelines, such as those identified on lists 1A, 1B, and 2 in the California Native Plant Society (“CNPS”) *Inventory of Rare and Endangered Plants of California*.
- and possibly other species which are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on list 3 in the CNPS *Inventory* or identified as California “Species of Special Concern” (“SSC”) by the CDFG, which have no legal protective status under the California Endangered Species Act but are of concern because of severe decline in breeding populations.

³ The federal Endangered Species Act (“FESA”) of 1973 declares that all federal departments and agencies shall use their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (“CESA”) of 1984 parallels the policies of FESA and pertains to native California species.

locations, communal roosts, and other essential habitat. Species with legal protection under the ESAs often represent major constraints to development or redevelopment; particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a “take”⁴ of these species.

The primary information source on the distribution of special-status species in California is the CNDDDB inventory, which is maintained by the Biogeographic Data Branch of the CDFG. Occurrence data are obtained from a variety of scientific, academic, and professional organizations, private consulting firms, and knowledgeable individuals, and entered into the inventory as expeditiously as possible. The presence of a population of species of concern in a particular region is an indication that an additional population may occur at another location within the region, if habitat conditions are suitable. However, the absence of an occurrence in a particular location does not necessarily mean that special-status species are absent from the area in question, only that no data has been entered into the CNDDDB inventory. Detailed field surveys are generally required to provide a conclusive determination on presence or absence of sensitive resources from a particular location.

According to records maintained by the CNDDDB (CDFG, 2010b), numerous special-status species have been reported from the shoreline of San Francisco Bay and OIA vicinity, although none has been specifically reported at SFTF. Most of these are historic occurrences known from Arrowhead Marsh to the north, and include: the federally-threatened California black rail (*Laterallus jamaicensis coturniculus*), the state and federally-endangered salt-marsh harvest mouse (*Reithrodontomys raviventris*), the state and federally-endangered California clapper rail (*Rallus longirostris obsoletus*), and salt-marsh wandering shrew (*Sorex vagrans halicoetes*) which is a California Species of Special Concern (“SSC”) species. Burrowing owl, recognized as a SSC species, have been reported from the North Field to the south of Earhart Road, and the state and federally-endangered California least tern (*Sterna antillarum browni*) and the federally-threatened western snowy plover have been observed west of Runway 11/29.

Table 5 provides information on special-status animal species considered to have the highest potential for occurrence in the OIA vicinity. This includes scientific and common names, status, typical habitat characteristics, and likelihood for occurrence on or near the project site. As indicated in the table, suitable habitat for most special-status species is absent on the SFTF or limited to possible occasional foraging activity by numerous bird species. No evidence of any nesting activity by any special-status bird species was observed on-site during the October 2010 field reconnaissance.

⁴ “Take” as defined by the FESA means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect” a threatened or endangered species. “Harm” is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The CDFG also considers the loss of listed species habitat as “take,” although this policy lacks statutory authority and case law support under the CESA.

Two sections of FESA contain provisions which allow or permit “incidental take.” Section 10(a) provides a method by which a state or private action which would result in “take” may be permitted. The applicant must provide the USFWS with an acceptable conservation plan and publish notification for a permit in the Federal Register. Section 7 pertains to a federal agency which proposes to conduct an action which may result in “take,” requiring consultation with USFWS and possible issuance of a jeopardy decision. Under the CESA, “take” can be permitted under Section 2081 of the Fish and Game Code. The applicant must enter into a habitat management agreement with the CDFG, which defines the permitted activities and provides adequate mitigation.

RAP implementation and associated redevelopment of Tank Farm S, the SCR, and SMP would occur in uplands near the fringe of marshland habitat which may be used as foraging habitat for a number of special-status bird species but is unsuitable as nesting habitat. Sufficient foraging habitat is available in other locations at the OIA to avoid any significant impacts to possible bird foraging activity as a result of short-term construction disturbance. No burrowing owls have been reported from the SFTF or surrounding lands, and no evidence of burrowing owl activity was observed during the field reconnaissance in October 2010. However, burrowing owls are known to occupy ground squirrel burrows and there is a remote possibility that a new nest could be established in the future before construction proceeds. Several ground squirrel burrows were observed on the southern edge of Tank Farm S, and ground squirrels could excavate new burrows in other locations in the future. Conducting a preconstruction survey to confirm absence of any active burrowing owl nests, as recommended below in mitigation measure BIO-1, and implementing appropriate construction restrictions until any young have fledged would serve to address any potentially significant impact on this species, in the remote instance that a new nest location was established.

No occurrences of salt marsh harvest mouse or salt marsh wandering shrew were encountered in the OIA during trapping performed in 1990 and 1991 (Port, 2000), and these species are not believed to occur in the developed uplands on the SFTF or in the adjacent pickleweed-dominated marshlands. All construction would be restricted to upland locations that are either already secured with silt fencing (PST Tank Farm and Tank Farm C) or where all vegetation is completely absent and dispersal by small mammals would not take place because of the lack of protective cover. Construction workers would be trained of the need and importance to avoid any disturbance to nearby marsh habitat. No adverse impacts on salt marsh harvest mouse or salt marsh wandering shrew are anticipated, and no mitigations are considered necessary. Several special-status plant species have been historically reported from the OIA vicinity, including: alkali milk-vetch (*Astragalus tener* var. *tener*), San Francisco Bay spineflower (*Chorizanthe espidata* var. *cuspidata*), Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*), and Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*). None of these has any legal protective status under the federal and/or California ESAs, but all are maintained on List 1B (considered rare or endangered in California) of the CNPS *Inventory*. However, none of these or other special-status plant species were encountered during floristic surveys conducted on the OIA in 1991, 1992, and 1993 (Port of Oakland, 2000), and none is believed to occur on the SFTF due to the extent of past disturbance.

Scattered individual marsh gumplants (*Grindelia stricta* var. *angustifolia*) were observed along the edge of the marsh in the vicinity of the SFTF during the field reconnaissance in October 2010. This species was previously maintained on List 4 of the CNPS *Inventory*, but has been removed from the CNPS "watch list" because it was found to be too common. It is no longer considered a possible special-status plant species.

No special-status plants are believed to occur on the SFTF, and no impacts on special-status plant species are anticipated.

Mitigation Measure BIO-1 (Tank Farm S):

A pre-construction survey shall be conducted for burrowing owl within 30 days of project-related ground-disturbing activities to determine whether any nesting owls are present and to provide for their passive relocation during the non-breeding season if nests are encountered. The survey area shall include the area proposed for excavation as well as all areas (to be identified and staked or otherwise identified) to be used for vehicle parking, staging area, stockpiling of soil, and soil borrow areas. The survey shall be conducted by a qualified biologist consistent with the latest Burrowing Owl Protocol and Mitigation Guidelines. If nesting owls are encountered, they would be passively relocated consistent with the Burrowing Owl Management Plan (URS Greiner Woodward Clyde, 1999) and the subsequent Burrowing Owl Mitigation Program (Port, 1999) developed for the OIA.

- b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (Less than Significant)*

In addition to species-oriented management, protecting habitat on an ecosystem level is increasingly recognized as vital to the protection of natural diversity in the state. The CNDDDB also monitors the locations of natural communities that are considered rare or threatened, known as sensitive natural communities. The CNDDDB has compiled a list of sensitive natural communities that are given a high inventory priority for mapping and protection (CDFG, 2003 and 2009), which includes coastal salt marsh habitat. Although these natural communities have no legal protective status under the state or federal ESAs, they are provided some level of protection under the CEQA Guidelines. A project would normally be considered to have a significant effect on the environment if it would substantially affect a sensitive natural community such as a riparian woodland, native grassland, or coastal salt marsh. Further loss of a sensitive natural community could also be interpreted as substantially diminishing habitat, depending on the relative abundance, quality and degree of past disturbance, and the anticipated impacts.

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP would generally be restricted to the disturbed uplands of the SFTF. The nearby pickleweed-dominated coastal salt marsh is considered a sensitive natural community type by the CNDDDB, but all construction would be outside the marshland habitat. Removal of the former aboveground pipelines along the southern edge of the tank farm would all occur by hand and use of cranes; no digging or disturbance to marsh vegetation is proposed. Sedimentation or other indirect effects on the adjacent coastal salt marsh community through remediation and associated redevelopment could occur without special measures to ensure prevention of sediments and other construction-generated pollutants from entering the coastal salt marsh community. Compliance with the General Construction Permit requirements for erosion control (see discussion in 7.6.b, below) would ensure that this impact would be less than significant.

- c) *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (Less than Significant)*

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service, which generally define wetlands through consideration of three criteria: hydrology; soils; and vegetation.

The SFTF was historically open waters of San Francisco Bay, but subsequent fill eliminated any jurisdictional waters in the area. A wetland delineation of the OIA was verified by the U.S. Army Corps of Engineers on April 15, 1998, which determined that jurisdictional wetlands and other waters subject to Section 404 of the Clean Water Act are absent on the upland areas of the SFTF. This was updated as part of a subsequent wetland delineation dated April 17, 2007. The adjacent marshlands have been verified by the U.S. Army Corps of Engineers as non-tidal jurisdictional wetlands subject to Section 404 of the Clean Water Act.

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP would be restricted to the upland portion of the SFTF and would not directly impact any regulated wetlands. However, it is possible that sediments or contaminated soil and groundwater could enter into the adjacent salt marsh if caution is not exercised during construction. Given that no dredging or fill is proposed in jurisdictional wetlands, authorization by the U.S. Corps of Engineers is not required under Section 404. Compliance with the General Construction permit would render this impact less than significant (see also discussion under 7.5.b, below)

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (Less than Significant)

The SFTF has been extensively modified by past levee installation, tank farm construction and remediation, and other fill activities, and is isolated from tidal action from the nearby San Francisco Bay. Most of the proposed remediation and redevelopment areas on the site are completely devoid of vegetation. The margins and fill slopes between the developed uplands and nearby wetlands support a cover of ruderal (weedy) non-native grasses and forbs. These include ryegrass (*Lolium* sp.), yellow star thistle (*Centaurea solstitialis*), pampas grass (*Cortaderia selloana*), and tarweed (*Madia* sp.). Areas of remnant coastal salt marsh are composed of a monotypic cover of the pickleweed (*Salicornia virginica*). Saltgrass (*Distichlis spicata*) and marsh gumplant (*Grindelia stricta* var. *angustifolia*) occur in scattered locations along the lower elevations of the fill slopes that border the marsh.

The SFTF is of only limited value to wildlife due to the general absence of vegetative cover and on-going human activity. Several California ground squirrel burrow entrances were observed along the edge of the cyclone fence along the south side of Tank Farm S during the field reconnaissance in October 2010, but all of them appeared to be unused based on the presence of debris and spider webs at the opening. The extent of exposed ground and lack of protective cover limits the likelihood that the uplands on the SFTF would be used by other terrestrial mammals or reptiles. A number of birds may occasionally forage in the vicinity as seed and leafy vegetation become available. However, no evidence of any bird nesting activity was

observed during the field reconnaissance. The existing industrial character of the SFTF would make it unlikely that nesting would occur at the four facilities at the SFTF prior to or during proposed RAP implementation activities. The adjacent wetlands are also of limited habitat value due to the monotypic cover and fact that they are no longer under tidal influence. Raptors and other bird species most likely forage in the surrounding salt marsh, including: red-tailed hawk, American kestrel, northern harrier, and white-tailed kite. When surface water is present in the wetlands, gulls, ducks, and shorebirds may use the area for wading, resting, and feeding. No evidence of any raptor nesting activity was observed on the SFTF or in the immediate vicinity during the field reconnaissance in October 2010. None has been reported from the area in the past.

Implementation of the RAPs and associated Tank Farm S redevelopment, the SCR, and SMP would not have any significant effect on wildlife habitat or opportunities for wildlife movement. Construction and remediation would occur during a relatively short period of time and no existing vegetative cover would be removed during construction and redevelopment. Mitigation Measure BIO-1 recommends a pre-construction survey to be conducted to avoid the remote possibility for take of burrowing owl and prevent possible indirect impacts on the nearby coastal salt marsh vegetation. Potential impacts on wildlife would be considered less than significant.

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Less than Significant)*

The Open Space Conservation and Recreation Element of the Oakland General Plan includes the following policies related to biological and wetland resources, which are relevant to the proposed project:

Policy CO-8.1: Mitigation of Development Impacts. Work with federal, state and regional agencies on an on-going basis to determine mitigation measures for development which could potentially impact wetlands. Strongly discourage development with unmitigatable adverse impacts.

Policy CO-9.1: Habitat Protection. Protect rare, endangered, and threatened species by conserving and enhancing their habitat and requiring mitigation of potential adverse impacts when development occurs within habitat areas.

Adequate protective measures have been incorporated into the project and recommended in Mitigation Measure BIO-1 to avoid potential impacts on burrowing owls and possible indirect effects on the nearby sensitive wetlands. These measures would serve to ensure that the RAP implementations and associated Tank Farm S redevelopment are implemented in conformance with the two relevant policies of the Oakland General Plan regarding avoidance of sensitive wetlands and special-status species. No direct impacts on jurisdictional wetlands would occur as part of this project, and compensatory mitigation and authorizations from regulatory agencies are not required.

f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan? (No Impact)*

Implementation of the RAPs, the SCR, SMP, and associated Tank Farm S redevelopment would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. No such conservation plans have been adopted encompassing the project vicinity. Therefore, this is not an impact

Table 5: Special-Status Animal Species, Potential Occurrence in Project Vicinity

SPECIES NAME	STATUS Federal/State	HABITAT CHARACTERISTICS (Occurrence On-Site)
FISH/AMPHIBIANS/REPTILES		
<i>Ambystoma tigrinum californiense</i> California tiger salamander	FT/SSC, C	Grassland and open woodlands with temporary or permanent water (unlikely)
<i>Clemmys marmorata</i> Western pond turtle	-/SSC	Ponds, marshes, rivers, and streams (unlikely)
<i>Onchorhynchus mykiss</i> Steelhead trout	FT/SSC	San Francisco Bay and tributary rivers/streams (unlikely)
<i>Rana aurora draytoni</i> California red-legged frog	FT/SSC, CP	Permanent ponds, pools, and streams in riparian corridors and surrounding uplands (unlikely)
BIRDS		
<i>Aquila chrysaetos</i> Golden eagle	-/CP	Open mountains, foothills, and canyons (unlikely)
<i>Athene cunicularia</i> Burrowing owl	-/SSC	Open grassland and fields, farms, and ruderal areas (possible)
<i>Charadrius alexandrius nivorus</i> Western snowy plover	FT/SSC	Nests and forages in sandy marine and estuarine bodies (unlikely)
<i>Circus cyaneus</i> Northern harrier	-/SSC	Marshes, fields, and grassland (possible)
<i>Elanus leucurus</i> White-tailed kite	-/CP	Open foothills, marshes, and grassland (possible)
<i>Falco peregrinus</i> Peregrine falcon	Delisted/SE, CP	Canyons, mountains, open grassland (unlikely)
<i>Lanius ludovicianus</i> Loggerhead shrike	-/SSC	Open habitat with scattered trees, shrubs, and other perches (possible)
<i>Melospiza melodia pusillula</i> Alameda song sparrow	-/SSC	Nests on ground near freshwater (unlikely)
<i>Rallus longirostris obsolitus</i> California clapper rail	FE/SE, CP	Coastal salt marsh (unlikely)
<i>Sterna antillarum browni</i> California least tern	FE/SE, CP	Nests in sandy beaches and forages in coastal salt marsh (unlikely)
MAMMALS		
<i>Antrozous pallidus</i> Pallid bat	-/SSC	Roosts in caves, crevices, unused structures (unlikely)
<i>Eumops perotis californicus</i> Western mastiff bat	-/SSC	Caves and crevices in arid areas with high cliffs (unlikely)
<i>Corynorhinus townsendi</i> Townsend western big-eared bat	-/SSC	Cave, mines, and abandoned buildings (unlikely)
<i>Reithrodontomys raviventris</i> Salt marsh harvest mouse	FE/SE, CP	Coastal salt marsh (unlikely)
<i>Sorex vagrans halicoetes</i>	-/SSC	Coastal salt marsh (unlikely)

SPECIES NAME	STATUS Federal/State	HABITAT CHARACTERISTICS (Occurrence On-Site)
Salt marsh wandering shrew		

Source: CNDDDB and Environmental Collaborative (2010)

STATUS DESIGNATIONS:

Federal:

- FE = Listed as "endangered" under the federal ESA.
- FT = Listed as "threatened" under the federal ESA.
- C = Candidate species under review for federal listing.

State:

- SE = Listed as "endangered" under the California ESA.

CP = California fully protected species; individual may not be possessed or taken at any time.

SSC = Considered a California Species of Special Concern (SSC) by the CDFG; taxa have no formal legal protection but nest sites and communal roosts are generally recognized as significant biotic features.

C = Candidate species under review for State listing.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? (Less than Significant)*

The SFTF area was completely submerged prior to the mid-1950s, when the area was diked, drained, and filled (Sorensen, 1989). The SFTF was developed in the late 1960s and early 1970s. Therefore, the SFTF is underlain by artificial fill that would not be expected to contain archaeological resources. The Revised Draft Environmental Impact Statement (“EIS”) for the Proposed Airport Development Program included a historic resources survey across the entire airport. None of the potential historic resources identified in that document is located in the vicinity of the SFTF.

While the site conditions make it improbable that cultural resources would be uncovered during any soil excavation for the four facilities, should resources be identified, they could be damaged unless proper procedures were followed by the contractor performing the excavation activities.

The Port of Oakland has developed an Emergency Plan of Action for Discoveries of Unknown Historic or Archaeological Resources. The Plan delineates procedures to be employed by construction contractors involved in excavation in the Port Area; procedures include reporting requirements and when to halt work if a potential resource is discovered. A Project Sponsor must provide contractor crew training in emergency procedures, including the Emergency Plan of Action for Discoveries of Unknown Historic or Archaeological Resources, as part of the tailgate site safety meetings. This would minimize potential impacts to potential cultural resources. Therefore, compliance with the Port Plan of Action would result in a less-than-significant impact.

b) *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less than Significant)*

Refer to the analysis in section 7.5.a, above.

c) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less than Significant)*

Refer to the analysis in section 7.5.a, above.

d) *Disturb any human remains, including those interred outside of formal cemeteries? (Less than Significant)*

Refer to the analysis in section 7.5.a, above.

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
--------------------------------	--	------------------------------	-----------

6. GEOLOGY AND SOILS. Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

b) Result in substantial soil erosion or the loss of topsoil?

	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a) <i>Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:</i>				
i) <i>Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42? (No Impact)</i>				

The South Field Tank Farm is not traversed by any active faults as defined on the Alquist-Priolo Earthquake Fault Zoning Map (Hart, 1997). Therefore, the SFTF would not be expected to be subject to fault rupture and this is not an impact.

ii) *Strong seismic ground shaking? (Potentially Significant unless Mitigation Incorporated)*

The SFTF is located in a region of California with a high degree of seismic activity. The site is not traversed by any identified active faults; however, several nearby active faults could impact the project. The nearest active faults include the Hayward Fault, approximately five miles to the east; the San Andreas Fault, approximately 15 miles to the southwest; and the Calaveras Fault, approximately 15 miles to the east. It is reasonable to expect that the SFTF would be subject to intense ground shaking during a seismic event. The Working Group on California Earthquake Probabilities has estimated that there is a 70 percent probability that one or more large earthquakes (magnitude 6.7 or greater) will occur along one of the major fault zones and minor faults in the San Francisco Bay Area during the 30-year period 2000 to 2030 (USGS, 1999).

Where underlying geologic materials at a site consist of unconsolidated artificial fill, and/or Bay mud, ground shaking during an earthquake can be amplified, resulting in greater damage to structures. Shaking amplification maps provided by the ABAG indicate that shaking amplification at the SFTF would be violent during a major earthquake on either the San Andreas or Hayward faults. Groundshaking could result in damage to remediation systems and structures, including groundwater monitoring wells, the PRB, and any vapor barriers installed at structures.

This potentially significant impact would be applicable to Tank Farm S, Tank Farm C, and the Fuel Transfer Station.

Implementation of Mitigation Measure GEO-1 would reduce this potentially significant impact to less than significant.

Mitigation Measure GEO-1 (Tank Farm S, Tank Farm C, Fuel Transfer Station)

Following a seismic event of 5.3 or greater magnitude at nearby active faults, Tank Farm S, Tank Farm C, and the Fuel Transfer Station shall be inspected by a licensed engineer. The inspection shall include inspection of each groundwater monitoring well, any remedial system (if operated), such as the PRB and biosparge or bioventing system components, and vapor barriers or structures (if any). The licensed engineer shall make recommendations for restoring any damaged well or remedial system(s) to its intended functionality. The inspection, recommendations, and implementation of recommendations shall be documented in the annual report submitted to the Regional Water Board as part of the SMP requirements.

iii) Seismic-related ground failure, including liquefaction? (Potentially Significant unless Mitigation Incorporated)

Liquefaction is a secondary effect of amplified ground shaking in unconsolidated, cohesionless sediments, such as silts and sands. Liquefaction occurs when saturated, cohesionless soils become “liquid” due to ground shaking. When liquefaction occurs, the soil loses its load-bearing strength.

The ABAG (2007a) maps the SFTF and vicinity as having a “high” liquefaction susceptibility. Subsurface investigations conducted in the SFTF and reported in the RAPs indicate that fill, consisting of loose, saturated sands, silty sands, and clayey sands underlie the SFTF at shallow depths. The loose sands and silty sands may be susceptible to liquefaction. During liquefaction, lateral spreading and seismically-induced settlement could occur at the SFTF. This could cause adverse effects to groundwater monitoring wells, remedial systems, and vapor barriers installed at structures.

This potentially significant impact would be applicable to Tank Farm S, Tank Farm C, and the Fuel Transfer Station.

Mitigation Measure GEO-2 (Tank Farm S, Tank Farm C, Fuel Transfer Station)

Implementation of Mitigation Measure GEO-1 would reduce this impact to a less-than-significant level.

iv) Landslides? (No Impact)

The SFTF is relatively level. Landslides are not known to be present on any of the four facilities. Therefore there would be no impacts to any of the four facilities resulting from landslides.

b) Result in substantial soil erosion or the loss of topsoil? (Less than Significant)

Tank Farm S. Decommissioning, remediation, and redevelopment of Tank Farm S would include significant soil disturbance. Soil disturbance activities include removal of the existing

ASTs, excavation and removal of underground fuel pipelines, excavation of contaminated soils, and construction of new structures. Each and all of these activities could result in soil erosion and soil entrainment in surface water runoff that would flow into the adjacent stormwater retention basins.

Any decommissioning, soil excavation, and redevelopment activities at Tank Farm S and the staging area on PST Tank Farm and a vacant area along Edward White Way would be subject to the requirements of the National Pollution Discharge Elimination System (“NPDES”) General Permit for Stormwater Discharges. Pursuant to Clean Water Act (“CWA”) Section 402 and the Porter-Cologne Water Quality Control Act, on September 2, 2009, the State Water Resources Control Board adopted an NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 (“Construction General Permit”).

To obtain coverage under the Construction General Permit, the Legally Responsible Person must provide, via electronic submittal, a Notice of Intent, and a Storm Water Pollution Prevention Plan (“SWPPP”). Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The Construction General Permit covers Traditional Projects and Linear Underground and Overhead Projects, such as pipeline installations. Local construction activities covered under the General Construction Permit are overseen by the Regional Water Board.

The Construction General Permit exercises a risk-based permitting approach, and mandates certain requirements based on the risk level of the project (Level 1, Level 2, or Level 3). The risk level of a project is based on: 1) sediment discharge risk and 2) the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether a project would discharge to a sediment-sensitive receiving water, defined by: 1) the beneficial uses of the receiving water in the Basin Plan (cold freshwater habitat, fish migration, and spawning); 2) a listing on the EPA 303(d) list of sediment impairment; or 3) having a Total Maximum Daily Load in place to address excessive sedimentation.

The decommissioning, remediation, and redevelopment of Tank Farm S would be a Traditional Project. The determination of whether the project would be Risk Level 1, 2, or 3 would be made by the preparer of the SWPPP, which would be submitted to the Regional Water Board. The activities required to be implemented by the specific Risk Level must be documented in annual report(s) to be submitted to the Regional Water Board.

The performance standard in the Construction General Permit is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and management practices that achieve Best Available Technology (“BAT”) for treatment of toxic and non-conventional pollutants and Best Conventional Technology (“BCT”) for treatment of conventional pollutants.⁵ The permit also

⁵ As defined by U.S. EPA, Best Available Technology is a technology-based standard established by the CWA as the most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. The BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable. Best Conventional Technology is a technology-based standard that applies to treatment of conventional pollutants, such as total suspended solids.

imposes numeric action levels (Risk Level 2 and Risk Level 3 projects) and numeric effluent limits (Risk Level 3 projects) for pH and turbidity, as well as minimum Best Management Practices (“BMPs”) that must be implemented at all sites.

A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is to: 1) help identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges and 2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. BMPs must be overseen by a Qualified SWPPP Practitioner that meets the requirements in the permit. For Level 2 and Level 3 projects, the discharger must also prepare a Rain Event Action Plan as part of the SWPPP that must be designed to protect all exposed portions of the construction site within 48 hours prior to any likely precipitation event.

The SWPPP must also include a construction site monitoring program. The monitoring program includes, depending on the risk level, visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment), if applicable. Following redevelopment of Tank Farm S, the site would be covered with asphalt, structures, or compacted clean soil. Tank Farm S would still be subject to any Port stormwater control requirements for design and post-construction. While the Port has not been issued a Municipal Permit from the Regional Water Board at this time (a draft Municipal Permit is being reviewed by the Regional Water Board at the current time), the Port routinely applies the post-construction measures in the draft Municipal Permit to projects in OIA. The Port would require that design and post-construction measures be implemented at Tank Farm S in accordance with the draft Municipal Permit. The design and post-construction measures include, but are not limited to:

- Protection of slopes and channels;
- Design of outdoor material storage areas to minimize exposure of materials to rainfall and run-on;
- Treatment BMPs (volumetric and/or flow-based), including maintenance and operations of the treatment BMPs;
- Construct vehicle maintenance bays indoors and design bays to prevent stormwater run-on;
- Pave fueling facilities areas with cement concrete (or equivalent).

Compliance with the General Construction Permit would reduce the impacts of soil erosion during decommissioning, remediation, and redevelopment activities to a less-than-significant level. Compliance with the draft Municipal Permit for post-construction would reduce this impact to less than significant.

Tank Farm C. Implementation of the RAP at Tank Farm C would not require soil excavation. If the existing groundwater treatment system at the PRB were to be extended onto Tank Farm C in the future, minor excavations would occur associated with groundwater monitoring,

well/biosparge installations, and possibly trenching for utilities. Any intrusive work at Tank Farm C would be subject to the provisions of the RMP for Tank Farm C which requires specific dust control measures, stormwater controls, and soil management procedures. Therefore, RAP implementation would result in less-than-significant soil erosion impacts.

PST Tank Farm. Implementation of the RAP does not include any excavations. The area is currently being used as a staging area for Tank Farm C redevelopment and would also be used for a staging area for Tank Farm S redevelopment activities. The SWPPP, to be prepared for Tank Farm S decommissioning, remediation, and redevelopment would include implementation of soil erosion prevention measures for PST Tank Farm. Therefore, soil erosion impacts for PST Tank Farm would be less than significant. Following completion of Tank Farm S redevelopment activities, the surface of PST Tank Farm would be compacted and restored to conditions prior to use of the tank farm as staging areas for Tank Farm C construction, and Tank Farm S decommissioning and redevelopment; therefore erosion potential would be less than significant.

Fuel Transfer Station. Implementation of the RAP at the Fuel Transfer Station does not include any excavation. If the groundwater treatment system at the PRB were to be expanded or enhanced within the Fuel Transfer Station boundaries in the future, intrusive work would be conducted in accordance with the Fuel Transfer Station RMP which requires specific dust control measures, stormwater controls, and soil management procedures. Therefore, RAP implementation would result in less-than-significant soil erosion impacts.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (No Impact)*

Implementation of the RAPs at SFTF and associated Tank Farm S redevelopment, the SCR, and SMP would not be expected to induce landslides (there are no landslides identified in the area) and potentially cause lateral spreading, subsidence, liquefaction, or collapse. Therefore, this is not a project impact.

d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (No Impact)*

The SFTF is underlain by artificial fill, which is underlain by Young Bay Mud. The fill generally consists of compacted loose, sands, silty sands, and clayey sands. Such materials do not exhibit shrink-swell characteristics. While the Young Bay Mud could be expansive, it is saturated and therefore would not be alternately dried and wetted and therefore not cause potential significant impacts to structures due to expansiveness. There is therefore no impact to SFTF structures from expansive soils.

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? (No Impact)*

The SFTF is serviced by sanitary sewers. There are no septic tanks or alternative waste water disposal systems. Therefore, there would be no impacts from RAP implementations and associated redevelopment of Tank Farm S, the SCR, or SMP at any of the four facilities.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
7. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than significant)*

Greenhouse gases (“GHGs”) are gases that trap heat in the atmosphere and are believed to be contributing to the cumulative change in the average weather of the earth that may be measured by changes in temperature, precipitation, storms, and wind. In 2006, California legislature passed Assembly Bill 32 (“AB-32”), the California Global Warming Solutions Act of 2006, which requires California reduce GHG emissions to 1990 levels by 2020. AB-32 also required that CARB begin developing discrete early actions to reduce GHGs, while also preparing a scoping plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to be adopted by the start of 2011. Based on its 1990-2004 inventory work, CARB staff recommended 427 million metric tons of carbon dioxide equivalent⁶ as the total statewide GHG 1990 emissions level and 2020 emissions limit (CARB, 2007). CARB approved the 2020 limit on 6 December 2007. CARB estimated California’s 2008 GHGs emissions for 2008 at 473.76 million tons carbon dioxide equivalent (CARB, 2010).

Adoption of the SCR and the SMP would not result in significant GHG emissions. Remedial actions such as performing groundwater monitoring at the SFTF and operation and maintenance activities for the PRB system and operations and maintenance of Tank Farm S have been on-going for the last several years and these emissions represent existing conditions.

Tank Farm S. The primary sources of GHG emissions for remediation and associated redevelopment of Tank Farm S are from off-road equipment exhaust, which would be emitted during the remedial activities, such as soil excavation and off-site transport for disposal, and construction of the maintenance and office building. Implementation of the RAP, SCR, and SMP also includes groundwater monitoring, which would not differ significantly from current operations; therefore, the operational GHG emissions from the new facility are not a new impact.

The BAAQMD has not established thresholds of significance for construction GHG emissions, but recommends they be quantified and evaluated in relation to meeting AB-32 GHG reduction goals. For preconstruction activities, which include the remedial activities and tank farm decommissioning, the estimated emissions from each activity were calculated based on the types

⁶ Carbon dioxide equivalent is the concentration of carbon dioxide that would cause the same level of radiative forcing as a given type and concentration of greenhouse gas.

of equipment and length of time each piece of equipment would be operated using emission factors from the CARB's OFFROAD2007 emissions model and BAAQMD's GHG Model. Construction GHG emissions during construction were estimated using URBEMIS2007 modeling software. The remedial and construction activities at Tank Farm S would generate an estimated 218 metric tons of carbon dioxide equivalent (see Appendix A for greenhouse gas and air quality calculations).

The BAAQMD's CEQA guidelines recommend incorporating best management practices to reduce GHG emissions during construction, where applicable. One of these best management practices is to recycle or reuse at least 50 percent of construction waste or decommissioning materials. The Tank Farm S remediation and associated redevelopment would recycle all scrap metal generated from decommissioning of the tanks and pipes. Asphalt and cement wastes would also be recycled and excavated soil would be reused on-site to the extent that the soil quality meets Tier 2 soil cleanup goals, thus reducing emissions from trucks hauling excavated soil to permitted landfills..

Since the remediation and associated redevelopment would be conducted in conformance with the best management practices recommended by BAAQMD's CEQA guidelines by recycling steel, asphalt, and concrete waste, the climate change impact from construction is not considered significant. Therefore, the emission of GHGs is considered a less-than-significant impact on global climate change.

Tank Farm C, PST Tank Farm, and Fuel Transfer Station. Implementation of the RAPs, SCR, and SMP for these three facilities involve activities that generally represent existing conditions (i.e., groundwater monitoring, well installations, and continued operation of the PRB). Therefore, this is considered a less-than-significant impact.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less than significant)

Control measures in the 2010 Clean Air Plan include energy and climate measures to reduce emissions of GHGs. Measures applicable to the SFTF include promoting energy conservation and energy efficiency in commercial and industrial buildings. The proposed building on Tank Farm S would be designed and constructed in accordance with California's building efficiency standards (Title 24 California Code of Regulations) which include standards to improve building energy efficiency; Title 24 requirements are, among other items responsive to Assembly Bill 32, The Global Warming Solutions Act of 2006, which mandates that California must reduce its GHG emissions to 1990 levels by 2020. In addition, recycling of wastes would occur for asphalt and steel; also, if possible, clean fill to be imported for the redevelopment of Tank Farm S may be obtained locally from the Port's Materials Management Program. Furthermore, all off-road equipment will be required to comply with Title 13 California Code of Regulations to reduce any idling of engines to less than five minutes. Therefore, implementation of the RAPs and associated Tank Farm S redevelopment, the SCR, and SMP would not conflict with any plan, policy, or regulation and this impact is considered less than significant.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
8. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project 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, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less than Significant)*

Tank Farm S. Implementation of the RAP would result in excavation of contaminated soils as part of the redevelopment of Tank Farm S, removal of fuel pipelines, and installation of a permanent recovery well. Soil excavations and fuel pipeline removals would be short-term activities and transport of soils for off-site disposal would therefore not be considered a routine activity. Furthermore, all transport of soils for off-site disposal would be conducted in

accordance with the RMP, which has specific measures for dust management on-site and tarping of trucks during transport.

Extraction of fluids from the proposed recovery well may occur for a long-term period (depending on the extent of product in the well); the extraction of fluids from the recovery well would be by vacuum extraction. The extraction would not result in a potential for a significant hazard to the public and the environment since: 1) extractions would occur into a vacuum truck on the tank farm and opportunities for upset (release to the environment) would be unlikely; and 2) workers engaged in extraction would perform work in accordance with a health and safety plan (in accordance with the RMP), which would include provisions for responding to emergencies, such as releases. Routine groundwater monitoring activities would generate excess, potentially contaminated groundwater; the water would be treated on-site prior to discharging to the sanitary sewer under permit from the East Bay Municipal Utility District (“EBMUD”). This is therefore considered a less-than-significant impact.

Tank Farm C and Fuel Transfer Station. Routine groundwater monitoring activities would generate excess, potentially contaminated groundwater; the purge water is collected for off-site disposal at a permitted facility. This is therefore considered a less-than-significant impact.

PST Tank Farm. The remedy for PST Tank Farm does not include groundwater monitoring. There is therefore no routine transport, use, or disposal of hazardous materials. Therefore, this is not an impact.

b) 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? (Less than Significant)

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP would be conducted in accordance with a site-specific health and safety plan that provides procedures for emergencies (i.e., releases of hazardous materials). In addition, a SWPPP would be required as part of the Construction General Permit (see discussion below, under Hydrology); the SWPPP would also include provisions for management of spills. Therefore, this is a less-than-significant impact.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (No Impact)

There are no schools located within one-quarter mile of the SFTF. Therefore, this is not an impact.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (No Impact)

The SFTF is on the list of sites compiled in accordance with the requirements of Government Code 65962.5 (also known as the “Cortese List”). The objective of the SCR, the SMP, and the RAPs is to remediate the SFTF facilities to ensure protection of the public health and

environment. Therefore, there would be no significant hazard to the public or the environment. This is not an impact.

- e) *For a project 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, would the project result in a safety hazard for people residing or working in the project area? (No Impact)*

The SFTF is located adjacent to the OIA. The land uses at SFTF would not change as a result of RAP implementations or redevelopment of Tank Farm S. The SFTF would continue to be operated for fuel storage, transfer, and related services. Prior to the use of major pieces of equipment associated with RAP implementations and Tank Farm S redevelopment, the type (including heights) and quantity of remediation and construction equipment would be submitted to the FAA for review and approval by Form 7460-1. Therefore, this is not an impact.

- f) *For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (No Impact)*

There are no private airstrips located near SFTF. Therefore, this is not an impact.

- g) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)*

There are no adopted emergency response or emergency evacuation plans for the SFTF. Tank Farm S operates in accordance with a Facility-Specific Response Plan in accordance with the requirements of Title 40 Code of Federal Regulations, Part 112. This is therefore not an impact.

- h) *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? (No Impact)*

The SFTF is located near stormwater retention basins and industrial facilities; there are no wildlands by the SFTF. In addition, the SFTF area is not identified as a Fire Hazard Severity Zone by the California Department of Forestry and Fire Protection (CAL FIRE, 2010). Therefore, this is not an impact.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
9. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Violate any water quality standards or waste discharge requirements? (No Impact)*

The purpose of the SCR, SMP, and RAPs is to ensure that water quality and beneficial uses of water of the State are not adversely affected; this is proposed to be accomplished by reducing the volume of contaminated soil, extraction of groundwater, treatment of groundwater, and monitoring for the MNA progress. Therefore, there is no impact.

b) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to*

a level which would not support existing land uses or planned uses for which permits have been granted)? (No Impact)

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and the SMP would not result in depletion of groundwater resources or interfere substantially with groundwater recharge. The groundwater underlying the SFTF is not considered a potential drinking water source aquifer and is of limited extent; the shallow groundwater discharges to the surrounding stormwater retention basins; there are no planned uses of the shallow groundwater. Therefore, this is not an impact.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? (No Impact)

There are no streams or rivers traversing the SFTF and the surface drainage patterns would not be significantly altered by implementation of the RAPs at any of the four SFTF facilities, redevelopment of Tank Farm S, the SCR, or SMP. Therefore, this is not an impact.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (Less than Significant)

Tank Farm S. There are no streams or rivers traversing Tank Farm S. As part of Tank Farm S remediation, portions of the tank farm would be covered by asphalt or compacted clean fill. The asphalt cover on the tank farm would be reduced, relative to existing conditions; the area around the proposed administrative building would be landscape stones and areas around the parking area (Figure 4) would include compacted soil with surficial gravels. Therefore, runoff would be reduced relative to existing conditions and this is a less-than-significant impact.

Tank Farm C and Fuel Transfer Station. No streams or rivers traverse these facilities. Any construction, as part of RAP implementations, would be at or below ground surface. Therefore, there would be no impacts to on- or off-site flooding.

PST Tank Farm. There are no streams or rivers traversing this tank farm. RAP implementation does not include any proposed structures on the former tank farm, and the ground surface, after temporary use as a staging area for Tank Farm S redevelopment, would consist of compacted fill. Therefore, there would be no flooding impacts on- or off-site.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (Less than Significant)

Tank Farm S. There are no active stormwater drainage systems at Tank Farm S. During redevelopment of Tank Farm S and soil excavation activities, stormwater would be managed in accordance with the General Construction Permit. Following completion of soil excavation and redevelopment of Tank Farm S, stormwater management would be in accordance with Port requirements in the draft Municipal Permit. Compliance with the General Construction Permit

during remediation and redevelopment and Port requirements for post-construction conditions would make this impact less than significant (See also analysis in Section 7.6.b, above).

Tank Farm C, PST Tank Farm, and Fuel Transfer Station. There are no stormwater drainage systems at any of these three facilities. See also analysis in Section 7.6.b, above.

f) *Otherwise substantially degrade water quality? (No Impact)*

The purpose of the SCR, SMP, and RAPs is to ensure that water quality and beneficial uses of water of the State are not adversely affected; this is proposed to be accomplished by reducing the volume of contaminated soil, extraction of groundwater, treatment of groundwater, and monitoring for the MNA progress. Therefore, there is no impact.

g) *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (No Impact)*

The implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP do not include construction of housing in the SFTF. Therefore, there are no impacts.

h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows? (No Impact)*

Tank Farm S. Tank Farm S has been mapped by the Federal Emergency Management Agency (“FEMA”) on the Federal Insurance Rate Map (“FIRM”) as being located in Zone X, “Other Flood Areas” (FEMA, 2009). Other Flood Areas are defined as areas of 0.2 percent annual chance flood and areas of 1 percent (also known as the 100-year flood) chance flood with an average depth of less than 1 foot or with drainage areas less than 1 square mile and areas protected by levees from the 1 percent annual chance flood. The secondary containment currently surrounding the four ASTs covers an area of about 31,000 square feet; as part of Tank Farm S redevelopment, the secondary containment would be removed and an office and maintenance building would be constructed; the new building would be about 6,700 square feet. Therefore, any impediment to flood flows or redirection of flood flows would be reduced relative to existing conditions as part of Tank Farm S redevelopment. Therefore, this is not an impact.

Tank Farm C and Fuel Transfer Station. These two facilities are mapped similarly to Tank Farm S by FEMA (FEMA, 2009). Implementation of the RAPs for Tank Farm C and the Fuel Transfer Station would not result in the construction of aboveground facilities. Therefore, there would be no impacts related to impediment of flood flows or redirection of flood flows.

PST Tank Farm. This tank farm is mapped by FEMA (2009) as being located in “Other Areas”. Other Areas are determined to be outside the 0.2 percent annual chance flood. Implementation of the RAP for this tank farm does not include construction of any structures. Therefore, there are no impacts related to impediment to or redirection of flood flows.

i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam? (Less than Significant)*

Tank Farm S. The SFTF area has been mapped by ABAG (2007b) as being subject to inundation by the Upper San Leandro and Chabot reservoirs. Any inundation from a dam failure event would be reduced relative to existing conditions because the ASTs and secondary containment (about 31,000 square feet) at the tank farm would be removed as part of redevelopment activities and a new office and maintenance building would be constructed with a smaller footprint (about 6,700 square feet). Implementation of the RAP would not result in the construction of any remedial structures aboveground; therefore, no remedial structures would be affected.

Levees surround the OIA to prevent inundation from the San Francisco Bay. The FIRM map identifies the coastal flood zone on the Bay side of the levee near SFTF to have an elevation of 10 feet North American Vertical Datum 1988 (“NAVD 88”). The elevation of the levee crest structure on the outboard side of the levee near the SFTF varies between 11 and 14 feet NAVD88. Therefore, the existing levee would be protective of the SFTF. See also the analysis in section 7.9.h, above, regarding flooding. This is considered a less-than-significant impact.

Tank Farm C, PST Tank Farm, and Fuel Transfer Station. Implementation of the RAPs for these three facilities would not result in any changes to the physical layout of the facilities. Any new structures (e.g., new groundwater monitoring wells or expansion of the PRB treatment system) would be belowground and there would not be any change in personnel accessing the facilities. Therefore, potential flooding from a failure of a dam or levee would be less than significant.

j) Inundation by seiche, tsunami, or mudflow? (Less than Significant)

Since the SFTF is relatively level, there would not be any expected mudflows. Garcia and Houston (1975) have estimated tsunami run-up heights in the Bay, including in areas in the 7.5-minute quadrangle topographic map for San Leandro (where the SFTF is located). The 100-year recurrence interval tsunami was estimated to have a run-up of 8.19 feet.⁷ Since the levees at the SFTF range from 11 to 14 feet NAVD88, this is considered a less-than-significant impact.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	--	------------------------------	-----------

10. LAND USE AND PLANNING. Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

⁷ The predicted run-up was 4.5 feet National Geodetic Vertical Datum 1929 (“NGVD”). This is equivalent to 8.19 feet NAVD88.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Physically divide an established community? (No Impact)*

The SFTF is located in the industrial OIA and there are no established residential communities within about 1 mile of the SFTF. Implementation of the RAPs and associated redevelopment of Tank Farm S, SCR, and SMP would not affect established communities. Therefore, this is not an impact.

b) *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (No Impact)*

The OIA area, including SFTF, is currently zoned for use as commercial/industrial purposes, and is classified as “IG” (General Industrial/Transportation) on the City of Oakland’s General Plan and Zoning Map (City of Oakland, 2008a). Activities associated with implementation of the RAPs and redevelopment of Tank Farm S, the SCR, and SMP are consistent with the General Plan designation and zoning. Therefore, this is not an impact.

In 2006, the Port prepared the Oakland International Airport Master Plan (“Master Plan”) in accordance with Federal Aviation Administration requirements (Port, 2006). The purpose of the Master Plan is to provide a framework to guide future airport development.

The Master Plan land use maps include short-term (2010 to 2012) and long-term (2025) land uses. The land use maps represent a synthesis of potential development for the airport; they are subject to change as the airport and demand for its various facilities evolve over time. The Master Plan states that although specific land uses have been identified for 2025, no specific projects have been identified. Environmental review, financial planning, and engineering would be required before any of the potential future land uses could proceed.

For the short-term time frame, the Master Plan identifies the uses of the SFTF as “airline-related support” facilities. Airline-related support facilities include cargo support, fuel, ground service equipment maintenance and storage and parking, airport rescue and firefighting, and fuel storage.

For the long-term time frame, the Master Plan designates the SFTF area, except for Tank Farm S, as “passenger facilities.” Passenger facilities would consist of passenger and/or employee parking areas. According to the plan, Tank Farm S would remain a jet fuel storage facility.

Since the Master Plan was finalized in 2006, several land use changes and lease changes have occurred at the SFTF and may occur in the future. For example, a decision was made several years ago (after development of the Master Plan) to build new, state-of-the-art fuel storage facilities at Tank Farm C and to decommission the ASTs and related pipelines and other

infrastructure at Tank Farm S. Implementation of the RAPs would not be inconsistent with the Master Plan. Therefore, this is not an impact.

The Bay Conservation and Development Commission (“BCDC”) is responsible for implementing the provisions of the Coastal Zone Management Act and the San Francisco Bay Plan guides future uses of the Bay. BCDC’s jurisdiction extends from the San Francisco Bay line of mean high tide and over a 100-foot shoreline band inland from the line of mean high tide (Figure 3). The Fuel Transfer Station is partially within BCDC jurisdiction. However, no remediation activities proposed by the RAP for the Fuel Transfer Station would occur within the area under the jurisdiction of BCDC. Therefore, this is not an impact.

c) *Conflict with any applicable habitat conservation plan or natural community conservation plan? (No Impact)*

There is no habitat conservation plan or natural community conservation plan for the SFTF or vicinity. Therefore, this is not an impact.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
11. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State? (No Impact)*

The SFTF is underlain by artificial fill. There are no known mineral resources at or near the SFTF. Therefore, this is not an impact.

b) *Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)*

Refer to the analysis in section 7.11.a, above.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
12. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project 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, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less than Significant)*

Tank Farm S. Implementation of the RAP and the associated redevelopment of Tank Farm S would generate noise during building construction, soil excavation and removal, pipeline removal, and routine groundwater monitoring activities. During the operational phase, the proposed project would not cause significant amounts of noise and any noise generated would be overshadowed by the existing noise conditions of the airport area.

The City of Oakland has developed significance thresholds for construction noise generated between 7 a.m. and 7 p.m. on weekdays (City of Oakland, 2008b). For projects lasting less than 10 days, the noise significance threshold is 80 A-weighted decibels (“dBA”) at the nearest residential property line and 85 dBA at the nearest commercial property line. For projects lasting more than 10 days, the noise significance threshold is 65 dBA at the nearest residential property line and 70 dBA at the nearest commercial property line. Because the SFTF is located in near proximity of the Oakland/San Leandro boundary, the noise ordinance for San Leandro is also

relevant. San Leandro's General Plan lists 60 dBA, measured as Community Noise Equivalent Level or day-night average level⁸ as normally acceptable for residential land uses.

The U.S. Environmental Protection Agency ("EPA") has found that the typical one-hour equivalent noise level ("L_{eq}") from excavation activities for public works roads, highway, sewers, and trenches in suburban areas with an ambient noise level of 50 dBA is 79 to 89 dBA L_{eq} at a distance of 50 feet (EPA, 1971). Implementation of the RAP and tank farm redevelopment at Tank Farm S may include pile driving and the noise from impact pile driving is estimated to be 101 dBA at 50 feet (FTA, 2006). Noise attenuates at a rate of approximately 7.5 dBA for every doubling of distance across soft ground, as is typical of the SFTF (EPA, 1971). Conservatively assuming that the typical noise from decommissioning, remediation, and construction at Tank Farm S would result in a noise level of 89 dBA L_{eq} at 50 feet, a separation of 450 feet would be required to reduce the noise level to below 65 dBA and a separation of 300 feet would be required to reduce the noise level to below 70 dBA. If impact pile driving were to occur, a separation of 1,375 feet would be required to reduce the noise level to below 65 dBA and a separation of 900 feet would be required to reduce the noise level to below 70 dBA.

The nearest residential communities are located about over 5,000 feet east of Tank Farm S. The nearest commercial, non-Port properties are located about over 2,500 feet to the southeast of Tank Farm S. Therefore, the noise impacts from remediation and redevelopment equipment would be less than significant.

Transport of excavated soil would be by trucks. The trucks would either transport the soil to the Port's Materials Management Program site for storage and ultimate reuse at Ron Cowan Parkway or transport the soil to a permitted facility via Neil Armstrong Way to Airport Drive to 98th Avenue to access I-880. The trucks would be traveling along major thoroughfares and not residential areas. This is a less-than-significant impact.

Temporary construction and remediation workers would be exposed to construction equipment noise as well as the existing noise environment in the industrial OIA area. Construction and remediation workers would be working in accordance with a site-specific health and safety plan (per Title 8, California Code of Regulations), which would include noise protection measures. Future employees at Tank Farm S would be working in an industrial area, dominated by intermittent high noise levels from airplane operations, similar to existing conditions. These impacts would therefore be less than significant.

Tank Farm C, PST Tank Farm, and Fuel Transfer Station. Implementation of the RAPs for these three facilities would not involve activities that would generate significant levels of noise relative to existing conditions. Activities would include routine groundwater monitoring, similar to activities currently being undertaken, or installation of soil borings/groundwater monitoring wells, or enhancement of existing groundwater treatment system(s). This would involve operation of a drill rig and use of support trucks; these activities are similar to those that have already occurred intermittently at the facilities. Therefore, this is a less-than-significant impact.

⁸ Community Noise Equivalent Level (CNEL) is used to describe the average noise level during a 24-hour period, with a penalty of 5 dB added to sound levels between 7 and 10 PM, and a penalty of 10 dB added to sound levels between 10 PM and 7 AM. The term Day-Night Average Level (Ldn) is similar, but only includes the 10 dB penalty for 10 PM – 7 AM noise.

b) *Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels? (Less than Significant)*

Implementation of the RAPs and associated Tank Farm S redevelopment, SCR, and SMP would not include pile driving or other vibratory equipment, except possibly at Tank Farm S. At Tank Farm S, the foundation design for the proposed building has not been finalized, but could potentially include pile driving if the building were to be constructed on piles instead of slab-on-grade. In addition, vibratory equipment could be used if shoring of excavations were deemed necessary during soil excavation. Pile driving and shoring installation would result in some groundborne vibration and possibly groundborne noise.

City of Oakland's Municipal Code, Section 17.120.060 states that "*all activities, except those located within the Industrial General ("IG") or Heavy Industrial Zone ("M-40 zone"), or in the IG or General Industrial Zone ("M-30") zone more than four hundred feet from any residential zone boundary, shall be so operated as not to create a vibration which is perceptible without instruments by the average person at or beyond any lot line of the lot containing such activities. Ground vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempted from this standard.*" The project is zoned IG and there are no residential properties within 400 feet. Therefore, the proposed project would be exempt from the vibration standard. In addition, the impact would be the result of temporary construction work, which provides further exemption from the vibration standard.

Since the City of San Leandro boundary is near the SFTF, vibration ordinances of the City of San Leandro were also considered. However, the City of San Leandro's Municipal Code does not specifically address vibration impacts.

Table 6 presents vibration levels from pile driving that could be expected at distances of 25, 50, and 75 feet from a pile driving activity. In general, cosmetic or threshold damage to buildings can occur at vibrations over 0.5 inches per sec ("in/sec") peak particle velocity ("PPV"). This level is consistent with the U.S. Bureau of Mines' threshold cracking criteria of 0.5 in/sec PPV for low frequencies and 2.0 in/sec PPV for high frequencies. Continuous vibration caused by pile drivers may cause annoyance, but would not cause structural damage if the continuous vibration were less than 0.2 in/sec PPV (Wilson and Ihrig, 2007). This level is consistent with the Federal Transit Administration's recommended vibration threshold criterion of 0.2 in/sec for fragile buildings (FTA, 2006). As shown in Table 6, pile-driving activities could exceed this threshold within approximately 50 feet. Impact pile-driving activities could exceed this threshold if they occur closer than 100 feet to a receptor.

Table 6: Vibration Levels and Abatement Potential of Construction Equipment Vibration

Equipment	Peak Particle Velocity (PPV)		
	PPV at 25 feet (in/sec)	PPV at 50 feet (in/sec)	PPV at 100 feet (in/sec)
Pile Driver (Impact) – Upper Range	1.518	0.537	0.19
Pile Driver (Impact) – Typical	0.644	0.228	0.081
Pile Driver (Sonic) – Upper Range	0.734	0.26	0.092
Pile Driver (Sonic) – Typical	0.17	0.06	0.021

Source: FTA, 2006

Notes:

Vibration levels for pile driving at 25 feet are based on measured data near various types of equipment and assume normal propagation conditions. The following propagation adjustment was applied to estimate vibration levels at 50 and 100 feet.

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

where:

PPV (equip) is the peak particle velocity in in/sec of the equipment adjusted for distance,

PPV (ref) is the reference vibration levels in in/sec at 25 feet as listed above,

D is the distance from the equipment to the receiver.

It should be noted that vibration propagation characteristics would depend on a number of factors, including the type and condition of geologic materials, depth of construction, and type of construction equipment and activity.

Since the nearest structure is over 100 feet from the proposed building location at Tank Farm S, pile driving would not result in structural damage. Therefore, vibration and groundborne noise would be a less-than-significant impact.

- c) *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (No Impact)*

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP would not include noise sources that could result in permanent increases in noise over existing conditions. Groundwater monitoring, which currently occurs on a regular basis, would continue and tank farm operational activities, which currently occurs at Tank Farm S would continue on the redeveloped Tank Farm S and Tank Farm C. Therefore, this is not an impact.

- d) *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (Less than Significant)*

Refer to the analysis in section 7.12.a, above.

- e) *For a project 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, would the project expose people residing or working in the project area to excessive noise levels? (Less than Significant)*

Refer to the analysis in section 7.12.a, above.

- f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? (No Impact)*

There is no private airstrip in the vicinity of the SFTF or OIA. Therefore, this is not an impact.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
13. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (No Impact)*

Implementation of the RAPs and associated Tank Farm S redevelopment, SCR, and SMP would not include construction of new homes or businesses or extension of infrastructure. Therefore, this is not an impact.

b) *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (No Impact)*

Refer to the analysis in section 7.13.a, above.

c) *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? (No Impact)*

Refer to the analysis in section 7.13.a, above.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
--	---	---	---	----------------------

14. PUBLIC SERVICES.

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection, police protection, schools, parks, other public facilities? (No Impact)*

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP would not require any increased fire protection, police protection, schools, parks, or other public facilities because existing facilities are available for fire and police protection and no new residences would be constructed requiring parks or schools. Therefore, this is not an impact.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
--	---	---	---	----------------------

15. RECREATION.

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a) <i>Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (No Impact)</i>				

Implementation of the RAPs and associated Tank Farm S redevelopment, the SCR, and SMP would not result in construction of residences or other land uses with demand for recreational facilities. Therefore, this is not an impact.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (No Impact)*

Refer to the analysis in section 7.15.a, above.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
16. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a) *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (Potentially Significant unless Mitigation Incorporated)*

California law (Government Code Section 65080) requires urban areas develop and update a congestion management program to address congestion problems. The Alameda County Congestion Management Agency (“CMA”) has prepared a congestion management plan (“CMP”) for Alameda County in cooperation with the Metropolitan Transportation Commission, transit agencies, local governments, the California Department of Transportation (“Caltrans”) and the Bay Area Air Quality Management District.

The CMP’s goal is to improve two different roadway systems: the designated CMP roadway network (“CMP-network”); and the broader Metropolitan Transportation System (“MTS”). The CMP-network is used to monitor performance in relation to established level of service (“LOS”) standards. The MTS is used in the CMA’s Land Use Analysis Program.

The CMP-network includes state highways and principal arterials that meet all minimum criteria (carry 30,000 vehicles per day; have four or more lanes; is a major cross-town connector; and connects at both ends to another CMP route or major activity center). In 2007, the City of Oakland conducted 24-hour traffic counts on Hegenberger Road between I-880 and Doolittle Drive. The traffic counts collected and other characteristics of the roadway met all the Principal Arterial criteria for inclusion in the CMP-network. Accordingly, a 1.7-mile segment of Hegenberger Road between I-880 and Doolittle Drive was added to the network.

The long-term goals of the CMP are to improve mobility, air quality, transit use, economic vitality, freight movement, and serviceable operation of existing facilities. The CMP also seeks to reduce the need for new highway facilities over the long term and to make the most efficient use of existing facilities through Travel-Demand Management (“TDM”).

TDM includes four programs: 1) requiring local jurisdictions to adopt and implement guidelines for site design that enhance transit, pedestrian, and bicycle access; 2) support for local jurisdiction programs such as the parking cash-out program, the guaranteed ride home program, and telecommuting; 3) provide financial support for coordinated transit, high-occupancy vehicle use, development and maintenance of park-and-ride lots, implementation of ramp metering,

compliance with American with Disabilities Act, and bicycle and pedestrian improvements; and 4) actions that employers may take to promote and encourage alternative modes of travel.

Tank Farm S. RAP implementation and associated redevelopment would result in temporary increased traffic on local roadways. The temporary increases in traffic would result from off-haul of the decommissioned ASTs, pipelines, and soil; the import of construction materials for the new maintenance and office building; import of clean soil; and construction worker vehicle trips. Worker vehicles coming to or leaving the SFTF would be expected to travel on Edward White Way, Neil Armstrong Way, Airport Drive, and Hegenberger Road. Excavated soil would be transported to either the Port's Materials Management Program site for storage and ultimate reuse within the Port at Ron Cowan Parkway or transported to a permitted facility via Neil Armstrong Way to Airport Drive to 98th Avenue to access I-880. The trucks would be traveling along major commercial and industrial thoroughfares and not residential areas.

During decommissioning of the existing tank farm and source soil excavation and removal, there could be increased traffic on Hegenberger Road, 98th Avenue, and possibly Ron Cowan Parkway. However, the project's impact on traffic and congestion would be temporary and would therefore not conflict with long-term traffic management plans. There is a major capital improvement project scheduled for the Hegenberger Road corridor, the Bay Area Rapid Transit District ("BART") link to OIA. The BART connector is planned for completion in 2014 and would be partially along Hegenberger Road; construction may occur during Tank Farm S remediation and redevelopment. To ensure that the haul trucks for soil and scrap metal do not conflict with the BART connector project, the mitigation measure, below, would reduce this potentially significant impact to less than significant.

The remediation and associated redevelopment does not include any modification to the local intersections, streets, highways and freeways, pedestrian and bicycle paths, or mass transit infrastructure. Portions of Edward White Way would be repaved, but that portion of Edward White Way is only used by OFFC. During the operational phase of Tank Farm S, there would be no conflict with the CMP, local ordinances or policies and, therefore, there would be no impact.

Tank Farm C, PST Tank Farm, and Fuel Transfer Station. Implementation of the RAPs for these three facilities would not involve activities that would generate significant amounts of traffic relative to existing conditions. Traffic would be associated with continued groundwater monitoring at Tank Farm C and the Fuel Transfer Station; a possible expansion of the treatment system at the PRB would not require more than a few trucks working in the area of the PRB during a short time period (probably less than a couple of weeks). Therefore, this is not an impact.

Mitigation Measure TRA-1 (Tank Farm S)

OFFC shall notify the Port Resident Engineer for Tenant Improvement of the Tank Farm S remediation and associated redevelopment to ensure that the haul trucks from the tank farm would not result in conflicts with the BART connector project. OFFC shall inform haul truck operators associated with Tank Farm S of detours that may be required, if any, and document that truckers follow the required detours.

- b) *Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? **Less than Significant***

The CMA uses LOS standards, as defined in the 1985 Highway Capacity Manual, to measure congestion. LOS definitions describe traffic conditions in terms of speed and travel time, volume and capacity, freedom to maneuver, traffic interruptions, comfort and convenience and safety. LOS is represented by letter designations, ranging from A to F. LOS A represents the best operating conditions and LOS F the worst. The purpose of these standards is to provide a quantitative tool to analyze the effects of land use changes and to monitor one system performance measure (i.e., congestion). The CMA is required to determine how well local governments meet the standards in the CMP, including how well they meet LOS standards. All CMP routes are required to maintain, at minimum, LOS standard of E, except for those areas designated as infill opportunity zones. The CMA conducts a LOS monitoring study every two years. The most recent reported results are reported in the CMA's 2008 level of Service Monitoring report. The report indicates that the LOS on Hegenberger Road ranges from B to D during peak hours.

Tank Farm S. During remediation and associated redevelopment, worker vehicles and trucks carrying material to and from the tank farm would increase traffic on 98th Avenue and Hegenberger Road. This impact would be temporary and not result in a long-term degradation of the LOS. During operation of the redeveloped tank farm, there would not be a significant increase in traffic because the number of workers would not increase by more than one employee relative to existing conditions and there would therefore not be a significant impact on the LOS. Therefore, this is considered a less-than-significant impact.

Tank Farm C, PST Tank Farm, and Fuel Transfer Station. Implementation of RAPs, SCR, and SMP for these three facilities would not involve activities that would generate significant amounts of traffic relative to existing conditions. Therefore, this is a less-than-significant impact.

- c) *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks? **(No Impact)***

Implementation of the RAPs and associated Tank Farm S redevelopment would not interfere with air traffic patterns. The type (including heights) and quantity of remediation and construction equipment would be submitted to the FAA for review and approval by Form 7460-1. Therefore, this is not an impact.

- d) *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? **(No Impact)***

Implementation of the RAPs and associated redevelopment of Tank Farm S, SCR, and SMP would not result in any new construction of roadways or realignment of existing roads. A portion of Edward White Way would be improved but the alignment would remain similar to existing conditions. Therefore, this is not an impact.

e) *Result in inadequate emergency access? (No Impact)*

Implementation of the RAPs and associated redevelopment of Tank Farm S would not interfere with emergency access since the roads surrounding SFTF are not designated emergency access roads. Therefore, this is not an impact.

f) *Conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? (Potentially Significant unless Mitigation Incorporated)*

Tank Farm S. Parking for OIA employees is located across Edward White Way, north of Tank Farm S. Access to the parking lot is off Edward White Way and Neil Armstrong Way and egress is on Neil Armstrong Way. A shuttle provides shuttle service 24 hours per day to the OIA terminals from the employee parking lot; some employees also walk along a sidewalk on Edward White Way across to the terminals. In addition, the Port is planning on replacement of Pumphouse #4, located west of Tank Farm S landward of Dike Road from mid-2011 to the beginning of 2012; replacement of Pumphouse #4 would require various construction equipment accessing Dike Road off Neil Armstrong Way. Underground pipelines (one pipeline is active and others are abandoned or idle) are located in Neil Armstrong Way. It is possible that these pipelines would be removed during the same time as Tank Farm S remediation and decommissioning is occurring (as an unrelated project to the proposed project); the removal of those pipelines would result in mobilization of construction equipment which could affect the intersection of Neil Armstrong Way and Edward White Way.

Remediation and associated redevelopment activities at Tank Farm S, as well as other planned projects in the SFTF vicinity could result in conflicts between trucks and heavy equipment and pedestrians, shuttles, employee vehicles accessing and exiting the employee parking lot. Trucks would be entering and exiting the tank farm hauling off excavated soil, hauling imported soil onto the tank farm, hauling pipes and decommissioned ASTs, hauling imported soil; in addition there would be mobilization and demobilization of heavy construction equipment. This is a potentially significant impact.

Implementation of Mitigation Measure TRA-2 would reduce this potentially significant impact to less than significant.

Tank Farm C, PST Tank Farm, Fuel Transfer Station. Implementation of the RAPs for these three facilities would not result in increases in traffic relative to existing conditions. Therefore, this is not an impact.

Mitigation Measure TRA-2 (Tank Farm S)

During truck hauling and construction equipment mobilization and demobilization, OFFC shall provide a traffic controller at the pedestrian cross walk by Edward White Way and, as-needed, at the entrance and exit to the employee parking lot to minimize conflicts with trucks and construction equipment. In addition, the Port Environmental Programs and Planning Division shall be notified one week in advance of mobilization, demobilization, and hauling activities.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
17. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, State, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (No Impact)*

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP would not exceed wastewater treatment requirements. The SFTF is sewered by EBMUD and no significant change in employees is expected at the SFTF (a net increase of one employee is not considered significant). Therefore, this is not an impact.

b) *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (No Impact)*

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP, would not require new water or wastewater treatment facilities. The SFTF is sewered by EBMUD and water is delivered by EBMUD and no significant change in employees is expected

at the SFTF (a net increase of one employee is not considered significant). Therefore, this is not an impact.

- c) *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (No Impact)*

Stormwater in the SFTF runs off into the adjacent retention basins and there are no stormwater conveyance facilities. Implementation of the RAPs and associated Tank Farm S redevelopment, the SCR, and SMP would not include construction of stormwater drainage facilities. Therefore, this is not an impact.

- d) *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (No Impact)*

Implementation of the RAPs and associated Tank Farm S redevelopment, the SCR, and SMP would not increase water use at the SFTF, since no significant increase in employees would occur. Therefore, this is not an impact.

- e) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (No Impact)*

Implementation of the RAPs and the associated redevelopment of Tank Farm S, the SCR, and SMP would not change wastewater treatment demands as no significant change in employees at the SFTF would occur (a net increase in one employee is not considered significant). Therefore, this is not an impact.

- f) *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? (Less than Significant)*

Implementation of the RAPs and the associated Tank Farm S redevelopment, the SCR, and SMP is estimated to generate about 16,100 tons of soil; of this volume, about 2,700 tons would be hauled off-site and 13,400 tons reused on-site (if the soil characterization indicates that the soil meets the Tier 2 cleanup goal). Only Tank Farm S is expected to generate any significant volumes of excess soil during remediation. Those soils that are determined to exceed the Tier 2 soil cleanup goal at Tank Farm S would be transported off-site to a permitted facility. The most proximate facility accepting contaminated soil would be Altamont Landfill. In 2003, Alameda County Waste Management Authority (2003) estimated that by 2010 the remaining capacity at that landfill would be in excess of 54.6 million tons. The excavated soil from RAP implementations and associated Tank Farm S redevelopment would be less than 0.005 percent of the remaining landfill capacity. Asphalt removed from the Tank Farm S would be either brought to the Port's Materials Management Program crushing and recycling facility at OIA for reuse or transported off-site to a non-Port recycling facility. Decommissioning of the ASTs and removal of pipelines at Tank Farm S would generate a waste stream consisting of steel; the steel would be either recycled or reconditioned for reuse. This is therefore considered a less-than-significant impact.

g) *Comply with federal, State, and local statutes and regulations related to solid waste? (No Impact)*

Implementation of the RAPs and associated redevelopment of Tank Farm S, the SCR, and SMP would be required to comply with federal, state, and local statutes and regulations related to solid wastes. As part of the Mitigation Monitoring Reporting Program for the Oakland International Airport, Airport Development Plan Supplemental EIR (Port, 2003), the Port also provides education and training to Port Facilities personnel and tenants in methods of solid waste reduction and recycling and provides handouts and literature. This is therefore not an impact.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------------	--	------------------------------------	--------------

18. MANDATORY FINDINGS OF SIGNIFICANCE.

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

a) *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? (Less than Significant)*

No significant impacts have been identified that would substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number, or restrict the range of a rare or endangered plant or animal, or eliminate examples of the major periods of California history or prehistory.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are*

considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) (No Impact)

Past projects in the SFTF area have included interim remediations at Tank Farm S, Tank Farm C, and PST Tank Farm, installation of a PRB at the Fuel Transfer Station, decommissioning of PST Tank Farm, and redevelopment of Tank Farm C. Currently planned projects in the SFTF area include the implementation of the RAPs and associated redevelopment of Tank Farm S. Probable future projects, not part of this proposed project, include Pumphouse #4 replacement, and removal of pipelines within Neil Armstrong Way. Implementation of planned and probable future projects could result in traffic conflicts at the Edward White Way and Neil Armstrong Way. The proposed Mitigation Measure TRA-1 would reduce potential cumulative impacts to less than significant. Other potentially significant impacts identified for the proposed project are site-specific and temporary. No incremental effects have been identified that could, when combined with other impacts, be considerable and result in cumulative effects.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant)

No significant environmental effects have been identified that could directly or indirectly cause adverse effects to human beings. The proposed project incorporates a site-specific RMP and health and safety measures to protect construction workers, commercial workers, and the public from effects from hazardous materials excavated, treated, or managed on-site or from residual hazardous materials remaining in the subsurface.

8.0 REFERENCES

Alameda County Waste Management Authority, 2003, Alameda County Integrated Waste Management Plan, Countywide Element, 26 February.

Association of Bay Area Governments (“ABAG”), 2007a, Hazards Maps, http://gis.abag.ca.gov/Website/liq_scenario_maps/viewer.htm, accessed on 13 September, 2010.

ABAG, 2007b, Dam Failure Inundation Hazard Map, accessed on 14 September 2010.

Bay Area Air Quality Management District (“BAAQMD”), 2010, *California Environmental Quality Act, Air Quality Guidelines*, June.

California Air Resources Board (“CARB”), 2010, California Greenhouse Gas Inventory for 2000-2008 – by Category as Defined in the Scoping Plan, 12 May.

CARB, 2007, Staff Report California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, 16 November.

California Department of Fish and Game (“CDFG”), 2010a, Natural Diversity Data Base, Special Plants, July.

CDFG, 2010b, Natural Diversity Database, Record Search of the San Leandro and Oakland West 7.5' USGS Quadrangle, October.

CDFG, 2009, Natural Diversity Data Base, Special Animals, July.

CDFG, 2003, Biogeographic Data Branch, List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database, September.

California Department of Forestry and Fire Protection (“CAL FIRE”), 2010, Fire Hazard Severity Zone Map, accessed on 14 September.

California Native Plant Society (“CNPS”), 2001, Inventory of Rare and Endangered Plants of California, Special Publication No. 1 (6th Edition), 2010 electronic edition update.

Garcia and Houston, 1975, Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound, November.

Hart, Earl W., Bryant, William A., rev, 1997 with supplements 1 and 2, 1999. Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps. California Department of Conservation, Division of Mines and Geology.

City of Oakland, 2008a, General Plan and Zoning, December.

City of Oakland, 2008b, CEQA Thresholds/Criteria of Significance Guidelines, 15 July.

Federal Transit Administration (“FTA”), U.S. Department of Transportation, 2006. Transit Noise and Vibration Impact Assessment, U.S. Department of Transportation May.

Port of Oakland (“Port”), 2006, Oakland International Airport Master Plan, March.

Port, 2003, Draft Oakland International Airport, Airport Development Plan Program Mitigation Monitoring and Reporting Program, September.

Port, 2000, Supplemental Draft EIS, Airport Development Project, September.

Port, 1999, Addendum to the Environmental Impact Report, Burrowing Owl Mitigation for Airport Development Program, December.

Sorensen, Paul, H., 1989, Fill and Development of the Oakland Airport, 1927 to 1989, 21 July.

URS Greiner Woodward Clyde, 1999, Burrowing Owl Management Plan, prepared for Port of Oakland, dated December 22.

U.S. Environmental Protection Agency (“EPA”), 1971, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, December.

United States Geological Survey (USGS), 1999, Earthquake Probabilities in the San Francisco Bay Region: 2000 to 2030 - A Summary of Findings, USGS Open-File Report 99-517.

Wilson, Ihrig & Associates, Inc., 2007. Technical Report, San Francisco Public Utilities Commission, New Crystal Springs Bypass Tunnel, Focused Environmental Impact Review, Noise and Vibration, July 23, 2007.

9.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following summary checklist indicates those potentially significant environmental impacts identified in the analysis in Section 7 that have not been mitigated to a level that is less than significant by measures proposed as part of the project or measures required by this environmental document.

- | | | |
|---|--|---|
| <input checked="" type="checkbox"/> None Identified | <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural Resources |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Hazards/Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

Based on the analysis contained in the IS, none of the resources in the summary checklist above would be significantly impacted.

10.0 INCORPORATION OF MITIGATION MEASURES INTO THE PROPOSED PROJECT

This environmental document recommends mitigation measures that are intended to avoid, minimize, or mitigate potential impacts. These measures are summarized here and the mitigation measure indicates which facility within each SFTF would be affected by the mitigation measure. The project sponsors will implement these measures as part of the proposed project, should the proposed project be approved by the Regional Water Board.

AIR-1 (Tank Farm S)

Reduce dust emissions. OFFC shall insure that contract specification require the following BAAQMD recommended basic construction mitigation measures during construction activities at Tank Farm S to reduce emission of particulate matter as dust.⁹

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, as necessary, to prevent wind-blown dust.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day, or as necessary. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Post a publicly visible sign with the telephone number and person to contact at the Port of Oakland regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

BIO-1 (Tank Farm S)

Protect California Species of Special Concern. A pre-construction survey shall be conducted for burrowing owl within 30 days of project-related ground-disturbing activities to determine whether any nesting owls are present and to provide for their passive relocation during the non-breeding season if nests are encountered. The survey area shall include the area proposed for excavation as well as all areas (to be identified and staked or otherwise identified) to be used for vehicle parking, staging area, stockpiling of soil, and soil borrow areas. The survey shall be conducted by a qualified biologist consistent with the latest Burrowing Owl Protocol and Mitigation Guidelines. If nesting owls are encountered, they would be passively relocated consistent with the Burrowing Owl Management Plan (URS

⁹ Bay Area Air Quality Management District, 2010, *California Environmental Quality Act, Air Quality Guidelines*, June.

Greiner Woodward Clyde, 1999) and the subsequent Burrowing Owl Mitigation Program (Port, 1999) developed for the OIA.

GEO-1 (Tank Farm S, Tank Farm C, Fuel Transfer Station).

Protect remedial systems from groundshaking effects. Following a seismic event of 5.3 or greater magnitude at nearby active faults, Tank Farm S, Tank Farm C, and the Fuel Transfer Station shall be inspected by a licensed engineer. The inspection shall include inspection of each groundwater monitoring well, any remedial system (if operated), such as the PRB and biosparge or bioventing system components, and vapor barriers or structures (if any). The licensed engineer shall make recommendations for restoring any damaged well or remedial system(s) to its intended functionality. The inspection, recommendations, and implementation of recommendations shall be documented in the annual report submitted to the Regional Water Board as part of the SMP requirements.

GEO-2 (Tank Farm S, Tank Farm C, Fuel Transfer Station).

Protect Remedial systems from liquefaction effects. Implementation of Mitigation Measure GEO-1 would reduce this impact to a less-than-significant level.

TRA-1 (Tank Farm S)

Reduce potential traffic conflicts with BART connector project. OFFC shall notify the Port Resident Engineer for Tenant Improvements of the Tank Farm S remediation and associated redevelopment to ensure that the haul trucks from the tank farm would not result in conflicts with the BART connector project. OFFC shall inform haul truck operators associated with Tank Farm S of detours that may be required, if any, and document that truckers follow the required detours.

TRA-2 (Tank Farm S)

Prevent conflicts with pedestrians and vehicles near Tank Farm S. During truck hauling, construction equipment mobilization and demobilization, OFFC shall provide a traffic controller at the pedestrian cross walk by Edward White Way and, as-needed, at the entrance and exit to the employee parking lot to minimize conflicts with trucks and construction equipment. In addition, the Port Environmental Programs and Planning Division shall be notified one week in advance of mobilization, demobilization, and hauling activities.

11.0 DETERMINATION OF APPROPRIATE ENVIRONMENTAL DOCUMENT

On the basis of this evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental document is required.



Digitally signed by Max Shahbazian
DN: cn=Max Shahbazian, o=Regional Water Board, San Francisco Bay Region, ou=Toxics Cleanup Division, email=mshahbazian@waterboards.ca.gov, c=US
Date: 2011.01.19 12:24:40 -08'00'

January 19, 2011

Signature

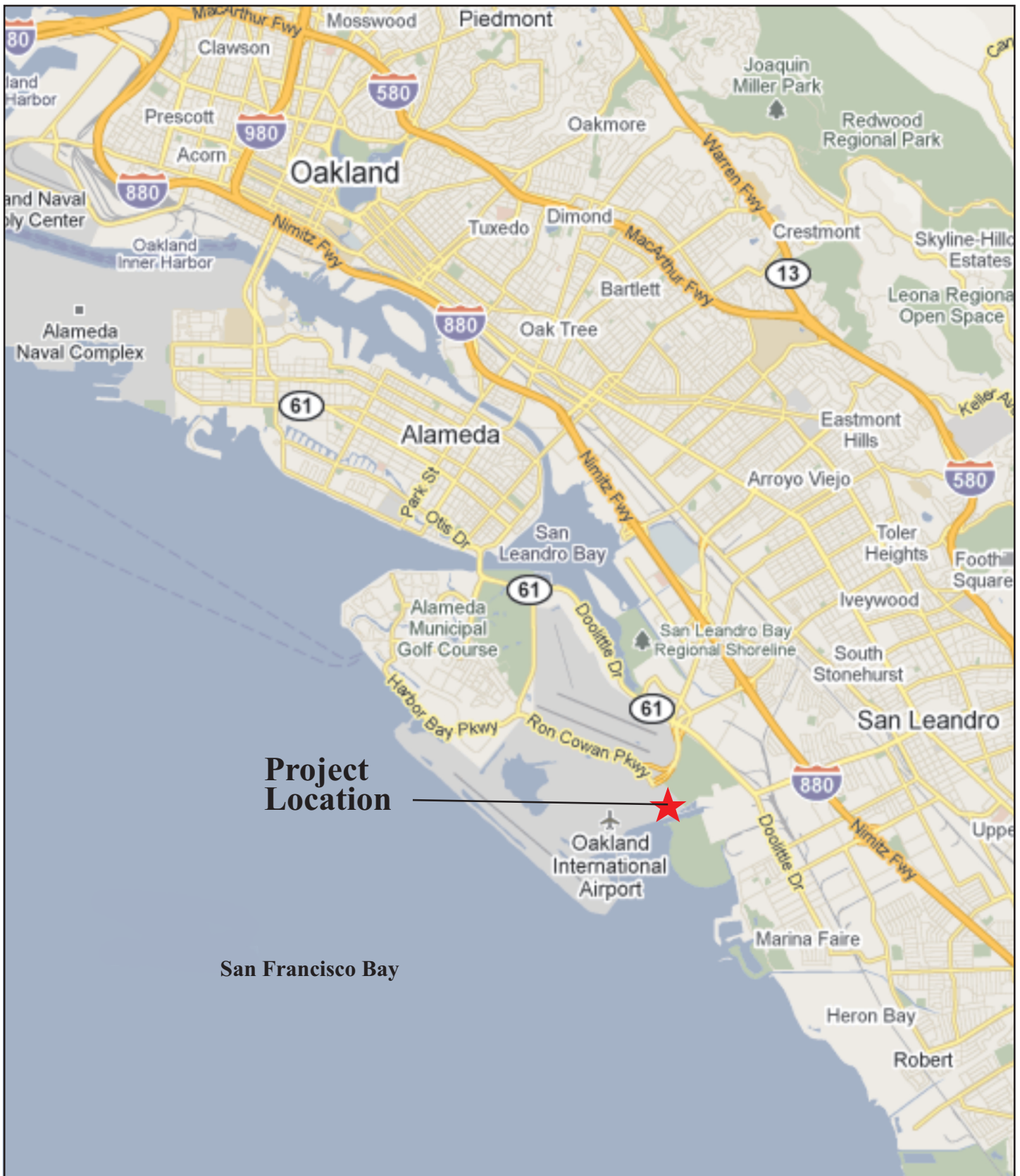
Date

Max Shahbazian

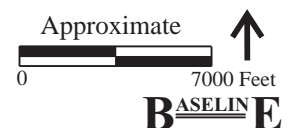
Printed Name

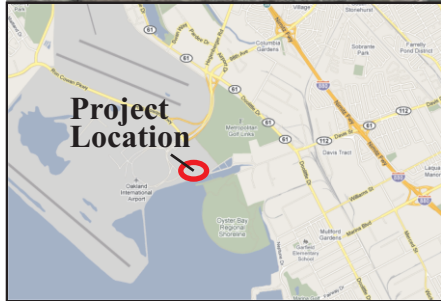
For

FIGURES

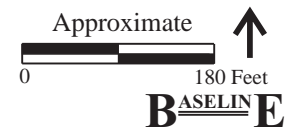


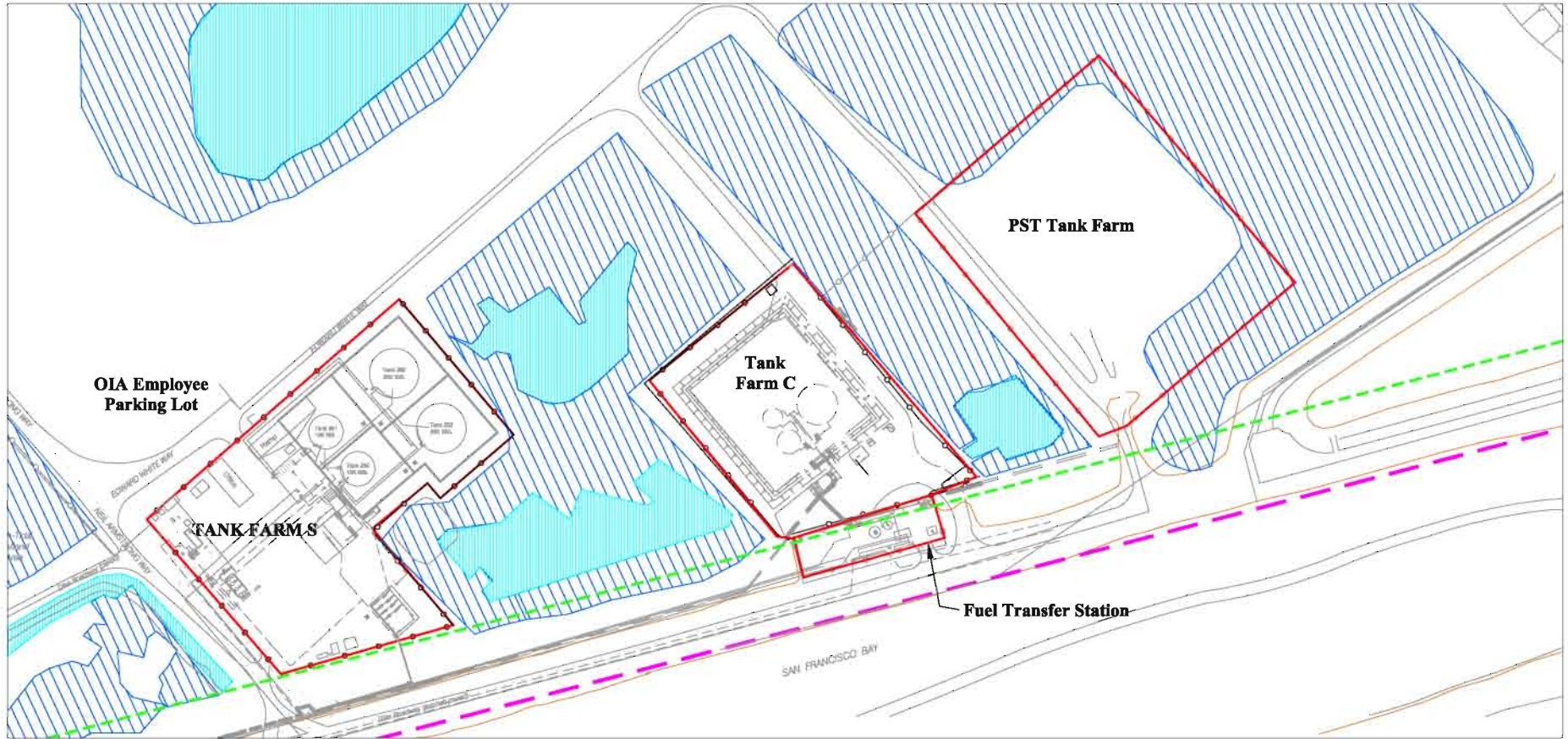
**South Field Tank Farm Initial Study
Oakland, California**









**South Field Tank Farm Initial Study
Oakland, California**



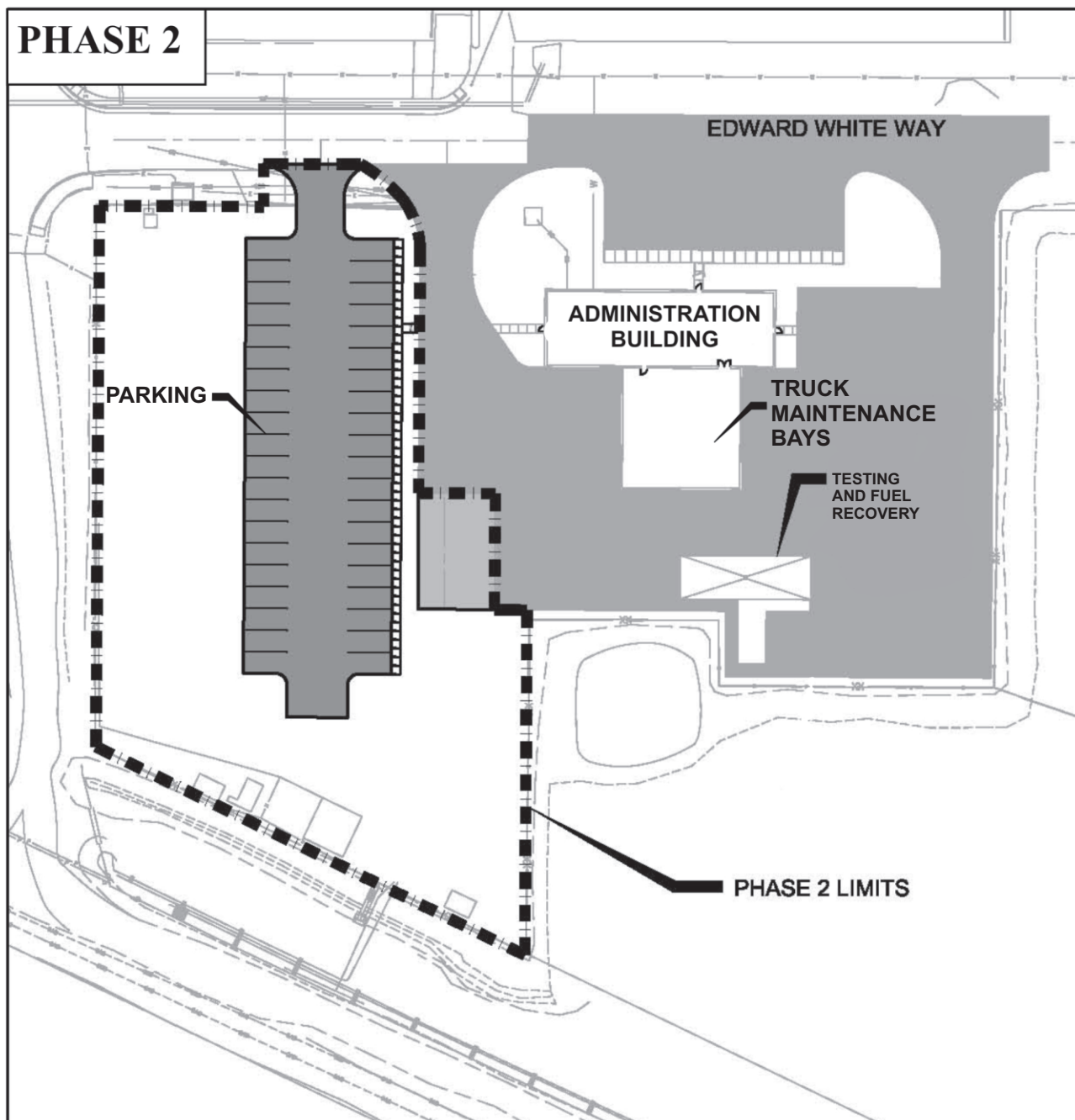
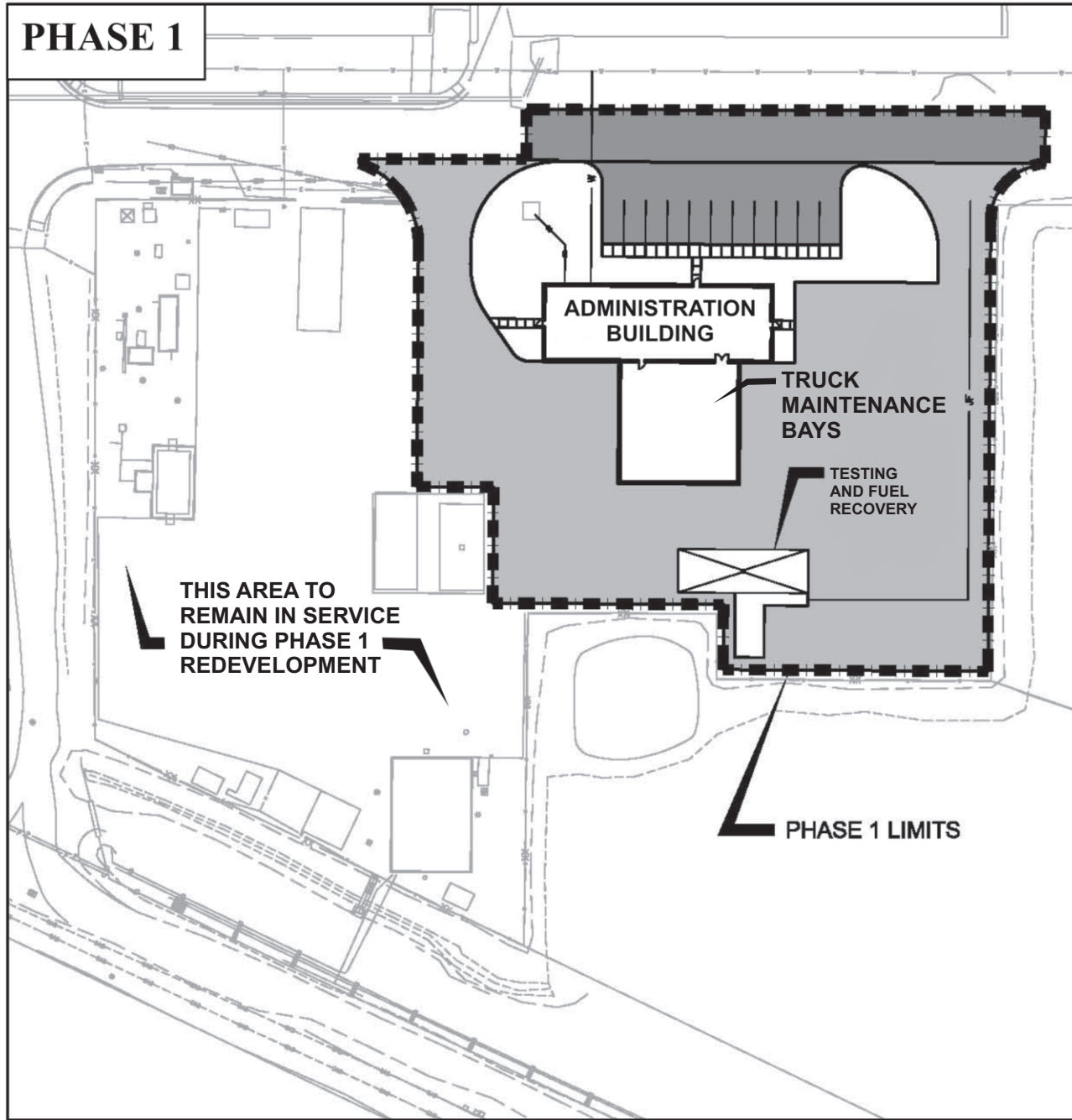


Legend

-  BCDC Jurisdictional Line
-  Mean High Tide Line
-  Wetlands (non-tidal) Subject to Section 404
-  Other Waters (non-Tidal) Subject to Section 404

South Field Tank Farm Initial Study Oakland, California





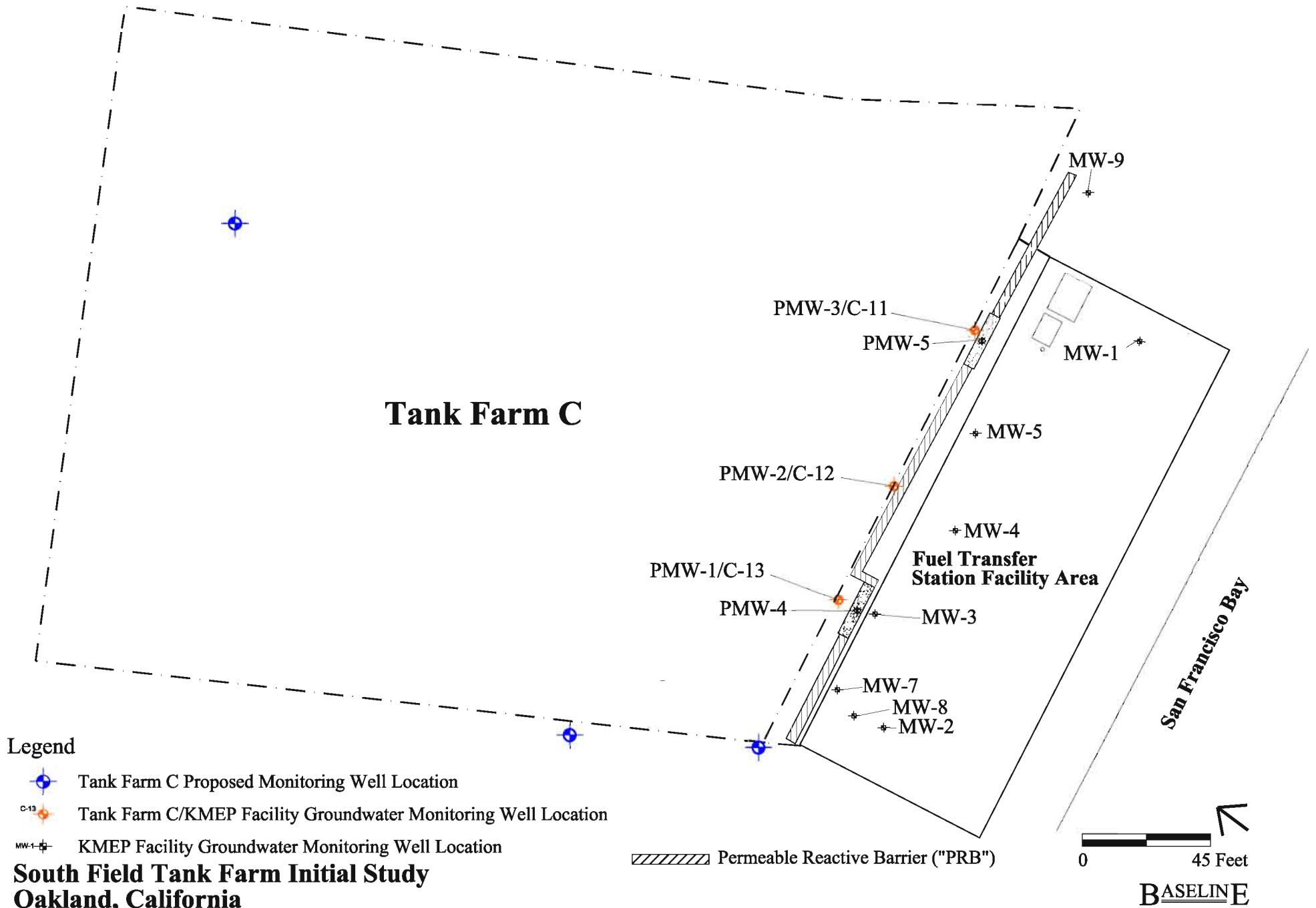
REMEDIATION ANTICIPATED AREAS FOR TANK FARM S
South Field Tank Farm Initial Study
Oakland, California

Figure 5



TANK FARM C AND FUEL TRANSFER STATION LAYOUT

Figure 6



**South Field Tank Farm Initial Study
Oakland, California**

Y5315-05.01582.Fnl.Fig6 - 1/19/2011

APPENDICES

APPENDIX A
GREENHOUSE GAS AND AIR QUALITY CALCULATIONS

Table A-1 Criteria Pollutant Emission and CO2 Calculations

Tank Farm S
Port of Oakland, California

PHASE I							Emission Factors						Priority Criteria Pollutants						CO2
Free Product Recovery Well Installation							ROG	CO	NOx	SOx	PM	CO2	ROG	CO	NOx	SOx ¹	PM10 ²	PM2.5 ³	CO2
Qty	Days	Hours per day	Total Hours	HP	Load Factor		(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)	
Drill Rig	1	1	8	8	250	0.75	0.275	0.810	4.14	0.043	0.104	426.608	0.91	2.7	14	0.0071	0.34	0.31	1,409
							ROG	CO	NOx	SOx	PM10	CO2	ROG	CO	NOx	SOx	PM10	PM2.5 ³	CO2
Qty	Days	Miles Round Trip	Trips	VMT/day			(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Support Truck ⁴	1	1	50	1	50		0.484	3.088	10.820	0.015	0.358	1,521.336	0.053	0.34	1.2	0.000083	0.039	0.035	168
Worker Vehicles ⁵	2	1	50	2	100		0.0580	1.852	0.205	0.0030	0.0070	308.616	0.013	0.41	0.045	0.000033	0.0015	0.0014	68
SUM													1.0	3.4	15	0.01	0.38	0.35	1,645
Remove Block Wall							ROG	CO	NOx	SOx	PM	CO2	ROG	CO	NOx	SOx ¹	PM10 ²	PM2.5 ³	CO2
Qty	Days	Hours per day	Total Hours	HP	Load Factor		(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Excavator	1	5	6	30	250	0.57	0.378	1.010	4.072	0.033	0.146	324.222	0.71	1.9	7.7	0.0031	0.27	0.25	3,053
Loader	1	5	6	30	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.61	1.7	6.9	0.0029	0.24	0.21	2,842
Water Truck	1	5	4	20	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	0.51	1.8	3.9	0.0015	0.23	0.21	1,425
Hydraulic Ram, Excavator-mounted	1	5	6	30	250	0.57	0.378	1.010	4.072	0.033	0.146	324.222	0.71	1.9	7.7	0.0031	0.27	0.25	3,053
Air compressor, Trailer-mounted	1	5	8	40	175	0.48	0.458	1.593	3.679	0.028	0.200	237.029	0.68	2.4	5.4	0.0021	0.30	0.27	1,754
Generator	1	5	8	40	120	0.74	0.923	2.822	5.727	0.045	0.454	420.920	1.4	4.4	9.0	0.0035	0.71	0.64	3,293
							ROG	CO	NOx	SOx	PM10	CO2	ROG	CO	NOx	SOx	PM10	PM2.5 ³	CO2
Qty	Days	Miles Round Trip	Trips	VMT/day			(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
10 cyd Dump Truck ⁴	8	5	69	8	111		0.484	3.088	10.820	0.015	0.358	1,521.336	0.12	0.75	2.6	0.00018	0.087	0.079	1,855
Worker Vehicles ⁵	6	5	50	30	300		0.0580	1.852	0.205	0.0030	0.0070	308.616	0.038	1.2	0.14	0.00010	0.0046	0.0042	1,020
SUM													4.8	16	43	0.02	2.1	1.9	18,295
Remove Aboveground Pipes							ROG	CO	NOx	SOx	PM	CO2	ROG	CO	NOx	SOx ¹	PM10 ²	PM2.5 ³	CO2
Qty	Days	Hours per day	Total Hours	HP	Load Factor		(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Crane	1	5	4	20	250	0.43	0.343	0.956	3.38	0.025	0.138	244.589	0.32	0.91	3.2	0.0012	0.13	0.12	1,158
Boom Truck	1	5	4	20	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	0.51	1.8	3.9	0.0015	0.23	0.21	1,425
Hydraulic Ram, Excavator-mounted	1	5	6	30	250	0.57	0.378	1.010	4.072	0.033	0.146	324.222	0.71	1.9	7.7	0.0031	0.27	0.25	3,053
Loader	1	5	6	30	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.61	1.7	6.9	0.0029	0.24	0.21	2,842
Water Truck	1	5	4	20	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	0.51	1.8	3.9	0.0015	0.23	0.21	1,425
Air compressor, Trailer-mounted	1	5	8	40	175	0.48	0.458	1.593	3.679	0.028	0.200	237.029	0.68	2.4	5.4	0.0021	0.30	0.27	1,754
Generator	1	5	8	40	120	0.74	0.923	2.822	5.727	0.045	0.454	420.920	1.4	4.4	9.0	0.0035	0.71	0.64	3,293
							ROG	CO	NOx	SOx	PM10	CO2	ROG	CO	NOx	SOx	PM10	PM2.5 ³	CO2
Qty	Days	Miles Round Trip	Trips	VMT/day			(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Flatbed Truck ⁴	25	5	17	25	85		0.48	3.09	10.820	0.015	0.358	1,521.336	0.091	0.58	2.0	0.00014	0.067	0.060	1,424
Worker Vehicles ⁵	6	5	50	30	300		0.058	1.85	0.205	0.003	0.007	308.616	0.038	1.2	0.14	0.00010	0.0046	0.0042	1,020
SUM													4.9	17	42	0.02	2.2	2.0	17,394

Table A-1 Criteria Pollutant Emission and CO2 Calculations

Tank Farm S
Port of Oakland, California

PHASE I (continued)							Emission Factors						Priority Criteria Pollutants						CO2
Remove Aboveground Tank	Qty	Days	Hours per	Total	HP	Load Factor	ROG	CO	NOx	SOx	PM	CO2	ROG	CO	NOx	SOx ¹	PM10 ²	PM2.5 ³	CO2
			day	Hours			(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Excavator with Shears	1	10	6	60	250	0.57	0.378	1.010	4.072	0.033	0.146	324.222	0.71	1.9	7.7	0.0031	0.27	0.25	6,106
Crane	1	10	4	40	250	0.43	0.343	0.956	3.38	0.025	0.138	244.589	0.32	0.91	3.2	0.0012	0.13	0.12	2,317
Boom Truck	1	10	4	40	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	0.51	1.8	3.9	0.0015	0.23	0.21	2,849
Loader	1	10	6	60	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.61	1.7	6.9	0.0029	0.24	0.21	5,685
Water Truck	1	10	4	40	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	0.51	1.8	3.9	0.0015	0.23	0.21	2,849
Air compressor, Trailer-mounted	1	10	8	80	175	0.48	0.458	1.593	3.679	0.028	0.2	237.029	0.68	2.4	5.4	0.0021	0.30	0.27	3,508
Generator	1	10	8	80	120	0.74	0.923	2.822	5.727	0.045	0.454	420.920	1.4	4.4	9.0	0.0035	0.71	0.64	6,586
	Qty	Days	Miles Round Trip	Trips	VMT/day		ROG	CO	NOx	SOx	PM10	CO2	ROG	CO	NOx	SOx	PM10	PM2.5 ³	CO2
							(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Flatbed Truck ⁴	75	10	17	75	128		0.48	3.09	10.820	0.015	0.358	1,521.336	0.14	0.87	3.0	0.00021	0.10	0.090	4,272
Worker Vehicles ⁵	12	10	50	120	600		0.058	1.85	0.205	0.003	0.007	308.616	0.08	2.4	0.27	0.00020	0.0093	0.0083	4,079
SUM													5.0	18	43	0.02	2.2	2.0	38,252
Remove Asphalt and Tank Pad	Qty	Days	Hours per	Total	HP	Load Factor	ROG	CO	NOx	SOx	PM	CO2	ROG	CO	NOx	SOx ¹	PM10 ²	PM2.5 ³	CO2
			day	Hours			(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Hydraulic Ram, Excavator-mounted	1	10	4	40	250	0.57	0.378	1.010	4.072	0.033	0.146	324.222	0.47	1.3	5.1	0.0021	0.18	0.16	4,071
Loader	1	10	6	60	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.61	1.7	6.9	0.0029	0.24	0.21	5,685
Backhoe	1	10	6	60	175	0.55	0.503	1.832	4.016	0.032	0.227	312.846	0.64	2.3	5.1	0.0020	0.29	0.26	3,979
Water Truck	1	10	4	40	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	0.51	1.8	3.9	0.0015	0.23	0.21	2,849
Air compressor, Trailer-mounted	1	10	6	60	175	0.48	0.458	1.593	3.679	0.028	0.2	237.029	0.51	1.8	4.1	0.0016	0.22	0.20	2,631
Generator	1	10	8	80	120	0.74	0.923	2.822	5.727	0.045	0.454	420.920	1.4	4.4	9.0	0.0035	0.71	0.64	6,586
Pavement Grinder	1	10	4	40	250	0.78	0.518	1.434	5.633	0.045	0.205	443.672	0.89	2.5	9.7	0.0039	0.35	0.32	7,623
	Qty	Days	Miles Round Trip	Trips	VMT/day		ROG	CO	NOx	SOx	PM10	CO2	ROG	CO	NOx	SOx	PM10	PM2.5 ³	CO2
							(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
10 cyd Dump Truck ⁴	4	5	69	4	55		0.48	3.09	10.820	0.015	0.358	1,521.336	0.06	0.38	1.3	0.000091	0.044	0.039	928
Worker Vehicles ⁵	6	5	50	30	300		0.058	1.85	0.205	0.0030	0.007	308.616	0.04	1.2	0.14	0.00010	0.0046	0.0042	1,020
SUM													5.2	17	45	0.02	2.3	2.0	35,372
Remove Underground Pipes	Qty	Days	Hours per	Total	HP	Load Factor	ROG	CO	NOx	SOx	PM	CO2	ROG	CO	NOx	SOx ¹	PM10 ²	PM2.5 ³	CO2
			day	Hours			(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Excavator	1	5	6	30	175	0.57	0.555	1.96	4.314	0.033	0.251	324.222	0.73	2.6	5.7	0.0022	0.33	0.30	2,137
Loader	1	5	6	30	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.61	1.7	6.9	0.0029	0.24	0.21	2,842
Backhoe	1	5	6	30	175	0.55	0.503	1.832	4.016	0.032	0.227	312.846	0.64	2.3	5.1	0.0020	0.29	0.26	1,990
Water Truck	1	5	4	20	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	0.51	1.8	3.9	0.0015	0.23	0.21	1,425
Air compressor, Trailer-mounted	1	5	8	40	175	0.48	0.458	1.593	3.679	0.028	0.2	237.029	0.68	2.4	5.4	0.0021	0.30	0.27	1,754
Generator	1	5	8	40	120	0.74	0.923	2.822	5.727	0.045	0.454	420.920	1.4	4.4	9.0	0.0035	0.71	0.64	3,293
	Qty	Days	Miles Round Trip	Trips	VMT/day		ROG	CO	NOx	SOx	PM10	CO2	ROG	CO	NOx	SOx	PM10	PM2.5 ³	CO2
							(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Flatbed Truck ⁴	20	10	17	20	34		0.48	3.09	10.820	0.015	0.358	1,521.336	0.036	0.23	0.81	0.000056	0.027	0.024	1,139
Worker Vehicles ⁵	6	5	50	30	300		0.058	1.85	0.205	0.0030	0.007	308.616	0.038	1.2	0.14	0.00010	0.0046	0.0042	1,020
SUM													4.7	17	37	0.01	2.1	1.9	15,600

Table A-1 Criteria Pollutant Emission and CO2 Calculations

Tank Farm S
Port of Oakland, California

PHASE I (continued)							Emission Factors						Priority Criteria Pollutants						CO2
Excavate Soil	Qty	Days	Hours per day	Total Hours	HP	Load Factor	ROG (gm/bhp-hr)	CO (gm/bhp-hr)	NOx (gm/bhp-hr)	SOx (gm/bhp-hr)	PM (gm/bhp-hr)	CO2 (gm/bhp-hr)	ROG (lb/day)	CO (lb/day)	NOx (lb/day)	SOx ¹ (lb/day)	PM10 ² (lb/day)	PM2.5 ³ (lb/day)	CO2 (lb)
Excavator	1	5	6	30	175	0.57	0.555	1.960	4.314	0.033	0.251	324.222	0.73	2.6	5.7	0.0022	0.33	0.30	2,137
Loader	1	5	6	30	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.61	1.7	6.9	0.0029	0.24	0.21	2,842
Backhoe	1	5	8	40	175	0.55	0.503	1.832	4.016	0.032	0.227	312.846	0.85	3.1	6.8	0.0027	0.39	0.35	2,653
Water Truck	1	5	4	20	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	0.5	1.8	3.9	0.0015	0.23	0.21	1,425
	Qty	Days	Miles Round Trip	Trips	VMT/day		ROG (g/VMT)	CO (g/VMT)	NOx (g/VMT)	SOx (g/VMT)	PM10 (g/VMT)	CO2 (g/VMT)	ROG (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 ³ (lb/day)	CO2 (lb)
20-cyd End-dump Truck ⁴	43	5	69	43	595		0.48	3.09	10.820	0.015	0.358	1,521.336	0.63	4.0	14	0.0010	0.47	0.42	9,971
Worker Vehicles ⁵	6	5	50	30	300		0.058	1.85	0.205	0.003	0.007	308.616	0.04	1.2	0.14	0.00010	0.0046	0.0042	1,020
SUM							3.4	14	38	0.01	1.7	1.5	3.4	14	38	0.01	1.7	1.5	20,048
Backfill	Qty	Days	Hours per day	Total Hours	HP	Load Factor	ROG (gm/bhp-hr)	CO (gm/bhp-hr)	NOx (gm/bhp-hr)	SOx (gm/bhp-hr)	PM (gm/bhp-hr)	CO2 (gm/bhp-hr)	ROG (lb/day)	CO (lb/day)	NOx (lb/day)	SOx ¹ (lb/day)	PM10 ² (lb/day)	PM2.5 ³ (lb/day)	CO2 (lb)
Loader	1	10	8	80	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.82	2.2	9.2	0.0039	0.32	0.29	7,580
Backhoe	1	10	8	80	175	0.55	0.503	1.832	4.016	0.032	0.227	312.846	0.85	3.1	6.8	0.0027	0.39	0.35	5,306
Water Truck	1	10	4	40	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	0.51	1.8	3.9	0.0015	0.23	0.21	2,849
Compactor, Flat-plate	1	10	6	60	15	0.59	0.321	1.496	2.147	0.034	0.152	244.588	0.038	0.17	0.25	0.00020	0.018	0.016	286
Compactor, Whacker	1	10	6	60	15	0.59	0.321	1.496	2.147	0.034	0.152	244.588	0.038	0.17	0.25	0.00020	0.018	0.016	286
	Qty	Days	Miles Round Trip	Trips	VMT/day		ROG (g/VMT)	CO (g/VMT)	NOx (g/VMT)	SOx (g/VMT)	PM10 (g/VMT)	CO2 (g/VMT)	ROG (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 ³ (lb/day)	CO2 (lb)
20-cyd End-dump Truck ⁴	117	10	69	117	810		0.48	3.09	10.820	0.015	0.358	1,521.336	0.86	5.5	19	0.0013	0.64	0.57	27,131
Worker Vehicles ⁵	6	10	50	60	300		0.058	1.85	0.205	0.003	0.007	308.616	0.038	1.2	0.14	0.00010	0.0046	0.0042	2,039
SUM							3.2	14	40	0.01	1.6	1.4	3.2	14	40	0.01	1.6	1.4	45,478
PHASE II							Emission Factors						Priority Criteria Pollutants						CO2
Remove Underground Pipes	Qty	Days	Hours per day	Total Hours	HP	Load Factor	ROG (gm/bhp-hr)	CO (gm/bhp-hr)	NOx (gm/bhp-hr)	SOx (gm/bhp-hr)	PM (gm/bhp-hr)	CO2 (gm/bhp-hr)	ROG (lb/day)	CO (lb/day)	NOx (lb/day)	SOx ¹ (lb/day)	PM10 ² (lb/day)	PM2.5 ³ (lb/day)	CO2 (lb)
Excavator	1	5	6	30	175	0.57	0.555	1.96	4.314	0.033	0.251	324.222	0.73	2.6	5.7	0.0022	0.33	0.30	2,137
Loader	1	5	6	30	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.61	1.7	6.9	0.0029	0.24	0.21	2,842
Backhoe	1	5	8	40	175	0.55	0.503	1.832	4.016	0.032	0.227	312.846	0.85	3.1	6.8	0.0027	0.39	0.35	2,653
Water Truck	1	5	8	40	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	1.0	3.5	7.8	0.0029	0.46	0.41	2,849
Air compressor, Trailer-mounted	1	5	8	40	175	0.48	0.458	1.593	3.679	0.028	0.2	237.029	0.68	2.4	5.4	0.0021	0.30	0.27	1,754
Generator	1	5	8	40	120	0.74	0.923	2.822	5.727	0.045	0.454	420.920	1.4	4.4	9.0	0.0035	0.71	0.64	3,293
	Qty	Days	Miles Round Trip	Trips	VMT/day		ROG (g/VMT)	CO (g/VMT)	NOx (g/VMT)	SOx (g/VMT)	PM10 (g/VMT)	CO2 (g/VMT)	ROG (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 ³ (lb/day)	CO2 (lb)
Flatbed Truck ⁴	20	5	17	20	68		0.48	3.09	10.820	0.015	0.358	1,521.336	0.07	0.5	2	0.00011	0.05	0.05	1,139
Worker Vehicles ⁵	6	5	50	30	300		0.058	1.85	0.205	0.003	0.007	308.616	0.04	1.2	0	0.00010	0.00	0.00	1,020
SUM							5.4	19	43	0.02	2.5	2.2	5.4	19	43	0.02	2.5	2.2	17,688

Table A-1 Criteria Pollutant Emission and CO2 Calculations

Tank Farm S
Port of Oakland, California

PHASE II (continued)							Emission Factors						Priority Criteria Pollutants						CO2
Excavate Soil	Qty	Days	Hours per	Total	HP	Load Factor	ROG	CO	NOx	SOx	PM	CO2	ROG	CO	NOx	SOx ¹	PM10 ²	PM2.5 ³	CO2
			day	Hours			(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Excavator	1	10	8	80	175	0.57	0.555	1.96	4.314	0.033	0.251	324.222	1.0	3.4	7.6	0.0029	0.44	0.40	5,699
Bucket loader	1	10	6	60	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.61	1.7	6.9	0.0029	0.24	0.21	5,685
Backhoe	1	10	8	80	175	0.55	0.503	1.832	4.016	0.032	0.227	312.846	0.85	3.1	6.8	0.0027	0.39	0.35	5,306
Water Truck	1	10	8	80	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	1.0	3.5	7.8	0.0029	0.46	0.41	5,699
	Qty	Days	Miles Round Trip	Trips	VMT/day		ROG	CO	NOx	SOx	PM10	CO2	ROG	CO	NOx	SOx	PM10	PM2.5 ³	CO2
							(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
20-cyd End-dump Truck ⁴	97	10	69	97	671		0.48	3.09	10.820	0.015	0.358	1,521.336	0.72	4.6	16	0.0011	0.53	0.48	22,493
Worker Vehicles ⁵	6	10	50	60	300		0.058	1.85	0.205	0.003	0.007	308.616	0.04	1.2	0.14	0.00010	0.0046	0.0042	2,039
SUM													4.2	18	45	0.01	2.1	1.9	46,921
Backfill	Qty	Days	Hours per	Total	HP	Load Factor	ROG	CO	NOx	SOx	PM	CO2	ROG	CO	NOx	SOx ¹	PM10 ²	PM2.5 ³	CO2
			day	Hours			(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(gm/bhp-hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
Loader	1	45	8	360	250	0.55	0.337	0.914	3.785	0.032	0.131	312.846	0.82	2.2	9.2	0.0039	0.32	0.29	34,110
Backhoe	1	45	8	360	175	0.55	0.503	1.832	4.016	0.032	0.227	312.846	0.85	3.1	6.8	0.0027	0.39	0.35	23,877
Water Truck	1	45	8	360	175	0.57	0.579	2.004	4.418	0.033	0.261	324.222	1.0	3.5	7.8	0.0029	0.46	0.41	25,645
Compactor, flat plate	1	45	6	270	15	0.59	0.321	1.496	2.147	0.034	0.152	244.588	0.038	0.17	0.25	0.00020	0.018	0.016	1,287
Compactor, whacker	1	45	6	270	15	0.59	0.321	1.496	2.147	0.034	0.152	244.588	0.038	0.17	0.25	0.00020	0.018	0.016	1,287
	Qty	Days	Miles Round Trip	Trips	VMT/day		ROG	CO	NOx	SOx	PM10	CO2	ROG	CO	NOx	SOx	PM10	PM2.5 ³	CO2
							(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(g/VMT)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb)
20-cyd End-dump Truck ⁴	465	45	69	465	715		0.48	3.09	10.820	0.015	0.358	1,521.336	0.76	4.9	17	0.0012	0.56	0.51	107,827
Worker Vehicles ⁵	6	45	50	270	300		0.058	1.85	0.205	0.003	0.007	308.616	0.038	1.2	0.14	0.00010	0.0046	0.0042	9,177
SUM													3.6	15	41	0.011	1.8	1.6	203,210

Notes:

Off-road equipment emission rates from URBEMIS2007 User Guide, assumes 2005 engines.

VMT = vehicle miles traveled

ROG = reactive organic gas

CO = carbon monoxide

NOx = oxides of nitrogen

SOx = sulfur oxide

PM = particulate matter

PM10 = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less

PM2.5 = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less

CO2 = carbon dioxide

gm/bhp-hr = gram per brake horsepower- hour

lb/day = pound per day

lb = pound

gm = gram

EF = emission factor

LF = load factor

brake horse power = hp x LF

Equipment Emissions = [qty x hr/dy x HP x LF x EF]/454 gm/lb

Truck Emissions = [qty x mi/dys x EF]/454 gm/lb

Worker Vehicles = [qty x mi x EF]/454 gm/lb

GHG = [CO2 lb/dy x dys]

¹ Emissions adjusted for ultra-low sulfur fuel.

² Assumes all exhaust particulate matter is PM10.

³ Assumes the 90 percent of exhaust particulate matter is PM2.5.

⁴ Assumed heavy duty diesel truck traveling at an average speed of 55 miles per hour.

⁵ Assumed automobile traveling at an average speed of 55 miles per hour.

Table A-2 Greenhouse Gas Emission Calculations
 Southfield Tank Farm
 Port of Oakland, California

PHASE I

	CO2 ¹ (lb)	Diesel (gal)	CH4 (lb)	N2O (lb)	Gasoline (gal)	CH4 (lb)	N2O (lb)
Free Product Recovery Well Installation							
Drill Rig	1,409	63	0.081	0.036			
Support Truck	168	7.5	0.010	0.0043			
Worker Vehicles	68				3.5	0.0039	0.0017
Remove Block Wall							
Excavator	3,053	137	0.18	0.078			
Loader	2,842	128	0.16	0.073			
Water Truck	1,425	64	0.08	0.037			
Hydraulic Ram, Excavator-mounted	3,053	137	0.18	0.078			
Air compressor, Trailer-mounted	1,754	79	0.10	0.045			
Generator	3,293	148	0.19	0.085			
10 cyd Dump Truck	1,855	83	0.11	0.048			
Worker Vehicles	1,020				52	0.058	0.025
Remove Aboveground Pipes							
Crane	1,158	52	0.066	0.030			
Boom Truck	1,425	64	0.08	0.037			
Hydraulic Ram, Excavator-mounted	3,053	137	0.18	0.078			
Loader	2,842	128	0.16	0.073			
Water Truck	1,425	64	0.082	0.037			
Air compressor, Trailer-mounted	1,754	79	0.10	0.045			
Generator	3,293	148	0.19	0.085			
Flatbed Truck	1,424	64	0.08	0.037			
Worker Vehicles	1,020				52	0.058	0.025

Table A-2 Greenhouse Gas Emission Calculations
 Southfield Tank Farm
 Port of Oakland, California

PHASE I (continued)

	CO2 ¹ (lb)	Gallons Diesel	CH4 (lb)	N2O (lb)	Gallons Gasoline	CH4 (lb)	N2O (lb)
Remove Aboveground Tank							
Excavator with Shears	6,106	274	0.35	0.16			
Crane	2,317	104	0.13	0.060			
Boom Truck	2,849	128	0.16	0.073			
Loader	5,685	255	0.33	0.15			
Water Truck	2,849	128	0.16	0.073			
Air compressor, Trailer-mounted	3,508	157	0.20	0.090			
Generator	6,586	296	0.38	0.17			
Flatbed Truck	4,272	192	0.24	0.11			
Worker Vehicles	4,079				210	0.23	0.10
Remove Asphalt and Tank Pad							
Hydraulic Ram, Excavator-mounted	4,071	183	0.23	0.10			
Loader	5,685	255	0.33	0.15			
Backhoe	3,979	179	0.23	0.10			
Water Truck	2,849	128	0.16	0.073			
Air compressor, Trailer-mounted	2,631	118	0.15	0.068			
Generator	6,586	296	0.38	0.17			
Pavement Grinder	7,623	342	0.44	0.20			
10 cyd Dump Truck	928	42	0.053	0.024			
Worker Vehicles	1,020				52	0.058	0.025
Remove Underground Pipes							
Excavator	2,137	96	0.12	0.055			
Loader	2,842	128	0.16	0.073			
Backhoe	1,990	89	0.11	0.051			
Water Truck	1,425	64	0.08	0.037			
Air compressor, Trailer-mounted	1,754	79	0.10	0.045			
Generator	3,293	148	0.19	0.085			
Flatbed Truck	1,139	51	0.065	0.029			
Worker Vehicles	1,020				52	0.058	0.025

Table A-2 Greenhouse Gas Emission Calculations
 Southfield Tank Farm
 Port of Oakland, California

PHASE I (continued)

	CO2 ¹ (lb)	Gallons Diesel	CH4 (lb)	N2O (lb)	Gallons Gasoline	CH4 (lb)	N2O (lb)
Excavate Soil							
Excavator	2,137	96	0.12	0.05			
Loader	2,842	128	0.16	0.07			
Backhoe	2,653	119	0.15	0.07			
Water Truck	1,425	64	0.08	0.04			
20-cyd End-dump Truck	9,971	448	0.57	0.26			
Worker Vehicles	1,020				52	0.058	0.0254
Backfill							
Loader	7,580	340	0.43	0.19			
Backhoe	5,306	238	0.30	0.14			
Water Truck	2,849	128	0.16	0.07			
Compactor, Flat-plate	286	13	0.016	0.01			
Compactor, Whacker	286	13	0.016	0.01			
20-cyd End-dump Truck	27,131	1,218	1.6	0.70			
Worker Vehicles	2,039				105	0.12	0.051

PHASE II

Remove Underground Pipes							
Excavator	2,137	96	0.12	0.05			
Loader	2,842	128	0.16	0.07			
Backhoe	2,653	119	0.15	0.07			
Water Truck	2,849	128	0.16	0.07			
Air compressor, Trailer-mounted	1,754	79	0.10	0.05			
Generator	3,293	148	0.19	0.08			
Flatbed Truck	1,139	51	0.065	0.03			
Worker Vehicles	1,020				52	0.058	0.025
Excavate Soil							
Excavator	5,699	256	0.33	0.15			
Bucket loader	5,685	255	0.33	0.15			
Backhoe	5,306	238	0.30	0.14			
Water Truck	5,699	256	0.33	0.15			
20-cyd End-dump Truck	22,493	1,010	1.3	0.58			
Worker Vehicles	2,039				105	0.12	0.051

Table A-2 Greenhouse Gas Emission Calculations
 Southfield Tank Farm
 Port of Oakland, California

PHASE II (continued)

Backfill	CO2 ¹ (lb)	Gallons Diesel	CH4 (lb)	N2O (lb)	Gallons Gasoline	CH4 (lb)	N2O (lb)
Loader	34,110	1,531	2.0	0.88			
Backhoe	23,877	1,072	1.4	0.61			
Water Truck	25,645	1,151	1.5	0.66			
Compactor, flat plate	1,287	58	0.074	0.033			
Compactor, whacker	1,287	58	0.074	0.033			
20-cyd End-dump Truck	107,827	4,840	6.2	2.77			
Worker Vehicles	9,177				472	0.52	0.23
SUM (lb/dy)	459,905		25	11		1.3	0.59

BUILDING CONSTRUCTION	CO2 ² (lb)
Grading	2,349
Trenching	4,932
Building	1,785
Asphalting and Building	3,392
Building	1,785
Architectural Coating	18
Asphalting	1,229
SUM (lb/dy)	15,491

Diesel Emission Factors³

Diesel CO2 (lb/gal)	22.28
CH4 (gm/gal)	0.58
N2O (gm/gal)	0.26

Gasoline Emission Factors³

Gasoline CO2 (lb/gal)	19.43
CH4 (gm/gal)	0.50
N2O (gm/gal)	0.22

NOx and CH4 to CO2 EQ GWP factors³

N2O GWP = 310
CH4 GWP = 21

Total CO2 EQ (Metric Tons)	218
-----------------------------------	------------

Notes:

GHG = greenhouse gas
 CO2 = carbon dioxide
 N2O = nitrous oxide
 CH4 = methane
 CO2 EQ = CO2 equivalent
 gal = gallon

GWP = global warming potential
 lb = pound
 lb/day = pound per day
 lb/gal = pound per gallon
 gm/gal = gram per gallon

¹ See Table A-1 for CO2 calculations.

² From URBEMIS software model.

³ California Climate Action Registry. 2009, General Reporting Protocol, Version 3.1, January.

11/15/2010 11:55:33 AM

Time Slice 7/11/2011-7/22/2011	4.53	30.50	<u>18.64</u>	<u>0.00</u>	0.02	<u>2.09</u>	2.11	0.01	<u>1.93</u>	<u>1.93</u>	3,392.27
Active Days: 10											
Asphalt 07/11/2011-07/22/2011	2.89	16.09	11.48	0.00	0.01	1.36	1.38	0.01	1.25	1.26	1,607.27
Paving Off-Gas	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.15	9.07	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,272.04
Paving On Road Diesel	0.05	0.82	0.27	0.00	0.00	0.03	0.03	0.00	0.03	0.03	131.29
Paving Worker Trips	0.07	0.12	2.14	0.00	0.01	0.01	0.02	0.00	0.00	0.01	203.95
Building 06/20/2011-10/21/2011	1.64	14.40	7.16	0.00	0.00	0.73	0.74	0.00	0.67	0.68	1,785.00
Building Off Road Diesel	1.61	14.15	6.45	0.00	0.00	0.72	0.72	0.00	0.66	0.66	1,685.71
Building Vendor Trips	0.02	0.23	0.16	0.00	0.00	0.01	0.01	0.00	0.01	0.01	47.49
Building Worker Trips	0.02	0.03	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.80
Time Slice 7/25/2011-10/21/2011	1.64	14.40	7.16	0.00	0.00	0.73	0.74	0.00	0.67	0.68	1,785.00
Active Days: 65											
Building 06/20/2011-10/21/2011	1.64	14.40	7.16	0.00	0.00	0.73	0.74	0.00	0.67	0.68	1,785.00
Building Off Road Diesel	1.61	14.15	6.45	0.00	0.00	0.72	0.72	0.00	0.66	0.66	1,685.71
Building Vendor Trips	0.02	0.23	0.16	0.00	0.00	0.01	0.01	0.00	0.01	0.01	47.49
Building Worker Trips	0.02	0.03	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.80
Time Slice 10/24/2011-11/4/2011	<u>15.00</u>	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.85
Active Days: 10											
Coating 10/24/2011-11/04/2011	15.00	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.85
Architectural Coating	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.85
Time Slice 3/5/2012-3/9/2012	<u>1.96</u>	<u>11.13</u>	<u>8.70</u>	<u>0.00</u>	<u>0.01</u>	<u>0.93</u>	<u>0.94</u>	<u>0.00</u>	<u>0.85</u>	<u>0.86</u>	<u>1,229.40</u>
Active Days: 5											
Asphalt 03/05/2012-03/09/2012	1.96	11.13	8.70	0.00	0.01	0.93	0.94	0.00	0.85	0.86	1,229.40
Paving Off-Gas	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.03	0.40	0.13	0.00	0.00	0.01	0.02	0.00	0.01	0.01	71.61
Paving Worker Trips	0.05	0.09	1.73	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.56

11/15/2010 11:55:33 AM

Phase Assumptions

Phase: Fine Grading 6/6/2011 - 6/10/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 0.32

Maximum Daily Acreage Disturbed: 0.08

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/13/2011 - 6/17/2011 - Contaminated Soil Excavation

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 7/11/2011 - 7/22/2011 - Default Paving Description

Acres to be Paved: 1.1

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 3/5/2012 - 3/9/2012 - Type Your Description Here

Acres to be Paved: 0.3

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

Page: 4

11/15/2010 11:55:33 AM

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 6/20/2011 - 10/21/2011 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Other Equipment (250 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 10/24/2011 - 11/4/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

APPENDIX B

MITIGATION MONITORING REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM
South Field Tank Farm Remediation Project, Oakland, California

Impact and Mitigation Measure No.	Impact Summary	Mitigation Measure	Implementation and Reporting		Monitoring and Reporting Actions	Implementation Schedule
			Responsible Party	Reviewing & Approval Party		
Air Quality						
AIR-1 (Tank Farm S)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<p>OFFC shall ensure that contract specification require the following BAAQMD recommended basic construction mitigation measures during construction activities at Tank Farm S to reduce emission of particulate matter as dust.</p> <ol style="list-style-type: none"> 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, as necessary, to prevent wind-blown dust. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day, or as necessary. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 mph. 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. 6. Post a publicly visible sign with the telephone number and person to contact at the Port of Oakland regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. 	OFFC	Port of Oakland	OFFC shall ensure that specification documents within the bid package contain requirements for dust control consistent with the RMP and Mitigation Measure AIR-1. During the remediation and associated redevelopment, OFFC shall provide monthly memoranda to the Port documenting that the contractor has complied with dust mitigation measures.	Prior to publication of bid package and during entire period of Tank Farm S redevelopment and associated remediation.
Biological Resources						
BIO-1 (Tank Farm S)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	A pre-construction survey shall be conducted for burrowing owl within 30 days of project-related ground disturbing activities to determine whether any nesting owls are present and to provide for their passive relocation during the non-breeding season if nests are encountered. The survey area shall include the area proposed for excavation as well as all areas (to be identified and staked or otherwise identified) to be used for vehicle parking, staging area, stockpiling of soil, and soil borrow areas. The survey shall be conducted by a qualified biologist consistent with the latest Burrowing Owl Protocol and Mitigation Guidelines. If nesting owls are encountered, they would be passively relocated consistent with the Burrowing Owl Management Plan (URS Greiner Woodward Clyde, 1999) and the subsequent Burrowing Owl Mitigation Program (Port of Oakland, 1999) developed for the OIA.	OFFC	Regional Water Board	Submit records demonstrating that the survey was conducted in accordance with Burrowing Owl Protocol and Mitigation Guidelines by a qualified person.	Pre-remediation and redevelopment
Geology and Soils						
GEO-1 (Tank Farm S, Tank Farm C, Fuel Transfer Station)	Strong seismic ground shaking.	Following a seismic event of 5.3 or greater magnitude at nearby active faults, Tank Farm S, Tank Farm C, and the KMEP Facility shall be inspected by a licensed engineer. The inspection shall include inspection of each groundwater monitoring well, any remedial system (if operated), such as the PRB and biosparge or bioventing system components, and vapor barriers or structures (if any). The licensed engineer shall make recommendations for restoring any damaged well or remedial system(s) to its intended functionality. The inspection, recommendations, and implementation of recommendations shall be documented in the annual report submitted to the Regional Water Board as part of the SMP requirements.	OFFC, Chevron, KMEP	Regional Water Board	Submit records of inspections and remedies, as applicable, in Annual Reports as part of the SMP.	After an earthquake of 5.3 or greater magnitude on nearby regional active faults.

MITIGATION MONITORING AND REPORTING PROGRAM
South Field Tank Farm Remediation Project, Oakland, California

Impact and Mitigation Measure No.	Impact Summary	Mitigation Measure	Implementation and Reporting		Monitoring and Reporting Actions	Implementation Schedule
			Responsible Party	Reviewing & Approval Party		
GEO-2 (Tank Farm S, Tank Farm C, Fuel Transfer Station)	Seismic-related ground failure, including liquefaction.	Implement Mitigation Measure GEO-1	OFFC, Chevron, KMEP	Regional Water Board	Submit records of inspections and remedies, as applicable, in Annual Reports as part of the SMP.	After an earthquake of 5.3 or greater magnitude on nearby regional active faults.
Transportation/Traffic						
TRA-1 (Tank Farm S)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	OFFC shall notify the BART construction management liaison of the Tank Farm S remediation and associated redevelopment to ensure that the haul trucks from the tank farm would not result in conflicts with the BART connector project on Hegenberger Road. OFFC shall inform haul truck operators associated with Tank Farm S of any detours that may be required, if any, and document that truckers follow the required detours.	OFFC	Port of Oakland	Provide documentation prior to mobilization that BART construction management liaison has been contacted)	During mobilization, demobilization, and truck hauling.
TRA-2 (Tank Farm S)	Conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	During truck hauling, construction equipment mobilization and demobilization, OFFC shall provide a traffic controller at the pedestrian cross walk by Edward White Way and, as-needed, at the entrance and exit to the employee parking lot to minimize conflicts with trucks and construction equipment. In addition, the Port Environmental Permits and Programs Division shall be notified one week in advance of mobilization, demobilization, and soil hauling activities.	OFFC	Port of Oakland	Provide documentation to the Port of Oakland in weekly reports during mobilization, demobilization and truck hauling periods that a traffic controller was engaged at the pedestrian crosswalk and entrance and exits to employee parking lot.	During mobilization, demobilization, and truck hauling.

Notes:
BAAQMD = Bay Area Air Quality Management District
Chevron = Chevron Products Company
KMEP = Kinder Morgan Energy Partners
OFFC = Oakland Fuel Facilities Corporation
Regional Water Board = San Francisco Bay Regional Water Quality Control Board
SMP = Self-Monitoring Program